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Mentoring for Collaborations and Team Science

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David M. Pollock and Jennifer S. Pollock

Collaborations are "More Than the Sum of the Parts"

We do not have to tell anyone who has been in research for 20+ years that the nature of biomedical research has changed. Funding has become far more competitive. Publications require more and more data. Promotion and tenure committees want a longer list of accomplishments. Few medical

schools will hire faculty without the applicant holding an NIH grant. With advances in technology, not just in the lab but in the office as well (computers, e-mail, etc.), there is a clear expectation to be more productive than ever and generate more data faster. These are all things that have changed dramatically over the course of our career. So, how is one to compete? What advice do you give to someone fighting to get his or her career off the ground?

There are as many opinions on how best to pursue an academic research career as there are academic researchers. Wouldn't life be simpler if there were one straightforward answer to these questions? It is important to gain perspectives from as many "mentors" as possible, but one of the ways that we have found success is through collaborations and working in teams.

Collaboration is defined as "a mutually beneficial and well-defined relationship entered into by two or more organizations to achieve common goals. The relationship includes a commitment to a definition of **mutual goals**; a **jointly developed structure** and **shared responsibility; mutual authority** and **accountability** for success; and **sharing of resources and rewards**" (Winer MB. *Collaboration Handbook, Creating, Sustaining, and Enjoying the Journey.* St. Paul, MN: Amherst H. Wilder Foundation, 1994). Note the emphasis. Both parties must share in the success or the collaboration will fail. All too often we scientists enter into collaboration with the view that we will gain something from someone else, but remember, they must gain something from you as well. One of the best examples one can consider is if two labs are working

Physiology – The Source of Nail-Biting Excitement in Kuala Lumpur!

Close to 400 medical students vyed to grab top honors as members of the team with the strongest command of physiology. More than 100 of their faculty members gathered for a 3-hour physiology refresher course. To those of us inured to the slow accretion of departments without physiology in their names or the loss of physiology as a visible component of the medical curriculum, these numbers seem hard to believe. But in fact they represent the attendance at the 13th annual Inter-Medical School Physiology Quiz (IMSPQ), organized and hosted by the Department of Physiology at the University of Malaya in Kuala Lumpur,

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APS News

The Founders Circle

The American Physiological Society is proud to announce the initiation of a new program designed to honor the 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 to 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
- science policy and public outreach



The APS recognizes members of The Founders Circle in several ways. Members receive an invitation to the Presidents Reception at Experimental Biology and are listed on the Society's website, in the annual report, and in the March edition of *The Physiologist*.

The Founders Circle Gift Levels

Henry Pickering Bowditch Founder, \$5,000+ S. Weir Mitchell Founder, \$2,500-\$4,999 H. Newell Martin Founder, \$1,000-\$2,499 John Green Curtis Founder, \$500-\$999 Russell H. Chittenden Founder, \$250-\$499

Founders of the APS

In the late 19th century, three renowned physiologists formed the American Physiological Society with the intent of promoting physiological knowledge and its utilization. Henry Pickering Bowditch, S. Weir Mitchell, and Henry Newell Martin were signers of the original letter of invitation to attend the organizational meeting in 1887.

Henry Pickering Bowditch established the first university laboratory of experimental physiology in the U.S. and served as the first APS president in 1888 and again from 1891 to 1895 for a total of 6 years. S. Weir Mitchell was the eldest and most distinguished founder, known for researching snake venom, cerebellar function, the knee jerk, and the physiology and pathology of nerves. He introduced the idea of forming the Society and served as the second APS president from 1889 to 1990. H. Newell Martin served as the first secretary-treasurer of APS from 1887 to 1892 and kept historical records for the Society. He is best known for his preparation of the isolated mammalian heart and training six of the charter members of the Society.

John Green Curtis and Russell H. Chittenden are also considered founders of the APS given their prominent roles in the formation and early history of the Society. John Green Curtis was a member of the first Council and held the first organizational meeting in his laboratory at Columbia. Russell H. Chittenden is the Society's longest serving president, a total of 9 years (1896-1904).

For more information, please contact the Development Office or visit *the-aps.org/giving*.

John R. Van Ness, Ph.D. Development Officer (301) 634-7406 *jvanness@the-aps.org*

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Mentoring for Collaborations and Team Science

on the same scientific question but using different approaches. If *investigator A* performs experiments for *investigator B*, then *B* must provide something in return. This could be as simple as a co-authorship on a paper, but it could be any number of beneficial activities, such as effort on a grant or expertise in a different realm. Unfortunately, too many collaborations wind up being one-sided, where *investigator A* does a lot of work but then is left out of the discussion about how to achieve common goals or is only viewed as a technical resource. Collaborations also fail from lack of commitment from one of the two parties. So often we have had discussions with investigators about potential collaborations only to see the lines of communication crawl so slowly that any benefit is lost.

Often investigators fail to see the benefit to collaborations. It often sounds nice, but, in the end, both parties must understand that you can accomplish much more than if you were working as individuals. We have all heard the phrase "more than the sum of the parts." This is a perfect description of what a successful collaboration is all about. Also, if both parties have identical skills and identical goals, then there is no value in collaborating.

Benefits of Collaborations

The true value in collaborating is to be able to accomplish original science that results from a blend of contrasting skills. Another major benefit of collaborative science is that it can allow both parties to broaden their area of investigation. Most grant review groups are looking for new ideas and want the applicant to explore something new. All too often the criticism of being "incremental" is because, as scientists, we want to take the next step based on our previous step. However, moving the field requires us to take steps in new directions. Quite often, this new step is in an unexpected direction. You may be an expert in an area such as renal physiology, but developing a collaboration with a cardiovascular expert who focuses on circadian clock genes may lead you in a completely new and novel direction. This has the added benefit of expanding your own expertise. Learning from a collaborator requires you to respect their expertise and to be open to a different way of thinking. Your collaborator should feel the same way about you. After all, learning to ask new questions is what science is all about - agreed?

Successful Collaborations: Respect, Motivations, Leadership, Communication

There are several keys to successful collaborations. First, there is respect of individual expertise. Diversity of expertise is key to a productive collaboration and tremendously broadens the scope of information available for the project. If your collaborator is not interested in at least listening to your ideas, then the collaboration will not succeed. You may be able to share data, but if all they want is your technique and not your ideas, then you are being used and possibly not respected. Without diversity in expertise, the caliber of thinking is compromised. This lack of recognition can lead to conflict down the road.

You need to have a clear understanding of the motivations of your collaborator and they need to know yours in return. Why do they want to collaborate? Too often there is an assumption by one party or the other that winds up being incorrect and results in misunderstandings. Some people may be motivated by job demands, such as pressure from their department chair or supervisor. Others may be motivated by the opportunity for personal success. This may seem to be an obvious motivation for everyone, but this is not necessarily the case. In general, most people are primarily motivated by one of three possible factors. The first major motivator is power. The ability to obtain influence and drive the process gives many individuals a strong sense of prestige, as well as the belief this will lead to success. A second category is achievement. This comes from accumulating numbers (e.g., number of publications), accumulating awards, being highly rated compared with peers, and so forth. Finally, there are many people who are motivated by their affiliation with others. This can be difficult for people from the other categories to understand. Connecting with friends and coworkers, helping others, and needing a positive response from others is key.

Another important aspect of successful collaborations is an understanding of leadership styles. Do you clearly know what the organizational structure is within the group you are collaborating? If you are communicating with a trainee, does the trainee's sponsor know what you are discussing? Could this end up resulting in a problem down the road? Do you know if you are talking to the right person? The first step in developing a collaborative arrangement may be determining whom to ask first. When interfacing with a new laboratory, do you know whether there is a clear vision on what the goal might be, or are they the type that needs to go one step at a time before developing a clear vision? Are they the type of person whose intentions are easy to know, or is it hard to read their intentions? Often, hard-to-read people are viewed as being judgmental when they are really simply gathering information and deep in thought. Knowing these motivations and personality characteristics is important to success and avoiding conflict.

While all of these aspects of collaborations are important, most of us would probably agree that good communication is the most essential element. Clearly, the ability to communicate includes language and verbal communication, but all too often these days we communicate in writing through e-mail. We have all received those e-mails where we think the person is angry or we struggle to interpret their intent. This can be terribly dangerous. One rule of thumb is to never include sarcasm or jokes in e-mails, especially if it is in a professional relationship. Even with people you know very well, you need to be cautious. Use of "haha" or an emoticon is often useful, but generational differences can also be difficult. I remember how loud my children laughed at me when I told them I thought "lol" meant "lots of love."

In e-mail communication, it is vitally important to make sure that the person received the e-mail before moving forward with an important decision or getting frustrated with your collaborator. There are some people who seem to always say, "I never got the e-mail." Often times, the e-mail is received during a flurry of activity or when the person is traveling, and it may simply slip someone's mind. Of course, it is always possible that the e-mail went to the junk folder or perhaps there was an actual problem with the e-mail failing to be sent. It is quite dangerous to assume the worst motives in people based on e-mail behavior.

Related to communication, one must also be willing to listen to constructive criticism and know how to give constructive criticism. As scientists, we are trained to question everything, so when your colleague questions something you did, you should be appreciative of their intentions to get to the answer and do the best work. However, this criticism often comes in a combative way and not in a constructive tone. As with e-mail, one should not assume that a criticism is a judgment. Of course, if the criticism continues to be harsh and judgmental to the point of becoming personally insulting, one must be prepared to walk away from the collaboration. Again, this needs to be approached with caution because the relationship between you and your collaborator could have consequences for future interactions.

Collaborations: Conflict Resolution

We often hear that the best way to not have conflict is to avoid it. While this is easier said than done, knowing how deal with a potential conflict with a collaborator is another key to a long-lasting relationship. As discussed above, knowing the differences between yourself and your collaborator is the first step. Knowing your collaborator's motivations, how your collaborator fits within his/her organizational structure, and who has decision-making power is essential.

Should you find yourself in a conflict with a collaborator, there are several important steps to keep the problem from escalating. This includes seeking additional information about the problem without accusations. Keep focused on the bigger goal and do not dwell on minor "he said/she said" details. Find the points in which both parties can agree. You can then seek a potential solution from your collaborator that can be of mutual benefit. It may also be possible to find someone who can mediate the problem, but this must be someone both parties can agree to.

In general, some type of conflict is inevitable in all relationships. Adapting and learning from each type of conflict is imperative for the long-term health of the collaborative relationship. Learning to take the "high road" and thinking through a resolution that involves a "win" for both parties results in a long-lasting relationship. In the end, you may simply have to walk away from the collaboration but not the relationship. This is far better than continuing a nonfunctional relationship, especially if it can be done without causing lasting damage to your professional relationship.

Perspective

What we have laid out here are some very broad recommendations for how to manage and go about conducting collaborative research. It is clear to us that collaborations have tremendous potential to accomplish far more than what you can do by yourself. However, they do take some time and mental effort to make sure they are successful. One caveat, however, for the new person early in their career: You must keep a balance between developing your own independent research program and your collaborations. There is always the danger that you will be viewed by grant review committees as someone who may be great to work with but is unable to stand on his/her own. Unfortunately, many peer reviewers are unable, or sometimes even unwilling, to determine whether an early stage investigator truly is capable of making an important contribution in the collaborative relationship. Nonetheless, we believe working in collaborative teams should be the way of the future, since there are plenty of examples of how it can work successfully.

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

David M. Pollock is the NRTC Endowed Professor in the Division of Nephrology at the University of Alabama at Birmingham, where he is leading a translational research group in cardio-renal physiology and medicine. Pollock currently serves as Past-President of APS as well as Editor of the APS journal *Comprehensive Physiology*. Pollock's research is related to the control of sodium excretion and the role of the kidney in blood pressure regulation. In collaboration with his wife and other investigators, his work is funded by a total of four grants from NIH and an American Heart Association grant, all of which are multi-investigator programs.

Jennifer S. Pollock is a Professor at the University of Alabama at Birmingham. She earned her PhD from University of North Carolina-Chapel Hill, with postdoctoral training under Ferid Murad, 1998 Nobel Laureate. She began her academic career at Medical College of Georgia (now known as Augusta University), serving as the Director of the MD/ PhD Program, and received several research and teaching awards, including the 2015 Bodil Schmidt-Nielsen Award from APS. In 2014, Pollock relocated her lab to UAB. Her research career involves cardio-renal research focused on the nitric oxide and endothelin pathways. Her lab has been instrumental in deciphering mechanisms of early life stress and translating this research to humans. Pollock has authored over 170 publications with funding from NIH and American Heart Association. She has served in leadership positions in several societies during her career and mentored over 75 trainees.

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in August 2015. One of us (Cheng Hwee Ming) was the lead organizer of the event; the other (Kim E. Barrett) had the honor of being the invited speaker for the refresher course in GI Physiology.

The quiz was initially conceived to honor the late Professor A. Raman, who was the first Malaysian Professor of Physiology and Head of the Department of Physiology at the University of Malaya. A medical graduate of that institution, he decided to relinquish his clinical career to join the team building the new medical faculty at the University of Malaya. He studied both teaching and research at the University of Dundee, Scotland, then returned in 1965 to head the department in Kuala Lumpur until his untimely death in 1998. Professor Raman was a firm believer in the physiological basis of medical practice, and thus it is fitting that not only was the IMSPQ established to honor him but also that his name graces the trophy that is the grand prize for the winning team.

From small beginnings, the IMSPQ now attracts teams from all over Malaysia as well as many other countries

in the region and beyond. In fact, 89 teams from 23 countries were entered into this year's quiz, from countries as distinctive as Myanmar, China, Bangladesh, Croatia, and the Sudan. A highlight of the event was the cultural evening, where dozens of students danced, sang, and performed acrobatics and martial arts to convey their unique national and regional identities, often in colorful traditional dress. The IMSPQ itself has grown so large that the 1-day oral event is now preceded by an intense 2-hour multiple choice exam, from which only about the top half of teams were chosen to progress. Indeed, the refresher course for accompanying lecturers that was recently added to run concurrently with the exam, besides providing resources for better teaching, also helps to distract the faculty from anxiously pacing outside the exam hall and worrying about how their students are performing.

The quiz day itself was electrifying. Over an 8-hour period, 40 teams of three were whittled down to 3 finalists. Each student was posed a question in each round, which they had 15 seconds to answer or risk having the points stolen



The Inter-Medical School Physiology Quiz grand prize winners (from Universitas Gadjah Mada in Yogyakarta, Indonesia)

by another team. It was often excruciating to watch the students search for a detailed point of physiology, which could come from any part of the medical curriculum. The audience was also totally rapt - no texting, Facebook, or e-mails appeared to distract them from the contest before them. And unlike television guiz shows, this quiz did not boast massive monetary prizes, but rather textbooks of physiology and medicine for the finalists, semi-finalists, and winners of the preliminary rounds and high scorers in the written exam. Indeed, the most valuable prize appeared to be bragging rights for the teams that truly demonstrated their mastery of medical physiology. The grand prize winners were the team from Universitas Gadjah Mada in Yogyakarta, Indonesia (see picture), which incidentally also will be the first institution outside the University of Malaya to host the 14th quiz next year.

In fact, the IMSPQ has now spawned a number of regional events in Sri Lanka, China, and the UK. Many of the teams from these events entered and did well at the quiz in Kuala Lumpur, such as the Chinese champion, the Fourth Military Medical University. The UK contest was interesting in that it was organized by Malaysian Medics International, a student-led group dedicated to the support of Malaysian students studying medicine in the UK, but involved both Malaysian and non-Malaysian students in the participating teams. This also reflects the highly international nature of medical school classes in many countries outside the U.S.

All in all, it was inspiring to see so many medical students willing to travel to Malaysia, often across vast distances, to devote their precious free time to compete with their colleagues and demonstrate their mastery of physiology. It was also exciting to see how the students were able so easily to interact across national, religious, and ethnic boundaries, and likely many of them will have forged lasting friendships with peers from across the globe. This reminds us that science, medicine, and above all physiology are universal languages. And for those of us who worry that physiology may be losing its identity in the U.S., the guiz provided ample reassurance that a large group of future medical professionals, as well as their teachers, still fully appreciate the importance of a solid grounding in physiology for their future careers. Perhaps the APS also should consider organizing an Inter-Medical School Physiology Quiz in North America to showcase our field and its practitioners. Interested parties are urged to contact Cheng Hwee Ming for insights (*chenghm@ummc.edu.my*).

Cheng Hwee Ming, University of Malaya Kim E. Barrett, University of California, San Diego



Committee Reports

APS Council Holds Summer Meeting in Bethesda

The APS Council held its annual summer meeting in Bethesda, MD, July 22-24, 2015, at the DoubleTree Hotel in Bethesda, MD. Each summer, the Council invites the APS Committee Chairs to the summer meeting to present their annual committee reports to Council. The committee reports begin on p. 288 and will be posted to each committee's web page.

Council approved the proposal to create an APS Development Committee. The group will begin as a Task Force with the potential to change to a Committee in the future. The task force will oversee and work on development for APS.

Council accepted a request to endorse the recommendations of the National Sleep Foundations (NSF) Sleep Duration report. The report defines how much sleep a person needs based on their age group.

In addition to presenting their reports, the chairs discussed the highlights of their committees' activities and programs during the past year and updated Council on the committee's goals and plans for the coming year. The chairs also submit requests for new committee programs to Council for their approval.

The Awards Committee submitted a proposal to Council to increase the value of each of the Career Enhancement Awards (CEA). Council approved the proposal for the increase of the CEA awards as follows: up to \$20,000 for the Research Career Enhancement Awards and up to \$10,000 for the Teaching Career Enhancement Awards. Applicants for these Awards must be APS members for a minimum of 2 years at the time of application.

The Career Opportunities Committee submitted a proposal to request \$1,000 in travel support for the Video Contest winners to attend Experimental Biology (EB), a request approved by Council.

The Membership Committee submitted three requests to Council. The first request was to approve and implement a revised committee charge, the second request was to endorse a committee name change from the Membership Committee to the Membership and FAPS Committee, and the third was to amend the composition of the Committee from its current 9 members to a group that consists of 16 regular members and 3 FAPS members. Council approved all three requests from the Membership Committee.

As requested by the Porter Physiology Development and Minority Affairs Committee, Council approved the proposal to create a new award, the A. Clifford Barger Underrepresented Minority Mentorship Award. The Award recognizes APS members who mentor underrepresented minorities in the physiological sciences. The second request approved by Council was a joint proposal with the Career Opportunities in Physiology Committee for approval of an Undergraduate Research Award, allocating up to \$1,750 per year for 5 years for the program.



APS staff recognition awardees. *Front:* Stephen Strumpf, David Udoff, Stephanie Rozier, Teki Bynum, Virginia Million. *Back:* Patricia Molina, Scarletta Whitsett, Miranda Byse, Joseph Girouard, Martin Frank.



APS Council. Front: Marshall Montrose, Barbara Alexander, John Chatham, Patricia Molina, Jane Reckelhoff, David Pollock. Back: Robert Hester, Wolfgang Kuebler, J. Michael Wyss, M. Harold Laughlin, Curt Sigmund, Lisa Leon, Irene Solomon, Rudy Ortiz, Kevin Kregel, Hannah Carey, Bill Yates, Meredith Hay, David Gutterman.



APS Committee Chairs. *Front:* Margarita Curras-Collazo, Ida Llewellyn-Smith, Caroline Rickards, Erica Dale. *Back:* Michael Sturek, Robert Brock, Gaylen Edwards, Kathy Ryan, Barbara Goodman, Michael Brands.

The Women in Physiology Committee submitted a request to approve funding for a one-time planning meeting to better focus their discussions on issues of concern to the Committee. The Council approved the request, allocating up to \$22,000 for a 1.5-day meeting to be held at APS headquarters in early 2016 to plan for the future initiatives.

Each year during the Council/Committee Chairs meeting, APS hosts an employee appreciation reception. The reception provides an opportunity for members of Council and the committee chairs to meet with the APS staff. During the reception, APS President Patricia Molina thanked the staff, saying, "It is a pleasure for me to present the staff with the service awards this year. APS is presenting 13 awards, which is a testament to the Society and its leadership. The average tenure for employees at APS is 12.5 years. The staff ensures that APS runs smoothly and that the ideas initiated by Council and the Chairs become a reality. No other Society has as dedicated a staff as APS."

The highlight of the reception every year is the recognition of those staff members who have worked for APS for 5 years or more (anniversary is based on 5-year intervals). Each employee celebrating an anniversary receives a certificate of appreciation and a gift certificate. This year APS President Patricia Molina presented a 30-year certificate to Martin Frank (executive director); 20-year certificates to Teki Bynum (peer review coordinator), DeShaun Proctor (copy editor), and Virginia Million (senior journal supervisor); 15-year certificates to Kathleen Pleet (journal coordinator) and Stephani Rozier (subscription database specialist); 10year certificates to Stephen Strumpf (art editor), David Udoff (copy editor), Joseph Girouad (journal supervisor editor), Edward Dwyer (peer review coordinator), and Scarletta Whitsett (executive assistant); and 5-year certificates to Margaret Steiben (Program Manager, K-12 Education Programs), and Miranda Byse (Program Manager, LSTRC).

Martin Frank, 30 Years of Service



Left to right: Jane Reckelhoff, Patricia Molina, Martin Frank, and David Pollock.

During the Summer Council, Council members recognized APS staff who have served for longer than 5 years. This year, Marty Frank was recognized for his 30 years of service to the Society. This moment of recognition was a special time to thank him for his dedication and professionalism in working with APS Presidents and Council in achieving our collective goals. Marty was commended by his staff for his caring approach and for his recognition of the importance of supporting individual's choices in balancing family commitments and work responsibilities. This approach has been able to elicit the best from his staff overall. His skillful ability to interact with a variety of APS Presidents over the past 30 years was recognized as a unique trait, and one that should be isolated and extracted to be passed on to whomever succeeds him in that position. APS staff decided to make a concerted effort to aid him in his golfing skills, which apparently have not been as stellar as his performance as APS Executive Director. They presented him with a windbreaker to

wear during his golfing outings, hoping this will improve his game. APS has been fortunate in having Marty as its executive director, making sure that when we all go back to our full time jobs someone is there to make sure that our vision gets implemented.

Animal Care and Experimentation Committee



Gaylen L. Edwards

ACE Committee Meetings

The Animal Care and Experimentation (ACE) Committee met July 23-24, 2014 in Bethesda. In addition to the Committee's business meeting, 13 APS members went to Capitol Hill to discuss animal research issues with 20 House and Senate offices. Topics discussed included a Housepassed bill to reduce regula-

tory burden and concerns about transportation options for research animal. Several members of the committee tweeted about their experiences under the hashtag #HillDayAPS.

The ACE Committee also met during EB 2015. Its fall 2015 meeting is scheduled for October 20-21 in Bethesda.

ACE Committee Activities

The committee developed a position statement supporting air transportation of laboratory animals. Council adopted the statement "Air Transport of Animals Advances Human and Animal Welfare" on June 30, 2014. The Office of Science Policy subsequently created a webpage explaining the importance of reliable transportation options for research animals.

The Committee proposed several updates to the APS Guiding Principles for the Care and Use of Vertebrate Animals in Research and Training. Council accepted these recommendations on October 15, 2014.

As part of ongoing efforts to reduce regulatory burden, APS Science Policy Analyst Linda Yang wrote an article about new guidance from NIH's Office of Laboratory Animal Welfare. This guidance permits institutions to streamline approvals for certain changes to animal research protocols. The article was widely disseminated, including to a listserv for some 1,000 IACUC administrators.

APS submitted several sets of comments to the USDA concerning regulatory issues:

- On May 14, 2015, APS offered suggestions how to reduce regulatory burden under the Animal Welfare Act (AWA).
- On May 19, 2015, APS submitted comments to the USDA concerning the AWA's alternatives search requirement.

Current and Future ACE Committee Projects

As part of ongoing APS efforts to address concerns about scientific rigor, Chair Gaylen Edwards will present a keynote address at the fall SCAW meeting on the topic "Reproducibility in Research: Redundancy or Requirement."

The ACE Committee is organizing a Public Affairs Symposium at EB 2016 on the topic "Having trouble with your IACUC?" Incoming Committee Chair Jeff Henegar will chair the session.

Council accepted the report of the Animal Care and Experimentation Committee.

Tang Prize Lecture to be Presented at Experimental Biology 2016

Established in 2012, the Tang Prize in Biopharmaceutical Science awards ~\$1.3 million in recognition of "original biopharmaceutical or biomedical research that has led to significant advances toward preventing, diagnosing, and/or treating major human diseases to improve human health."

http://bit.ly/TangPrize



Tang Prize Foundation CEO Chern Jenn-chuan with AAA Executive Director Shawn Boynes and APS Executive Director Martin Frank sign a cooperative pact at EB 2015. (Photo Credit: Taiwan Today)

Awards Committee



Overview of Committee Activities

One of the most important functions of the Awards Committee is to assess applications for two categories of Society awards: the APS Career Enhancement Awards and the APS Young Investigator Awards.

As mentioned above, the Career Enhancement Awards (CEAs) were established in

1995. Two categories of award are given: Research CEAs and Teaching CEAs. Unlike the majority of Society awards, both established and early career professionals can apply for these awards. Each year, there are two calls for applications, one in the Spring (submission deadline April 15) and the other in the Fall (submission deadline November 15). Up to 10 applications in total are funded annually. APS itself provides the funding for the Career Enhancement Awards, so their value is set by the APS Council.

APS has four awards that are given to Young Investigators: the Arthur Guyton Award for Excellence in Integrative Physiology (established 1993), the Lazaro J. Mandel Young Investigator Award (first awarded

in 2000), the Shih Chun Wang Young Investigator Award (first awarded in 1999), and the Dean Franklin Young Investigator Award (first awarded in 2012). These Awards are aimed at postdoctoral fellows, medical residents, and early career professionals, and only one award is given annually in each category. The submission date for applications for the Young Investigator Awards occurs near the end of each calendar year, and the awards are presented at the Experimental Biology meeting the following year. The Young Investigator Awards are supported by donated funds managed within the APS Endowment Fund. The Society uses 4% of the trailing 3-year average of the respective account annually, which explains why the dollar amount associated with the award will vary from year to year.

Young Investigator Awards

Figure 1 shows the numbers of applications for Young Investigator Awards (YIAs) over the past 7 years. Compared with the 2014 round, the numbers of YIA applications for 2015 were up in all categories. The Committee received 7 applications for the Guyton Award compared with 5 in 2014, 13 for the Dean Franklin YIA compared with 11 in 2014, 7 for the Lazaro J. Mandel YIA compared with 6 in 2014, and 8 for the Shih-Chun Wang YIA compared with 3 in 2014. YIAs continue to attract very impressive applicants. The winners of the 2015 YIAs are:

 Arthur C. Guyton Award for Excellence in Integrative Physiology
 Basel O'Compose Coordia Basenta University

Paul O'Connor, Georgia Regents University

- Dean Franklin Young Investigator Award Eric Belin de Chantemele, Georgia Regents University
- Lazaro J. Mandel Young Investigator Award Timo Reig, University of California San Diego and VA San Diego Healthcare System
- Shih-Chun Wang Young Investigator Award Jennifer Pluznick, Johns Hopkins University School of Medicine



Figure 1. Number of applications per award from 2009 to 2015.

Due to high variability in the content of the applications for the 2014 YIAs, the Awards Committee prepared, circulated, and approved revised descriptions and guidelines that were uploaded to APS Awards website before 2015 applications were submitted. Use of the revised guidelines resulted in applications for 2015 YIAs that were much more consistent in content and therefore easier for the Awards Committee to compare and judge.

Career Enhancement Awards

In the Fall 2014 round, the Awards Committee received six applications, a disappointingly small number. Three applications were for a Research CEA, and three were for a Teaching CEA. Despite the low total number of applications, two applications for Research CEAs and two applications for Teaching CEAs were of high quality and were therefore recommended for funding.

In the Spring 2015 round, numbers of applications were somewhat better. The Committee received five applications for Research CEAs and three applications for Teaching CEAs. There were three Research CEA applications of very high quality, and all of these were funded. The Committee also decided to fund an application for a Teaching CEA that had been revised on the basis of comments on an application submitted to the Fall 2014 round.

Awardees

Research Car	earch Career Enhancement		
Fall 2014	Paul Reynolds	Brigham Young University	
	Li Wang	University of Connecticut	
Spring 2015	g 2015 Oleg Palygin Medical College of Wisconsin David Proctor Penn State University Gina Yosten Saint Louis University ning Career Enhancement		
Teaching Car			
Fall 2014	Krista Blackwell Rutgers-New Jersey Medical School		
	William Johnson	University of South Florida	
Spring 2015	Thomas Pressley	Texas Tech University	

The review of the Spring 2015 round of CEA applications in late May confirmed that descriptions and guidelines for these awards needed review, and the Committee has undertaken this process. The revised guidelines and description for both Teaching and Research CEAs are now available on the APS website (*http://www.the-aps. org/mm/awards/Other-APS-Awards*) so that they can be use by applicants for the Fall 2015 round of applications.

Council accepted the report of the Awards Committee.

Career Opportunities in Physiology Committee



Kathy Ryan, Chair

In 2015, the Career Opportunities in Physiology Committee (COPC) and Trainee Advisory and Women in Physiology Committees again coordinated the topics of their sessions to provide a complementary set of career advancement sessions for physiologists. Committee members Erica Wehrwein and Christine Schnackenberg chaired the session entitled "Resilience is Power: Deal-

ing with the Ups and Downs of Your Scientific Career." Speakers provided background information on

resilience and studies that have been done on how to best cope with stress, information on how to help others be resilient, and personal stories about how they had to be resilient in their careers. Attendees gave most of the presentations high "usefulness" ratings. The workshop drew a good-sized group of about 200 attendees. Multimedia presentations from the symposium are available at the Life Science Teaching Resources Communty (LifeSciTRC; *http://www.lifescitrc. org/resource.cfm?submissionID=10063*).

2016 Career Symposium

In 2016, Committee members Christine Schnackenberg and Clintoria Richards-Williams will co-chair the COPC Symposium "Leadership and Management Skills: What You Might not See in Your CV." The purpose of this symposium is to explore, identify, and apply inherent and learned leadership/management skills.

Undergraduate Summer Research Fellowship Program (UGSRF)

2013-14 Program. The UGSRF Program supports 24 full-time undergraduate students annually to work in the laboratories of established APS investigators. The 2014-2015 UGSRFs completed their fellowship year by attending EB 2015 in Boston, MA. Of the 24 fellows, 23 (96%) attended EB. Of those, 20 (87%) submitted an abstract. The 2014-2015 UGSRFs, like those in the past, competed successfully in the David S. Bruce Excellence in Undergraduate Research Award program, winning 4 of the 30 abstract awards and 2 of the 14 Bruce Research Awards.

2015-2016 Program. For the 16th year of the program, 105 applications were received, down a few percent from last year but still almost double the number received in previous years. The quality of the applications was deemed very high by the Committee, and they were pleased to be able to recommend 24 students for fellowships; these students were subsequently approved by Council ballot. Thus 23% of the applications were funded, which allowed for very high selectivity on the part of the Committee. Over the 16-year history of the program, the program has received 934 applications for the 300 awards granted, with an average funding rate of 32%.

APS Undergraduate Research Excellence Fellowship Award (UGREF)

The UGREF Program annually supports six full-time second- to fourth-year undergraduate students who have more than 9 months of research experience to continue to work in the laboratories of established investigators. Both students and faculty sponsors/advisors must be active members of the APS in good standing. The 2014-2015 UGREFs completed their fellowship year by attending EB 2015 in Boston, MA. Of the six fellows, all attended EB. All of those (100%) submitted a first-author abstract. The 2014-2015 UGREFs who applied competed successfully in the David S. Bruce Excellence in Undergraduate Research Award program, winning 2 of the 30 abstract awards. Those two students were also named Bruce Research Awardees.

For the third year of the program, 28 applications were received for the six fellowships. The quality of the applications was again deemed very high by the Committee. The Committee was pleased to recommend six students for fellowships; these students were subsequently approved by Council ballot. Thus 21% of the applications were funded, which allowed for extremely high selectivity on the part of the Committee.

Undergraduate Orientation Session at EB

The EB 2015 orientation session attracted 110+ undergraduate students. All undergraduate students who submitted a first-author physiology poster were invited, and announcements were posted in e-mails to the Trainee and All-APS listservs. Members of the Careers, Trainee Advisory, and Education Committees gave the session presentations. Past-President Kim Barrett, President David Pollock, and President-elect Patricia Molina welcomed all of the undergraduate students and presented certificates to the UGSRF, UGREF, STRIDE, and IOSP Fellows. All three committees were well represented, with multiple members attending to talk with the students during and after the session and to assist in distributing materials.

Career Outreach Resources

APS Trading Cards. In 2014, the Committee developed trading cards describing the work of diverse physiologists for outreach to middle and high school students. These career cards provide an opportunity for greater interaction with students. If students go to the website on the card, they can answer a question about the physiologist on the card. This in turn will unlock a special "hidden" biography card that they can print or save. Feedback was very positive from both physiologists and teachers about the new trading cards. During PhUn Week 2014, "trading card" sets (3-4 biography cards, a physiology career card, and a Physio-Facts card with fun facts about human/animal physiology) were distributed to every 5th to 12th grader taking part in PhUn Week events. Sets were also distributed at the APS booth during the National Association of Biology Teachers Conference, Association of Middle Level Educators Conference, and the EB 2015 Teacher Student Workshop. Following these events, there was a spike in web traffic on the APS careers website, suggesting that links on the cards were used.

In 2014, 16% of the children participating in PhUn Week events were pre-K to 2nd graders (i.e., "pre-readers") for whom there were no APS resources available. To provide career info and physiology engagement for early elementary grades (K-2), the Committee is expanding the current Phizzy Bear activity booklet, which includes math and problem-solving activities. Age-appropriate activities are being added that align with new K-12 science education standards that emphasize data collection as well as provide information on what physiologists do. The new activity book will be a resource for PhUn Week outreach to early elementary students.

APS Career PowerPoint Presentations. APS provides downloadable PowerPoint files for use at the middle and high school levels, as well as lower and upper undergraduate levels. Since the initiation of this project, these PowerPoint presentations have become important tools not only for use by APS members individually but in both undergraduate and K-12 outreach programs, especially PhUn Week. Presentations are available at the APS website (Careers Committee page) and at the LifeSciTRC.

APS Local and Regional Science Fair Awards

This program encourages APS members to make an APS physiology award at their local or regional science fair at the elementary, middle, or high school level. The program provides opportunities for students from elementary through high school to learn what physiology is and to become "associated with the field" through recognition of their work. The program also builds connections between APS members and their local schools. Finally, it encourages local fairs to promote physiology-based projects to their students, since there are potential awards to be won. Student winners receive an APS t-shirt and a certificate for the best physiology project. The teachers of the winning students receive the APS book Women Life Scientists: Past, Present, and Future and an APS resource packet. Up to 100 awards are available each year on a first-come, first-served basis. From January 1, 2015 to June 1, 2015, 15 requests for a Science Fair Award Packet have been received from APS members. New program features in 2015 include 1) making all elementary and middle school science projects eligible for awards, with preferences given to experimental projects; and 2) making graduate students

eligible to present awards, contingent on approval by department chairs.

Physiology Video Contest for Undergraduate and Graduate Students

This program engages undergraduate and graduate students in creating engaging, accurate, informative, and entertaining physiology videos for the general public. The Committee was pleased to receive 10 submissions that met all of the award criteria. The applicants included both undergraduate and graduate students. The Committee selected "How to Hold your Breath Longer Underwater Tutorial" by Nancy Phu, Sherwin Abtahi, Phi Nguyen, and Kathy Huynh from San Jose State University as the best video winner. This team also received the Viewer's Choice award, which was selected by the general viewing public. Unfortunately, a representative of this team was not able to attend EB. All entries are catalogued in the LifeSciTRC. One of the advantages of the video contest is that the videos continue to be viewed and to promote physiology long after the contest has ended. Each video remains on YouTube (unless the video creator deletes it) and can be accessed and linked to from other sites. Since the program's inception in 2011, video submissions have been viewed nearly 134,000 times on YouTube.

Excellence in Professional Student (MD or DO) Research Travel Award

The award supports up to 10 MD or DO students who are first authors on abstracts to attend EB, present their research, and attend an orientation session. For the third year of the program, 17 applications were received, an increase of 113%. The quality of the majority of applications was deemed very high by the Committee. The Committee was pleased to recommend 10 students for fellowships; these students were subsequently approved by Council ballot. Thus 59% of the applications were funded. These students were matched with a mentor for EB. Fellows and mentors corresponded via e-mail and then met each other at an orientation session on Sunday morning. COPC Members Eileen Chang and Norma Ojeda gave a brief presentation and encouraged mentors to offer advice to the MD/DO students. President-elect Patricia Molina, an MD herself, gave a short presentation encouraging the students and emphasizing the importance of continuing to conduct research. APS President David Pollock and Executive Director Martin Frank attended the orientation session and presented awards. Following presentation of awards, the students participated in "speed mentoring" with the mentors; each student was given a few minutes to talk with a mentor before moving to the next mentor. All but two of the students (78%) gave the orientation session a rating of 4 or 5 (where 5 is "very useful"). All but two students gave their meeting mentor a rating of 5. All of them noted they would recommend the program to a fellow MD or DO student.

Council approved the Committee's request for \$1,000 in travel support for Video Contest winners to attend EB.

Council accepted the report of the Career Opportunities in Physiology Committee. ●

Chapter Advisory Committee



Michael Sturek, Chair

The local APS Chapters continue to promote the future of physiological sciences overall and the APS with more grassroots involvement at the graduate, undergraduate, and high school levels. The Chapters contribute to four of the five strategic priority areas and both cross-cutting themes of the APS 2010 Strategic Plan. An overall goal is for the activities of the Chapters to

further influence public policy. The number of active Chapters has grown from 13 to the current level of 14. The main activity is the annual meetings, which typically have ~60-120 participants in a 1- to 2-day meeting. Novel methods for promoting poster attendance, etc. have been used. There is an increasing emphasis on career development in the changing

research and education environment. A major strength is the emphasis on trainee involvement in running meetings. Six of 14 active chapters were involved in outreach/advocacy activities in the past year, so this essential function has improved and will continue to improve in the coming year. Chapters are reminded that advocacy speakers are available through APS. Although the APS website has guidelines for establishing and maintaining a Chapter, a more detailed "User's Manual" is under construction. Involvement of smaller colleges in the Chapter activities greatly improves outreach to undergraduates. Finally, in the case of institutions that have no formal Physiology Department, Chapters might serve as a "local network" or "virtual department." See also "Chapters" on the APS website (http://www.the-aps.org/mm/hp/Audiences/ Chapters).

Council accepted the report of the Chapter Advisory Committee.

Committee on Committees



Bill Yates, Chair

The Committee on Committees (CoC) is composed of a representative appointed by each of the 12 APS Section Steering Committees plus two Councilors who serve as Chair and In-coming Chair. The primary duty of the CoC is to nominate individuals to serve on APS standing committees and on outside bodies where the APS is represented. The CoC members try to identify

and promote members of their section who might serve on committees and, more importantly, by setting aside section affiliations, work together to nominate the bestqualified individuals to serve the Society while seeking to promote diversity and involvement of younger members in the committee structure.

Characteristics of the 2016 Applicant Pool

The CoC was pleased with the pool of applications for committee vacancies. This year 117 applications (Table 1A) were submitted (this includes member positions, chairs, and trainee/student positions). Table 1C shows the applicant pool by section affiliation by committee. Tables 2A and 2B show the characteristics of the applicant pool and new appointees.

Results from Coc and Council Meetings

The CoC initially had 41 positions to fill. The Publications Committee requested one additional member for their committee. The addition was approved by Council.

APS Standing Committees/Number of Positions (including new positions recommended by the CoC; does not include alternate positions).

Table 1

Committee	Number of Positions Available	
Animal Care & Experimentation	Chair, 3 members, 1 trainee	
Awards	3 members	
Career Opportunities in Physiology	Chair, 3 members,	
Communications	Chair, 2 members	
Conference	2 members	
Daggs	0 members	
Distinguished Physiologists	Chair, 3 members	
Education	Chair appointed by the Executive Cabinet, 4 members	
Finance	Chair appointed by executive cabinet, 2 members	
International	3 members, 1 trainee	
Membership	0 members	
Perkins	0 members	
Porter Physiology Development	2 members, 1 Porter Fellow	
Publications	Chair appointed by Executive cabinet, 2 member	
Science Policy	2 members	
Women in Physiology	3 members	
Totals	*41 Total positions: 4 Chairs, 33 members, 1 Porter Fellow, 1 trainee.	

*This number does not include the positions to be selected by the Executive Cabinet.

Tables 3A and 3B shows the composition of the committees in terms of representation by section affiliation, members that are under the age of 45, women, members living outside of the U.S., and students.

Planning for 2017

The CoC hopes that many APS members will consider serving the Society as a member of one of its standing committees, and we hope that the Section Steering Committees and SAC will play an active role in encouraging section members to apply. Some sections do a fine job of putting names forward, whereas others are essentially not heard from. Applications can be submitted via the APS award site and are due along with an endorsement form by January 15, 2016. Those candidates who are unsuccessful at securing a committee appointment initially are encouraged to resubmit their credentials for consideration for the same or another committee in the next cycle.

Council accepted the report of the Committee on Committees. ●

Table 1A. Total number of applicants

ACE	11
Awards	13
Careers	11
Communications	0
Conference	2
Daggs	0
Distinguished Physiologists	3
Education	19
Finance	2
International	25
Membership	0
Perkins	0
PIC	0
Porter	4
Publications	4
Science Policy	9
Women	14
Total	117*

*This includes candidates who applied for more than one committee.

Table 1B. Total number of applicants by section

CV	20
Cell	10
CNS	4
Comparative	2
EEP	11
Endocrinology	12
GI&L	6
NCAR	8
Renal	13
Respiration	9
Teaching	8
WEH	13
TOTAL	117

Table 1C: Total number of applicants by section

(based on 117 applications)

	CV	Cell	CNS	Comp.	Endo.	EE P	GI&L	NCAR	Renal	Resp.	Teach.	WEH	None	Total
ACE	3	1	0	0	2	1	2	0	0	0	0	2	0	11
Awards	1	2	0	2	0	2	0	2	3	0	0	1	0	13
Careers	2	2	0	0	2	1	0	0	0	1	1	2	0	11
Communications	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Conference	1	0	0	0	0	0	0	0	1	0	0	0	0	2
Daggs	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Distinguished	1	0	0	0	1	0	1	0	0	0	0	0	0	3
Education	1	0	0	0	2	3	1	1	1	0	7	3	0	19
Finance	0	1	0	0	1	0	0	0	0	0	0	0	0	2
International	4	2	1	0	2	2	0	2	4	4	0	3	1	25
Membership	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Perkins	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Porter	3	0	0	0	1	0	0	0	0	0	0	0	0	4
Publications	1	0	1	0	0	1	0	0	1	0	0	0	0	4
Science Policy	2	1	2	0	1	0	0	1	0	2	0	0	0	9
Women	1	1	0	0	0	1	2	2	3	2	0	2	0	14
TOTALS	20	10	4	2	12	11	6	8	13	9	8	13	1	117

Table 2A. Section affiliation of applicant pool and new appointees (based on 117 applications, does not include alternates)

Section	2013	2014	2015	2016	All APS Members**
Cardiovascular	5 (12.2%)	6 (11.8%)	9 (18.8%)	20 (23.4%)	22%
Cell & Molecular	3 (7.3%)	5 (9.8%)	0	10 (11.7%)	13%
Central Nervous System	5 (12.2%)	2 (3.9%)	0	4 (4.68%)	9%
Comparative	2 (4.9%)	4 (7.8%)	4 (8.3 %)	2 (2.34%)	4%
Endocrine & Metabolism	2 (4.9%)	2 (3.9%)	1 (2.1%)	12 (14.04%)	8%
EEP	2 (4.9%)	2 (3.9%)	4 (8.3%)	11 (12.87%)	10%
Gastrointestinal & Liver	3 (7.3%)	3 (5.9%)	4 (8.3%)	6 (7.02%)	6%
NCAR	4 (9.8%)	4 (7.8%)	4 (8.3%)	8 (9.36%)	6%
Renal	2 (4.9%)	7 (13.7%)	7 (14.6 %)	13 (15.21 %)	7%
Respiration	5 (12.2%)	4 (7.8%)	2 (4.2 %)	9 (10.53%)	8%
Teaching	4 (9.8%)	2 (3.9%)	4 (8.3%)	8 (9.36%)	4%
WEH	3 (7.3%)	10 (19.6%)	9 (18.8 %)	13 (15.21%)	2%
TOTAL	40	51	48	117	11,432

*Does not include honorary or affiliate members.

	2013	2014	2015	2016	All APS Members
Under age 45	21 (16.4%)	30 (52.6%)	22 (9.6%)	73 (85.41%)	40%
*Women	19 (14.8%)	22 (38.6%)	31 (3.6%)	48 (56.16%)	29%
Reside outside of U.S.	6 (4.7 %)	1 (1.8%)	2 (0.9%)	11 (9.4%)	27%
**Student	0	2 (3.5%)	1 (0.4%)	10 (8.5%)	18%

Table 2B. Other characteristics of the applicant pool and new appointees (based on 117 applications, does not include alternates)

*Not all members indicate gender. **This number refers to student members only (undergraduate and graduate, not postdocs).

Table 3A. Section affiliation of 2016 APS standing committee members

(Does not include Chapter Advisory Committee, Committee on Committees, Joint Program Committee, Physiologists in Industry Committee, Section Advisory Committee, and Trainee Advisory Committee)

	2013	2014	2015	2016	All APS Members
Cardiovascular	23 (15.2%)	20 (12.5%)	57 (25.9%)	21 (14.09%)	22%
Cell & Metabolism	11 (7.3%)	12 (7.5%)	21 (9.5%)	14 (9.4%)	13%
Central Nervous System	9 (6.0%)	9 (5.6%)	9 (4.1%)	6 (4.03%)	9%
Comparative	5 (3.3%)	9 (5.6%)	7 (3.2%)	10 (6.71%)	4%
Endocrine & Metabolism	5 (3.3%)	7 (4.4%)	9 (4.1%)	5 (3.36%)	8%
EEP	9 (6.0%)	13 (8.1%)	19 (8.6%)	10 (6.71%)	10%
Gastrointestinal & Liver	13 (8.6%)	9 (5.6%)	9 (4.1%)	7 (4.7%)	6%
NCAR	17 (11.3%)	18 (11.3%)	20 (9.1%)	7 (4.7%)	5%
Renal	14 (9.3%)	17 (10.6%)	20 (9.1%)	15 (10.07%)	7%
Respiration	12 (8.0%)	15 (9.4%)	6 (2.7%)	4 (2.68%)	8%
Teaching	10 (6.6%)	8 (5.0%)	16 (7.3%)	15 (10.07%)	4%
WEH	23 (15.2%)	23 (14.4%)	27 (12.3%)	20 (13.42%)	2%
TOTAL	151	160	220	149	11,432**

*Does not include honorary or affiliate members. Please note the for 2016 there are 15(10.07%) members who did not select their primary section.

Table 3B. Other characteristics of 2016 APS standing committee members

(Does not include Chapter Advisory Committee, Committee on Committees, Joint Program Committee, Physiologists in Industry Committee, Section Advisory Committee, and Trainee Advisory Committee)

	2012	2013	2014	2015	All APS Members
Under age 45	45 (29%)	72 (48%)	76 (47.5%)	103 (46.8%)	40%
*Women	75 (48.3%)	73 (48%)	77 (48.2)	81 (36.8%)	29%
Reside outside of U.S.	8 (5.1%)	9 (6.0%)	9 (5.7%)	11 (5%)	27%
**Students	7 (4.5%)	6 (4.0%)	10 (6.4)	2 (0.9%)	18%

*Not all members indicate gender. **This number refers to student members only (undergraduate and graduate, not postdocs).

Communications Committee



Barb Goodman, Chair

The Communications Committee acts as advisors to the APS Communications Office, part of the APS Marketing and Communications Department, consisting of Stacy Brooks (communications manager), Coleen Kitaguchi (webmaster/digital communications specialist), and Maggie Kuo (communications/ social media coordinator).

Press Release Program

APS Communications continues to issue press releases on scientific articles published in APS journals including Articles-in-PresS (AiPS), articles in final publication, and APS*select* articles.

The top five most popular releases in 2015 to date have addressed

- the most effective type of exercise for fighting obesity
- the effects of sleep apnea during pregnancy
- that e-cigarette vapor with or without nicotine causes damage to the lungs
- patient-related factors that may predict recovery outcomes following hip replacement

• the link between polycystic ovary syndrome and diabetes

Promoting Physiological Research on Social Media

The overall goals of APS social media outreach are to use platforms such as Facebook and Twitter to:

- Promote APS and physiology to an audience interested in the physiological sciences, APS initiatives, and news and information related to the business of science
- Expand the reach of research published in APS journals to reach the broader research community and the media
- Engage our audiences and use their feedback to tailor our content and how we present it
- Drive traffic to the APS website

Facebook. We use the APS National Facebook page to promote APS and encourage discussion of topics relevant to physiologists and other research scientists.

Twitter. The APS National Twitter handle gives the organization the opportunity to promote information across all APS departments and in all areas of physiology. It also allows us to promote content that appears in the

journals (including AiPS, APSselect articles, and Editor's Picks) and on individual APS journal feeds.

YouTube. Since launching the APS YouTube channel in June 2014, we've posted 31 videos, including interviews with APS journal editors-in-chief and senior physiologists via the APS Living History project. Video content on the YouTube page will continue to be updated as we expand our video offerings and receive more videos from EB 2015 filming, including Living History interviews, an organizational "identity" video, content from several symposia, and promotional videos for upcoming APS conferences.

I Spy Physiology Blog

The Communications Office - with guidance from the Communications Committee - developed and launched the I Spy Physiology (ISP) blog. The current site launched in February 2015. The weekly blog posts touch on a variety of physiology-based topics. The posts are written on an 8th- to 10th-grade reading level and aim to expose the reader to a variety of physiological and scientific topics and concepts that relate to everyday experiences. APS Communications staff coordinates content, edits contributor posts, and writes for the blog. Several members of the Communications Committee and other APS members have contributed posts. Committee member Emily Johnson serves as "volunteer editor," drumming up guest bloggers and helping with follow up with blog contributors. The Communications Office welcomes feedback on the new blog and invites other APS members to consider contributing a post!

AAAS Mass Media Fellow

The APS Communications Committee selected Johanna Varner as the AAAS Mass Media Fellow. Varner has a bachelor's and master's degree in bioengineering from Massachusetts Institute of Technology and recently completed her PhD in ecology from the University of Utah. She studied the effects of climate change on the behavior of pikas for her thesis work. Varner completed her internship at KQED, the public media affiliate in San Francisco.

PhysiologyInfo.org

PhysiologyInfo.org (PIO) – APS's public-facing website – relaunched at the end of 2013. The Communications Office continues to work with and support the Communications Committee in furthering content updates to make the site more robust and informative for a lay audience. Additionally, the Communications staff is in contact with our web-services provider about adding new features to the site.

Life Lines Blog

APS blogger Dr. Dolittle continues to write four to six monthly posts about comparative physiology research on the Life Lines blog. Dr. Dolittle also serves as an official APS EB meeting blogger.

Communications Symposia at EB

The Communications Committee hosted a workshop titled "Communicating with the Media," a 2-hour plenary session on media training, as the EB 2015 Communications symposium. During the interactive workshop, presenters Evonne Kaplan-Liss and Graham Chedd of the Alan Alda Center for Communicating Science discussed how to clearly and concisely share scientific research with reporters, the lay public, and public information officers. Committee Chair Barb Goodman moderated the symposium, which was held on March 28, 2015.

The 2016 symposium will be titled "Setting the Record Straight for Science in the Media: How to Write to Local and National News Outlets." The session will focus on how to write op-eds/letters to the editor (LTE)/responses to LTEs, how to pitch an article to local/national news outlets, and how newspapers decide which articles to run. The Committee has secured Bill Yates (University of Pittsburgh) and Mario Aguilera (Interim Director of Communications at Scripps). We are working on getting a speaker from a San Diego-area news outlet editorial department to participate as well.

Council accepted the report of the Communications Committee.

Conference Committee



Michael Brands, Chair

The Committee held their annual meeting in Bethesda on October 17, 2014. The Committee discussed the 2014 conferences, which included the *APS Institute on Teaching and Learning*, June 23-27, 2014 in Bar Harbor, ME and *Intersociety Meeting: Comparative Approaches to Grand Challenges in Physiology*, October 5-8, 2014 in San Diego, CA. The table below provides the registration and abstract statics for the 2014 conferences.

	Institute on Teaching and Learning	Intersociety Meeting: Comparative Approaches to Grand Challenges in Physiology		
Abstract Submissions	29	283		
Registration	102	412		

The Committee approved three conferences for 2015:

14th International Conference on Endothelin: Pathophysiology and Therapeutics, September 2-5, 2015, Savannah, GA

Physiological Bioenergetics: From Bench to Bedside, September 9-12, 2015, Tampa, FL

Cardiovascular, Renal and Metabolic Diseases: Physiology and Gender, November 17-20, 2015, Annapolis, MD

The Committee approved three conferences for 2016:

Institute on Teaching and Learning Workshop, June 19-24, Madison, WI

Inflammation, Immunity and Cardiovascular Disease, August 24-27, Westminster, CO

Integrative Biology of Exercise VII, date and location to be determined \bullet

Distinguished Physiologists Committee



Margaret Anderson, Chair

The Distinguished Physiologists Committee consists of 11 members. One of the primary duties of each Committee member is to "develop and maintain liaison with emeritus members and members about to retire." This liaison is accomplished by submitting, on behalf of the Society, a personal 70th, 80th, 90th, or 100th birthday greeting. Each greeting includes an invita-

tion for the senior recipient to inform APS about his or her current activities, interests, and whereabouts, and

requests "words of wisdom" for younger colleagues. The historical and philosophical commentaries evoked by this invitation provide the material subsequently published in "Senior Physiologist's News" in each issue of *The Physiologist*. By the end of 2014, the Senior Physiologist Committee members sent birthday wishes to 121 members reaching age 70, 61 members reaching age 80, 62 members reaching age 90, and 1 member reaching the age of 100! Eight response letters were received and published in *The Physiologist*.

Another responsibility of the Senior Physiologists Committee is to review applications and recommend to Council the annual awardees of the \$500 G. Edgar Folk, Jr., Senior Physiologists Award. This award is designed to support the scientific activities of a senior member. In 2014, we received and awarded one application for the April deadline: Kenneth Dormer of Liberty University College of Osteopathic Medicine. In December, we received and awarded four applications: John Bissonnette, Oregon Health and Science University; Eldon Braun, University of Arizona; Alan Hofmann, University of California, San Diego; and Wiltz Wagner, Jr., University of South Alabama School of Medicine.

Council accepted the report of the Distinguished Physiologists Committee. ●

Education Committee



J. Michael Wyss, Chair

ADInstruments Macknight Progressive Educator Award

The Education Committee received four applications for 2015 and unanimously recommended APS member Trevor Day of Mount Royal University, Calgary, Canada, as the 2015 awardee. His application included a description of a building and utilizing an integrated tilt table-lower

body negative pressure apparatus for use in undergraduate laboratory projects. This apparatus will be integrated in the undergraduate curriculum through formal courses with laboratory projects, independent project courses, and summer research projects with paid and volunteer students.

EB Refresher Course

We are excited about the success of the 2015 Refresher Course "It's All in Your Head – A Refresher Course on the Brain and Systems Control." The course was organized by Catharine Clark and David Rodenbaugh. Consistent with previous years, the sessions were very well attended (~300 attendees). The audiences rating on the perceived usefulness of each speaker's presentation indicated that the session excellently met the audience's expectations.

Professional Skills Courses

The Education Office again offered the live Writing and Reviewing for Scientific Journals course and the new Professional Skills Course on Professional Integrity/ Publication Ethics. APS offers a number of online courses each year, and the number of students taking the courses is increasing as their availability and quality becomes more known. Our best advertisement is a recommendation by a previous student and/or his/her research advisor. A total of 76 individuals took online and face-to-face PST courses this year.

Medical Physiology Course Directors

Last year, a new version of the Medical Physiology Course Directors website was launched that includes secure access for course directors only. This enhancement allows directors to share assessment resources such as case studies and test items securely. Announcement of the new site and a request for new materials to post has been sent out on the Medical Physiology Course Directors listserv. In addition, the LifeSciTRC has added private bulletin boards, which will allow the group to have "members only" online discussion and resource sharing.

Association of Professional Physiology Education Leaders (APPEL)

APPEL was originally developed by the Education Committee in partnership with the Medical Physiology Course Directors to provide excellent training in new methods for physiology education. Following the Committee's initial activities and survey of APS members who were involved in professional school education, Council agreed with the Committee that the best model to for an APPEL meeting would be to integrate it into the Teaching Section's Institute for Teaching and Learning (ITL). We have worked with the Teaching Section on planning this meeting for June 2016 in Madison, Wisconsin. The model is to have halfdays devoted to breakout sessions for undergraduate and professional school education along with plenary sessions of interest to all participants. The ITL planning committee is also organizing a full-day ancillary workshop on ultrasound in medical education led by USC Dean of Medicine Richard Hoppmann, an early adopter of this teaching method. The committee has identified APS/AAA members experienced in ultrasound as workshop facilitators and is negotiating with General Electric to loan the ultrasound units. The Committee will continue to work with the Teaching Section to develop the full plan for the ITL and workshop. Barbara Goodman, University of South Dakota Sanford School of Medicine, is the point person for the organization of these events.

Physiology Graduate Program Directors Meeting

The 2015 meeting was held on July 10-12, 2015 at the Vontz Center for Molecular Studies at the University of Cincinnati. The meeting was planned in close cooperation between APS and the American Society for Pharmacology and Experimental Therapeutics (ASPET). The Committee extends special thanks to Chip Montrose for his strong leadership in this effort. The APS Education Office worked with the University of Cincinnati APS members to build the meeting website on the APS website. The program focused on two major areas: enhancing the professional pipeline and fitting training to emerging needs.

Human Anatomy and Physiology Society (HAPS) Collaboration

The 2015 HAPS Conference was held May 23-25 in San Antonio, TX with 485 attendees from across the U.S., Canada, and other countries. APS President Patricia Molina, Louisiana State University Health Sciences Center, gave a presentation entitled "Preclinical and Translational Studies Dissecting Chronic Alcohol Modulation of HIV Disease." Molina's presentation was the only keynote speaker address this year to focus on science research and was very well received. Many positive comments were given about the presentation. During the HAPS business meeting, APS was thanked for its continuous support of the HAPS annual conference.

National Association of Biology Teachers (NABT) Professional Development Conference

The 2014 NABT Professional Development Conference was held Nov. 12-15 in Cleveland, OH. APS member Merry

Lindsey, University of Mississippi, gave the presentation "Cardiac Wound Healing after a Heart Attack." Her keynote address was very well attended, with good interaction between Lindsey and the attendees during the question-and-answer period that followed. "Ideas for Using Next Generation Science in Your Classroom," a workshop developed by the APS Education Office to help teachers focus on student-centered activities, gave teachers a chance to try four hands-on labs from the LifeSciTRC (*www.lifescitrc.org*). The APS booth had a steady stream of traffic. The 2015 conference will be in Providence, RI in mid-November. Donald Jackson, Brown University, will serve as the APS keynote speaker.

Life Science Teaching Resource Community (LifeSciTRC)

In 2014, the LifeSciTRC added 414 new resources and 42 new collections. The LifeSciTRC currently contains more than 7,100 peer-reviewed teaching resources and 250 collections. Resources and collections are submitted by nine partnering societies as well as individual educators and are peer reviewed for scientific accuracy and the appropriate use of humans and/or animals in research. In 2014, 1,638 individuals registered to use the LifeSciTRC, bringing the total number of registered users to 8,243. However, registration is not required to view and download materials from the LifeSciTRC, and in 2014 there were 801,981 visits to the LifeSciTRC.

Physiology Education Community of Practice (PECOP) Research Collaboration Network

A PECOP community has been built in the LifeSciTRC to support the activities proposed in the incubator grant (*www.LifeSciTRC.org/PECOP*) and includes a blog and discussion forums. PECOP Fellows and Thought Leaders have been posting bi-monthly blogs on various topics since November 2014. Blog topics have included incorporating inquiry-based labs, using concept maps in an undergraduate exercise physiology course, and implementing oral exams for undergraduate physiology majors. All those who teach physiology at any educational level are invited to join in the PECOP community activities and discussions.

David Bruce Awards

In 2015, 87 applications were received, and 30 Undergraduate Abstract Awardees were selected to present at the Bruce Award competition. From these awardees, a subcommittee organized by Committee member Andrew Roberts, University of Louisville Medical School, selected 14 Undergraduate Research Awardees. In addition to support from the APS, the David S. Bruce Award program has received generous contributions from the Association of Chairs of Departments of Physiology and individual APS members Barbara and John Horowitz (University of California, Davis), Ida J. Llewellyn-Smith (Flinders University, Australia), Thomas and Beth Pressley (Texas Tech University Health Sciences Center), and Mike and Beth Wyss (University of Alabama, Birmingham). This support is gratefully acknowledged.

Experimental Biology Undergraduate Orientation and Poster Session

At EB 2015, approximately 200 APS members came to see 122 undergraduate physiology posters and to talk with the students. This was a large group of students and represents a 36% increase since 2011. This year, 16 institutions and departments promoted their graduate programs to the undergraduate students at the session, providing \$4,000 to help cover the session costs. Students and departments came 30 minutes early to allow uninterrupted time for the departmental representatives to discuss their graduate opportunities with the students. In addition, the APS Membership Office had a table to promote membership to the students.

As the number of students grows, the probability increases that some students may not be visited by any APS members or other EB attendees. To better increase the interaction of all poster presenters with APS faculty and trainees, the committee printed out three sets of numbers from and staff and committee members distributed two or three numbers to each APS member as they arrived. Each member was asked to stop by the numbered posters. Members were very willing to participate. This increased the likelihood that all students had visitors, as several members reported back that they couldn't get to their assigned students because of the great number of member attendees visiting the posters.

APS Frontiers in Physiology Professional Development Program for Teachers

From a pool of 19 applicants, the Education Committee selected 13 teacher fellows (68% award rate) to participate in the Summer Research program, working with APS members in the lab throughout the summer. These awardees completed their fellowship by participating in EB 2015 in Boston, MA. For 2014-2015, the Education Committee selected eight teacher fellows to participate in this program. These awardees worked in the lab in summer 2015 and will complete their fellowship by participating in EB 2016 in San Diego. With support from the new NIH-SEPA award, an additional group of teachers are completing a 10-month online course, the Six Star Science Online Teacher (OT) Professional Development program. This program is designed for middle and high school science teachers. Over the course of 1 year, participants explore, apply, and reflect on Six Star Science, a research-based framework for supporting excellence in science education. OTs also engage in online discussions, design and implement experiments, and utilize tools and strategies to enhance student-centered learning by effectively transforming lessons.

Physiology Understanding Week

In 2014, more than 14,000 students were engaged in physiology exploration at 86 event sites across the nation and Puerto Rico. This effort involved 65 APS member Lead Coordinators and a total of 599 scientists presenting and partnering with 304 classroom teachers and educators. The program exceeded its 2014 goal with outreach to 14,152 students. Distribution by grades included nearly 26% in high school classrooms, 53% in primary and elementary classrooms, and 21% in middle school classrooms. The number of physiologists (599), teachers (304), and event sites (86) all exceeded projected goals. The Committee is particularly excited about the large increase in the participation of physiologists in PhUn Week events. The Committee is also very excited that at EB 2016 we will celebrate PhUn week's 10th anniversary.

International Science and Engineering Fair (ISEF)

APS awards were again presented to high school students at the 66th ISEF, which provided an opportunity for the 2015 APS Award judges to meet some of the brightest young minds in the world. The Intel ISEF was held this year in Pittsburgh, PA on May 12-17, 2015. More than 1,700 students presented their own independent research and competed for over \$5 million in scholarships and cash prizes. For the 23rd year, the APS presented Special Awards for the most outstanding projects in the physiological sciences in the form of cash prizes, certificates, t-shirts, and 1-year subscriptions to APS publications.

Grade 4-7 Clever Catch Balls

The original APS Clever Catch Ball is a tool for teaching physiology, primarily in grades 10-12 and undergraduate level. Typically, students toss the ball to each other, answering the question underneath or closest to their left thumb. We have now developed and distributed a new catch ball for use in primary/middle school classrooms (4th to 7th grades), and it has proven especially useful during PhUn Week activities. The balls have been a great success as documented by their rapid sales.

Council accepted the report of the Education Committee.

Finance Committee



During the 2015 summer meeting of Council, the Finance Committee reported that the Society's financial condition remains relatively strong through sound management and investment practices.

Meredith Hay, Chair

APS Budget

The Finance Committee met in March to review 2014 financial activity and to review the

Society's 2015 budget. 2014 revenue was \$19.4 million, which included \$1.6 million in support from reserves, and expenses over the same period were \$18.1 million, resulting in a surplus for the year of \$1.3 million.



The 2015 operating budget has revenue of \$19.7 million, expenses of \$19.5 million, and a surplus of \$234,000. The charts below represent the sources of revenue and the allocation of expenses, respectively, in the 2015 operating budget.



Investments

The Society's long-term invested funds at December 31, 2014 totaled \$58.8 million. Of those invested funds, approximately \$38.2 million is set aside as reserves, a portion of which is used to support the annual operating budget. The remaining \$20.6 million is used to support the Society's numerous award programs and sections. It should be noted that, in 2014, Council authorized moving \$9.95 million from reserves to the APS Endowment Fund to support award programs previously included in the operating budget. The chart below reflects the overall growth of the Society's investments from 2010 to 2014 and the allocation between reserves and the award programs, including the \$9.95 million transfer in 2014 from reserves to the award programs.



Development Office

The creation of the new development program recognizes the need and desire to cultivate additional philanthropic support for the numerous programs and awards offered by the Society. The newly added Development team, John Van Ness and Megan Mitzelfelt, is working with the Society's leadership and staff to build relationships with individuals, corporations, and private foundations so that gifts and grants can be solicited for the Society's current endeavors and, ultimately, build the Society's endowed funds. Thus far, the Development Office has revamped the donation portion of the APS website, which includes a section dedicated to planned giving opportunities.

The Development Office produced the Society's first *APS Annual Report,* which provides a comprehensive review of the Society's 2014 accomplishments and a listing of its financial supporters. In addition, a new leadership annual giving program has been created, The Founder's Circle, to encourage and recognize members who contribute \$250 or more annually to the APS. Soon, a legacy society will be announced, which

will recognize donors who have made formal plans to include the APS in their wills. Also, major gifts and grants from corporations and foundations will be pursued; thus a list of giving opportunities for such donors has been added to the donation webpages. Finally, the Development staff has also begun advising sections on their sponsorship efforts.

Information Technology

The IT Office has numerous projects underway to improve the efficiency and effectiveness of the Society's information systems. IT recently implemented Higher Logic's online community platform to enhance information sharing and collaboration among groups of members, staff, and other customers by allowing users to create secure forums. IT is in the process of upgrading the Society's enterprise-wide association management software, Personify. The upgraded version includes, among other things, significant improvements to the e-business or online purchasing function. A number of projects are underway or in the evaluation stage for improving the Society's capabilities for disaster recovery, business continuity, and office anywhere capabilities. The projects include replacing staff desktop computers to laptop configurations, implementing various Microsoft Office 365 services (e.g., Microsoft-hosted Exchange, Skype for Business, OneDrive for Business), and evaluating having our server infrastructure hosted at a colocation site.

2014 Audit

The Committee reported that the Society's 2014 financial statements were audited in accordance with general accepted auditing standards. The Society's audit firm, Rogers & Company, rendered an unqualified opinion that the Society's statements presented fairly, in all material respects, the financial position of the Society at December 31, 2014 and 2013. What follows are facsimiles of the Society's audited financial statements.

Council accepted the report of the Finance Committee.

THEPHYSIOLOGIST

The American Physiological Society

Statements of Financial Position December 31, 2014 and 2013

Assets	2014	2013
Cash and cash equivalents	\$ 769,723	\$ 824,168
Investments	61,774,706	59,377,450
Certificates of deposit	412,886	394,480
Accounts receivable, net	1,028,127	945,261
Pledges receivable, net	323,325	711,893
Accrued interest receivable	128,326	113,948
Advances to section editors	92,162	147,681
Prepaid expenses	273,068	191,482
Inventory	56,630	44,168
Property and equipment, net	1,551,514	1,539,379
Total assets	\$ 66,410,467	\$ 64,289,910
Liabilities and Net Assets		
Liabilities		
Accounts payable and accrued expenses	\$ 1,479,656	\$ 1,976,269
Deferred subscriptions	5,423,621	6,004,937
Deferred dues and other	580,638	469,628
Capital lease obligations	140,062	72,581
Total liabilities	7,623,977	8,523,415
Net Assets		
Unrestricted	57,172,250	54,310,412
Temporarily restricted	1,098,931	973,749
Permanently restricted	515,309	482,334
Total net assets	58,786,490	55,766,495
Total liabilities and net assets	\$ 66,410,467	\$ 64,289,910

The American Physiological Society

Statement of Activities For the Year Ended December 31, 2014

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total	
Operating Revenue					
Subscriptions	\$ 11,124,489	\$-	\$ -	\$ 11,124,489	
Author charges	3,128,664	-	-	3,128,664	
Membership dues	1,106,540	-	-	1,106,540	
Grants and contracts	691,274	-	-	691,274	
Conferences and meetings	915,452	-	-	915,452	
Contributions	281,836	217,655	32,975	532,466	
Advertising	185,772	-	-	185,772	
Other income	345,131	-	-	345,131	
Released from restrictions	113,439	(113,439)			
Total operating revenue	17,892,597	104,216	32,975	18,029,788	
Operating Expenses					
Publications	11,488,070	-	-	11,488,070	
Society general	3,112,193	-	-	3,112,193	
Society programs	1,109,613	-	-	1,109,613	
Education	1,998,913	-	-	1,998,913	
Marketing	782,691			782,691	
Total operating expenses	18,491,480			18,491,480	
Operating Change in Net Assets	(598,883)	104,216	32,975	(461,692)	
Investment Income					
Net realized gain on investments	3,736,620	-	-	3,736,620	
Net unrealized loss on investments	(649,613)	-	-	(649,613)	
Interest and dividends	1,057,382	20,966	-	1,078,348	
Investment management fees	(683,668)			(683,668)	
Total investment income	3,460,721	20,966		3,481,687	
Change in Net Assets	2,861,838	125,182	32,975	3,019,995	
Net Assets, beginning of year	54,310,412	973,749	482,334	55,766,495	
Net Assets, end of year	\$ 57,172,250	\$ 1,098,931	\$ 515,309	\$ 58,786,490	

International Physiology Committee



Michael A. Hill, Chair

APS members represent 88 countries from 6 continents with over a quarter of the Society's membership being international. International members represent a large and important constituency within the Society and one that is growing – over 30% of new members are internationals. At recent Experimental Biology meetings, international registrants comprised over

20% of the total registration (some two-thirds of which are APS members). These figures clearly indicate the international nature of APS.

The role of the International Physiology Committee (IPC) is to assist APS by identifying and implementing ways in which APS can best serve its international members, achieve globally its goals of fostering education, scientific research, and dissemination of information in the physiological sciences, and raise its global stature.

The IPC assists APS in the review of international awards programs. The International Early Career Physiologist (IECP) travel awards program provides support for students, trainees, and junior faculty working outside the U.S. to attend Experimental Biology (EB). The IPC reviewed 35 applications, and APS made 12 awards of \$1,000 each for EB2015 (awardees are named on the APS website). Successful applicants represented diverse regions including South and North America, South Africa, Europe, and Asia/Pacific.

As outlined in the previous year's report, the IPC reviewed applications for APS travel awards to attend the Pan American Congress of Physiological Sciences ("Physiology Without Borders"), which was held at Iguassu Falls, Brazil, August 2014.

The International Opportunity Program (IOP; formerly the Latin-America Initiative) aims to strengthen ties between APS and international societies on a global level, with a particular emphasis on underrepresented regions. For 2015, the program has provided support for four applications, each receiving \$7,500:

Awardee	Institution
Marlou Dirks	Maastricht University
James Garnett	St. George's University of London
Alexis Gonzalez	Pontifica Universidad Catolica de Valparaiso
Sara Jones	University of Melbourne
Kun-Ze-Lee	National Sun Yat-sen University
Ana Paula de Oliveira Leite	Universidade Federal de Sao Paulo
Rudo Mapanga	Stellenbosch University
Eliza Prodel	Fluminense University
Ayesha Saleem	McMaster University (declined on acceptance of alternate award)
Angela Scott	McMaster University
Graham Scott	McMaster University
Louise See Hoe	Griffith University
Dao Xiang	Naval Medical Research Institute

IECP Awardees 2015

- **Cristina Arranz**, Universidad De Beunos Aires. Organization of a satellite symposium ("Translation of Basic and Clinical Medicine: Novel Targets for Hypertension") in conjunction with the Argentine Society of Hypertension.
- Michael Levitzky. Organization of a training workshop ("Basics in Physiological Research") at the Universidad Francisco Marroquin, Guatemala.
- Frank Mojiminiyi. Organization of a 4-day workshop ("Paradigms in Physiology Teaching and Research") running concurrently with the Annual Scientific Conference of the Physiology Society of Nigeria.
- Lucia Prieto Godino. Organization of a course ("Insect Neuroscience and Drosophilia Neurogenetics") promoting high-quality research and teaching in Africa (Dar es Salaam, Tanzania).

2014 IOP supported initiatives (representing programs undertaken in South America, Africa, and Asia) were undertaken, and outcome reports were submitted to APS.

Application for IOP support for 2016 was advertised with a deadline for submission of June 30, 2015. Only two submissions have been received to date, resulting in the deadline being extended until July 10.

Thanks are extended to Esther Samuels, APS, for her excellent administrative support. Thanks are also given to the members of the International Committee for review and ranking of the various submissions.

Council accepted the report of the International Physiology Committee. ●

How can APS better serve its international members? How can APS serve in outreach to the international physiology community? If you have suggestions, ideas, or concerns, please contact Michael Hill, Chair of the APS International Physiology Committee, at *hillmi@missouri.edu*.

The John F. Perkins Jr. Memorial Award Committee



Paul Davenport, Chair

The John F. Perkins Jr. Memorial Award for International Physiologists promotes cultural exchange and scientific collaborations by providing supplementary aid to families of foreign scientists working for a minimum of 3 months in the U.S. In this way, young scientists are able to bring spouse and children and thus make full use of the cultural exchange as well as the

scientific benefits associated with an international collaboration. This award is intended to support the spouse's and children's visit to the U.S. for postdoctoral fellows and junior faculty from overseas. Application for

the Perkins Award must be made jointly by the host, who must be an APS member, and the visiting scientist. The recipient receives funds generally not exceeding \$5,000.

Applications for the Award are accepted in the spring and fall, with application deadlines of April 15 and October 15. For the October 2014 deadline, the Committee received one application and did not fund the application. For the April 2015 deadline, the Committee did not receive any applications. The committee revised the description of the award to clarify that the award is intended to bring over a family consisting of a spouse and children.

Council accepted the report of the The John F. Perkins Jr. Memorial Award for International Physiologists Committee. ●

Joint Program Committee



Robert Hester, Chair

Experimental Biology 2015

The 2015 EB Meeting was held in Boston, MA from March 28 to April 1. Participating societies were APS, AAA (anatomy), ASBMB (biochemistry), ASIP (pathology), ASN (nutrition), and ASPET (pharmacology). The APS hosted five guest societies: The Microcirculatory Society (MCS), the Biomedical Engineering Society (BMES),

American Federation for Medical Research (AFMR), the Society for Experimental Biology and Medicine (SEBM), and The Physiology Society (UK). Overall paid member attendance, all societies, at EB was 10,299, with another 4,022 nonmember attendees. There was an increase of ~400 scientific registrants compared with San Diego, EB14, and ~500 more nonmembers. The scientific registration was decreased by ~1,000 relative to 2013 in Boston. There has been a slow decrease in number of exhibitor booths and companies over the last 4 years.

The meeting opened with several unique sessions on Saturday, March 28, including the traditional *Refresher Course* this year focusing on "It's All in Your Head – A Refresher Course on the Brain and Systems control," which attracted an average attendance of 350 people. APS sponsored two unopposed Techniques and Technology in Physiology Workshops on Saturday, March 28, entitled *Big Data Workshop*; and *Proteomics for the Physiologist*. The workshops attracted an average audience of 100 individuals. In addition, Saturday featured *Physiology in Perspectives – The Walter B. Cannon Memorial Award Lecture* presented by Masashi Yanagisawa from the University of Tsukuba, Japan. The lecture was followed by an opening reception free to all physiology registrants.

APS also held the *Henry Pickering Bowditch Memorial Award Lecture* featuring Babette LaMarca of University of Mississippi Medical Center and 12 section-sponsored Distinguished Lectures. APS also sponsored four Cross-Sectional Symposia:

- "Omics" and Epithelial Systems Physiology
- Contributors to the Slowed Aging Phenotype: Exercise and other Common Mediators
- Neurohormonal Mechanisms in Blood Pressure Control
- The Host-microbe Interface and Control of Barrier Function: The Path from Pathology to Therapy

The APS President's Symposium Series was organized by David Pollack around the theme *Physiology – Answers to Big Questions* included three symposia and one lecture:

- The Future of Diabetes Research
- The Future of Obesity Research
- The Future of Hypertension Research
- Nobel Prize in Physiology or Medicine Lecture presented by Robert Lefkowitz, Duke University Medical Center

The Nobel lecture was followed by a ticketed closing banquet open to physiologist registrants for a nominal fee of \$15 in advance/\$25 on-site.

A total of 8,159 abstracts, 7,384 regular and 775 latebreaking, were programmed by the six EB15 sponsoring societies. Table 1 provides a breakdown of on-time and late-breaking abstracts programmed over the past 5 years. Total abstracts submitted for EB 2015 increased by slightly more than 3% over EB 2014, which received a total of 7,907 abstracts, but less than EB13 with total of 8,792 abstracts.

Table 1. On-time and late-breaking abstracts

	2015 (Boston)	2014 (San Diego)	2013 (Boston)	2012 (San Diego)	2011 (D.C.)	2010 (Anaheim)
On-Time Submissions						
APS	2,385	2,313	2,662	2,635	2,522	2,230
ASBMB	1,420	1,205	1,309	1,207	1,326	1,098
ASPET	672	619	791	591	541	498
ASIP	294	358	435	362	381	378
ASN	1,813	1,722	1,941	1,661	1,607	1,336
AAA	494	494	495	396	388	304
EB (teaching)	45	67	64	46	53	39
ASBMB (Invited	189	173	153	162	149	145
AAA (Invited)	72	91	85	117	113	110
Total	7,384	7,042	7,935	7,177	7,080	6,138
Late-Breaking Submissions						
APS	220	215	255	240	217	186
ASBMB	182	217	187	204	141	199
ASPET	85	95	139	91	81	79
ASIP	49	68	71	49	41	54
ASN	187	186	188	186	138	164
AAA	52	84	55	70	31	35
Total	775	865	895	840	649	717
GRAND TOTAL Submited Abstracts	8,159	7,907	8,830	8,017	7,729	6,855

Table 2. Registration Breakdown EB 14 and EB 15

	EB 15	i	EB 14	ļ
Registration Type	Total	Percent	Total	Percent
Member	5,154	36%	4,971	37%
Retired Member	120	1%	133	1%
Nonmember	1,071	7%	1,043	8%
Postdoc Member	658	5%	548	4%
Postdoc Nonmember	285	2%	302	2%
Student Member	1,782	12%	1,628	12%
Student Nonmember	1,229	9%	1,189	9%
Total Paid Scientific	10,299	72%	9,814	73%
High School Student	477	3%	354	3%
High School Teacher	171	1%	159	1%
Undergraduate	1,861	13%	1,533	11%
Total Paid Undergraduate	2,509	17%	2,046	15%
Exhibitors	1,121	8%	1,156	9%
Guest of Exhibitors	277	2%	277	2%
Guest of Registrant	68	>1%	44	>1%
Press/Blogger	47	>1%	39	>1%
Total Ancillary Registration	1,513	11%	1,516	11%
Grand Total Registration	14,321		13,376	

Table 2 provides the breakdown of total attendance at EB 2015 and 2014. EB 2015 represented 485 more scientific registrants than EB 2014 and 945 more overall registrants. Undergraduate registrants represented the largest increased category from 11% of the total in 2014 to 13% in 2015.

APS programmed 386 sessions in total: 238 poster sessions, 67 symposia, 47 featured topics, 19 lectures, 2 workshops, 1 refresher course, 2 awards sessions, and 10 special sessions. The programming continued to be organized using the *Clustering of Sectional Programs* for the fourth year. Clustering will be discontinued for EB 2016.

Experimental Biology 2016

The JPC met at EB 2015 on Saturday, March 28th to begin organizing EB 2016 to be held Saturday, April

2nd through Wednesday April 6th in San Diego. The JPC will meet again on June 29-30, 2015 in Crystal City, VA to schedule rooms by day and time for the platform sessions, and to minimize scientific overlap. As has occurred for the past 3 years, programming of posters from received abstracts will be performed electronically in December.

Total number of paid registrants for EB 2016 has been projected to be 9,700, an increase over EB15. The early registration member rate has been set at \$400, an increase of 2.5% over EB 2015 rate of \$390.

The Call for Abstracts and online abstract submission site will be available by September 2015. The abstract deadline will be November 5, 2015. EB 2016 will again provide for a late-breaking abstract deadline of January 28, 2016. The JPC received 26 Integrative Physiology symposium proposals for EB 2016, of which the following have been selected:

- Role of Epithelium in Innate Defence: More than a Barrier
- Mechanobiology of Fibrosis across Organ Systems
- Early Life Stress and Sex-Specific Manifestations of Cardio-Respiratory Dysfunction: Insight from Microglial Cells
- Reprogrammed Cells as Models for Disease

The Integrative Physiology Symposium is the replacement for the Cross-Sectional Symposium. Each of the selected symposia was vetted by the members of the JPC, and some changes were suggested. This process has worked well but required more e-mail communication between JPC members.

In addition, two *Techniques and Technology* workshops are scheduled on the first day of EB 2016: *Microscopy* and *Novel Methods to Perturb Genes for Physiological Examination.*

The President's Symposium Series, organized by Patricia Molina, entitled *Physiological Mechanisms Responsive to Behavioral and Environmental Challenges* will feature a series of three symposia and a Nobel Lecture:

- Underlying Organ Injury in Alcohol Abuse
- Dietary Influences on Physiological Control Mechanisms: How Much, When and What
- Physiological Adaptation to Behavioral, Environmental, and Chronological Stress
- Nobel Prize Lecture featuring Roger Tsien, Howard Hughes Medical Institute, UCSD

The Cannon Lecture will be given by Amira Klip. The Bowditch Lecture will be given by Sean Stocker.

The JPC met in Arlington, Virginia June 29-30. We had 29 Section and Interest Group JPC Reps attend the meeting. We developed 11 tracks for the EB 2016 meeting and then programmed the scientific sessions. Several issues were also discussed. The development of the Integrative Symposia needed to be adjusted to

make sure that JPC had proposals defined by the EB meeting. This will allow time for organizers to verify participation by the proposed speakers. The proposals for the EB17 Integrative Physiology Symposia will be submitted online through the Awards Submission site, thus allowing all JPC members to review and comment on. The deadline for the 2017 IPS proposals is November 5, 2015, thus allowing more time for JPC members to provide input to session organizers if revisions are needed. JPC representatives were informed that speakers and chairs were not allowed to speak in or chair multiple sessions. JPC reps will contact session and FT chairs about correcting this issue. The online submission program for symposia and featured topics has been developed but will have some changes implemented to improve the ease of use. For EB 2017, all symposia and featured topics will be submitted online. This will allow for sections to easily review all submissions to determine possible scientific overlap. The program will allow for tracking speakers speaking multiple years in a row. JPC members discussed the issue with posters not being presented on Wednesday. We will continue to track this to see whether there is an increase in the number of posters not being presented on Wednesday and will bring forth recommendations to Council. Several APS Sections and Interest Groups had added "nutrition" to abstract categories to attract other members of EB to APS sections.

Translational Physiology Interest Group will again be selecting translational abstracts for an unfunded session where investigators will provide 5-minute presentations on translational physiology. The meeting will also feature sessions organized by the APS Publications, Careers in Physiology, Public Affairs, Women in Physiology, Trainee Advisory, Physiologists in Industry, and Education Committees. The Trainee Advisory Committee will organize an unfunded trainee featured topic entitled *Sex Differences in Health and Disease.*

Council accepted the report of the Joint Program Committee. ●

Membership Committee



Robert Brock, Chair

Overview of Committee Activities

The efforts put forth by the Committee over the previous year have centered on the development and implementation of the new Fellow of the APS (FAPS) Program. Not only does this Program recognize the valued contributions and accomplishments of more established members, but it will also play a key role in

actively engaging these members within the leadership of the Society. With this, we have amended the Committee charge. We have also asked Council to endorse changing the name and composition of the Committee to better represent its additional role in the administration of the FAPS Program. Furthermore, the Committee has advocated for a promotional campaign to better communicate the benefits of APS membership. These print and social media communications will be a positive step toward more effectively recruiting and retaining target membership subgroups; examples including narratives in Section Newsletters and *The Physiologist*, individual letters, etc.

Membership Statistics

The Chair reviewed the spring membership status report. The total number of members is 10,946 [948 (750 Regular) members were dropped on April 1, 2015 as a result of unpaid dues]. There was a net gain of 325 Regular, 205 Graduate Student, and 43 Undergraduate Student members since the fall 2014 status report. The current retention rate is 89%.

Council accepted the report of the Membership Committee. ●

Physiologists in Industry Committee



Eugene Shek, Chair

EB2014 PIC Symposium

The 2015 symposium entitled "Targeting Gut Microbiome in Human Diseases and as Novel Therapeutics" was organized by Carol Moreno Quinn and chaired by Shaila Basavappa and Suttira Intrapad (our 2014 PIC Novel Disease Award Postdoctoral recipient). Feedback from PIC attendees as well as others indicates that the topic was well received.

EB2015 Novel Disease Awards

The PIC Novel Disease Model Award is sponsored by Novo Nordisk Research Centre China. Two awards are granted each year to a graduate student (\$500) and a postdoctoral fellow (\$800) who submit the best abstracts at the EB meeting that describe a novel disease model (either in vivo or in vitro). Applicants do not have to be APS members, and there are no restrictions on how the award is spent. Moreover, awardees can only receive the Novel Disease Award once as a postdoctoral fellow and once as a predoctoral student. Our 2015 predoctoral and postdostoral awardees are, respectively, Casey Y. Carmichael from Boston University School of Medicine and Denise C. Cornelius from University of Mississippi Medical Center. Awardees are recognized at the APS Business Meeting.

Physiologists in Industry Committee Mixer

The 15th Annual Physiologists in Industry Committee Mixer was held on Sunday, March 29, in the Revere Room of the Westin Boston Waterfront. The Industry Mixer is traditionally a great opportunity for our students, postdoctoral fellows, and academic colleagues to network with APS industry members. It is designed
to attract trainees and engage them in discussion about career, research, and opportunities in industry positions.

Annual Physiologists in Industry Committee Meeting

The annual PIC committee meeting was scheduled on Sunday, March 29, in the Revere Room, Westin Boston Waterfront. This is the committee's annual opportunity to have a face-to-face meeting to discuss committee business and new initiatives. Please contact your PIC section representative if you would like to get involved or have new ideas or matters to be brought to the attention of the PIC committee.

EB2016 PIC Symposium

The Physiologists in Industry Committee is sponsoring an exciting Symposium at EB2016, San Diego, entitled "Metabolic Syndrome and the Pathway of Drug Development: From Bench to Bedside" on Sunday, April 3, 10:30-12:30 PM at San Diego Convention Center. This symposium focuses on the known risk factors involved in the metabolic syndrome. It will also cover basic research and various steps (ranging from early drug discovery, applied preclinical, development, safety, and the clinical and regulatory hurdles) that are required to get a drug from conception to FDA approval. This symposium will provide a great opportunity for interaction and knowledge exchange between our academia and industry colleagues. This section will be chaired by Matthew R. Zahner and co-chaired by Denise C. Cornelius, who is our 2015 PIC Novel Disease Model Award Postdoctoral recipient.

Council accepted the report of the Physiologist in Industry Committee. ●

Porter Physiology Development and Minority Affairs Committee



Margarita Curras-Collazo, Chair

Clifford Barger Underrepresented Minority (URM) Mentorship Award

Council approved the Committee's request for a new award, the A. Clifford Barger Underrepresented Minority (URM) Mentorship award. This award will recognize APS members who are outstanding mentors of URMs in the physiological sciences. The program will

begin accepting nominations in fall 2016 for its first award in 2017.

APS-sponsored Undergraduate Research Award Program

Council approved a new program, conceived as a joint proposal with COPC, which will provide up to 50 awards per year to undergraduate award winners of university poster competitions in physiology judged by APS members. APS members will be able to request an award packet starting in 2016.

Porter Physiology Development Fellowship Program

The goal of the Porter Physiology Development Program is to encourage diversity among students pursuing full-time studies toward the PhD in the physiological sciences and to encourage their participation in the APS. The program provides 1- to 2-year, full-time graduate fellowships. The program is open to underrepresented ethnic minority applicants who are citizens or permanent residents of the U.S. or its territories. Fellows are expected to be/become APS members, participate in EB, complete specific professional development activities, and participate in K-12 outreach. Since 1967, the program has provided more than 238 fellowships to 137 trainees. In 2014-2015, the program provided funding for four fellows. For 2015-2016 Fellowships, a total of 27 new and 3 renewal applications were submitted for the January 15 deadline and reviewed by the Committee. Funding allowed for a total of six 20152016 awards. The stipend paid to the Porter Fellows for 2015-2016 will again be \$28,300/year, consistent with the NIH scale. Council approved increased funding for the Porter Physiology Development Fund from \$40,000 to \$80,000/year. The Committee expresses its sincere appreciation for the continued support of the William Townsend Porter Foundation, APS member contributions, and the APS Council that makes these fellowships possible.

Porter Social Media Outreach

The committee manages a Facebook fan page, a APS Minority Physiologist listserv, and a Twitter account to promote networking among minority physiologists. The committee posts news related to professional development opportunities one to two times weekly. The group currently has 228 followers. The direct link to the page is *https://www.facebook.com/ APSMinorityPhysiologists?fref=ts*.

Minority Travel Fellowship Award Program

The Porter Committee reviewed and recommended 29 award recipients for Minority Travel Fellowships to attend EB 2015. Again this year, the Committee was pleased that eight former Porter Fellows and past Travel Fellows volunteered to be mentors for the younger Travel Fellows. Since its inception in 1987, the APS-NIDDK Minority Travel Fellowship Program has awarded 783 travel fellowships to 542 undergraduate students, graduate students, postdoctoral fellows, and faculty members at minority institutions. As in the past, the Committee held a reception for Travel Fellows, their meeting mentors, and past and current Porter and Travel Fellows. This reception builds stronger connections between minority students and the larger community of APS scientists, especially other minority scientists. The Porter reception again this year was extremely successful. The Travel Fellows Luncheon was held on Wednesday of the EB meeting. The Fellows heard from keynote speaker Malcom Jackson, University of Liverpool Institute of Ageing and Chronic Disease & MRC-Arthritis Research UK Centre for Integrated Research into Musculoskeletal Ageing (CIMA). Jackson's talk entitled "Success as a U.S. Graduate Student, Postdoctoral Fellow or Junior Faculty in Europe – What is the Head of a Department Looking for in You?" explained the UK university system, funding mechanisms, and job and career structure, and how U.S. students could transition into the UK system.

Annual Biomedical Research Conference for Minority Students (ABRCMS)

The APS exhibited at the November 2014 meeting in San Antonio, TX to promote undergraduate programs, graduate study in physiology, and the APS programs for minority students. The APS was pleased to again provide \$2,500 for cash awards for the most outstanding undergraduate presentations in physiology research. Sixteen undergraduate and one post-bac students received APS-sponsored awards for the best oral and poster presentations in the physiological sciences. Students also received a complimentary 1-year undergraduate membership to APS. Awardees were added to the APS Minority Physiologists and APS Trainee Listservs.

Society for the Advancement of Chicanos & Native Americans in Science (SACNAS)

In 2014, the theme for the SACNAS annual conference was "Creativity, Vision, & Drive: Toward Full Representation in STEM." APS exhibited at this conference, which took place October 16-18 in Los Angeles, CA. Over 3,650 attendees participated in the conference. Most attendees were undergraduates.

K-12 Minority Outreach Fellows Program

This program fosters communication between URM graduate and postdoctoral students and middle/high school URM life sciences students. Two awardees were selected for 2015-2016: Nicholas Aguirre, graduate student, University of California, Davis; and Elinette Albino, postdoctoral fellow, Ponce Health Sciences University, Puerto Rico.

"Be Counted" Campaign

The Porter Committee continues to seek the most current information about APS members including gender, race, and ethnicity to better tailor its programmatic initiatives and track successes in current ones. The Committee once again promoted this campaign at EB 2015 and other APS-sponsored conferences by providing informational and promotional materials at APS-sponsored booths. At the Committee's request, President Molina sent a brief survey to APS members with missing profile information. The Committee plans to continue the "Be Counted" campaign through 2016.

Council accepted the report of the Porter Physiology Development and Minority Affairs Committee.

Publications Committee



Curt Sigmond, Chair

Journal Statistics

Impact Factor. The 2014 Journal Impact Factors (IF) released by Thomson Reuters has APS Journals generally holding their ranking, although trending down by several tenths of percentage points. *Physiological Reviews* once again ranked no. 1 in the field of physiology, with an IF of 27.324. *AJP-Lung* IF increased to 4.080, and *AJP-Cell* increased to 3.780.

Comprehensive Physiology received its first full IF of 4.739. The cited half-lives of the journals remain significantly higher than the IF.

Accepted manuscripts. Manuscript submissions in 2014 decreased overall by 3% vs. 2013 across all original research journals and all manuscript types. (There was a 3% decrease in 2013 vs. 2012.) Submissions to *AJP-Cell* increased by 10%; to *AJP Lung* by 8%; and to *Advances* by 10% compared with 2013. Year to date (YTD) June 2015 manuscript submissions have increased by 7% compared with June 2014.

Articles and pages published. The number of regular research articles published decreased by 6% from 2,753 in 2013 to 2,568 in 2014; published invited articles decreased by 1% from 480 in 2013 to 473 in 2014. In 2014, 304 articles were published in *Physiological Reports*. The number of records accepted for AiPS decreased by 6% from 2,968 in 2013 to 2,801 in 2014. Journal pages published decreased by 5% compared with 2013. The number of published pages was 21% under the 2014 page cap limit.

Supplemental data. A total of 176 data supplements were published in 2014, 58 of which contained video files. This represents a 7% decrease in total data supplements from 2013 and a 10% increase in video files specifically. January-June 2015, 152 data supplements were published, 57 of which were video files.

Podcasts. *AJP-Heart* released 26 podcasts, and *JAPPL* released 5 podcasts in 2014, highlighting published articles. *AJP-Heart* released 13 podcasts, and *JAPPL* released 8 podcasts January-June 2015. *AJP-Cell* and *AJP Renal* have each published one podcast YTD 2015.

Time to first decision. Time to first decision averaged 21.8 days in 2014 across all of the original research journals, 1.1 days fewer compared with 2013. Of note, *AJP-Cell* time to first decision was fastest at 13 days, followed by *AJP-Heart* at 18 days. The average time to first decision, year to date June 2015, is 22 days.

Color figures. In 2014, 5,135 color figures were published in APS journals, of which 3,310 were published by APS member authors at no charge to them, so that 64% of color figures published were free to members in 2014.

Peer review system. Enhancements to the peer review system are made as requested by the EICs, and as needed by staff. These enhancements are ongoing. In 2014, there were approximately 22 enhancements developed and implemented.

New Editors in 2015

AJP-Gastrointestinal and Liver Physiology. Nigel Bunnett, Monash University, Melbourne, as of July 1, 2015, replaced P. Kay Lund, University of North Carolina at Chapel Hill School of Medicine.

Physiological Genomics. Bina Joe, The University of Toledo, as of July 1, 2015, replaced Andrew S. Greene, Medical College of Wisconsin.

Strategic Planning 2011-2015: Publications Strategic Task Force Background

Following are the five key strategic objectives from the Strategic Planning retreat held January 2011:

- Increase efforts to ensure awareness of, and advocacy for, the discipline of physiology
- Actively work to attract, meet the needs of, engage, and retain membership subgroups
- Develop strategies to strengthen the Society's publications in a changing world

- Enhance opportunities for scientific interaction and exchange
- Increase the visibility of physiology in life sciences and health sciences education

Additionally, two themes were identified that cut across all five strategic priority areas:

- Physiology as critical in translational research
- Chapters as an underutilized resource for the strategic directions

In 2013, a Task Force was appointed to develop specific directions from the key objectives related to Publications. This Task Force was charged to develop strategies to:

- 1) Increase submissions to the Society's journals.
- 2) Improve the perceived quality of the journals through IF and other measures.
- 3) Ensure that the journals continue to serve as a primary revenue source for the Society.
- 4) Develop physiology's role in translational research through our publication program.
- 5) Publish in an Open Access (OA) environment, either through a free-standing journal or by transitioning existing journals.
- *6)* Utilize our book partnership with Springer and Wiley to increase revenue for the Society.
- 7) Enhance the visibility of the Society's journals.

Updated Objectives

The initiatives that were distilled by the Publications Committee for final discussion at the March 2013 Publications Committee meeting and which were subsequently approved by Council follow.

Comprehensive Physiology

Enhance commitment to *Comprehensive Physiology* by 1) continuing it as OA for another year, 2) increasing the marketing, and 3) encouraging the various APS science educational programs to use *Comprehensive Physiology* in their curriculum to increase its visibility among young investigators.

Exert best efforts such that *Comprehensive Physiology* appears on all relevant indexing databases.

Comprehensive Physiology was openly accessible through 2013 and is freely accessible to APS members through December 2015.

Comprehensive Physiology is indexed in Scopus, included in PubMed, and indexed and abstracted in Science Citation Index Expanded (also known as SciSearch), Journal Citation Reports/Science Edition, BIOSIS Previews, and BIOSIS Reviews Reports and Meetings. The 2014 IF, released in 2015, is 4.739.

AE and Editorial Board Submissions to APS Journals

Encourage Editorial Board members to publish in APS journals.

EIC Assistants will supply a semi-annual or annual report to the EICs and AEs on the number and type of submissions from their Editorial Board members, and the EICs will include this information in their annual report to the Publications Committee.

Require editors to send an annual letter to Editorial Board members detailing how many manuscripts they have reviewed, how many they declined, and how many they submitted and published in the journal.

Strongly encourage AEs and Board to solicit work from their peers.

Encourage EICs and AEs to publish their best work in APS journals. Supply a semi-annual or annual report to the EICs on the submissions from the AEs.

Acceptance/Rejection Rates

Continue to encourage editors of journals with higher acceptance rates to bring their acceptance rates down to provide some consistency between journals. In addition to improvement in IF, this will provide a pool of potential cascade-down submissions for the new OA journal.

Reduce acceptance rate in some of the APS journals whose acceptance rate is >50%. The Publications Committee has requested that the rejection rate be brought up to 60%, where appropriate.

Journal acceptance rates are within the 50-65% range; journals with lower/higher rates have brought these closer to the average.

Publicize Our Best Work

Develop mechanisms to recognize authors of highly cited/downloaded articles to encourage them to resubmit.

Create "Manuscript of the Year Awards" for reviews and original research for each journal.

APS*select*, which selects and promotes the best articles from all APS original research journals and presents these as a virtual journal, launched January 2014. (See section following on APS*select*.)

The fungible program, which initially stated that each Journal may allocate \$500 of "fungible" office funds to a Best Paper by a Young Investigator Award, has been extended to give Editors free reign on how their office expense funds are used.

Annual Reviews Award for Scientific Reviewing was established in 2012 (see below).

Revenue

Encourage membership to make sure their institutional libraries maintain their subscriptions, acquire the complete Digital Library, and subscribe to the Legacy Collection.

This is an ongoing effort, which would benefit from revitalization.

Annual Reviews Award for Scientific Reviewing

The Annual Reviews Award for Scientific Reviewing was introduced in 2012. The Award recognizes an APS member who has written scientific reviews and has helped provide an enhanced understanding of the area of physiology reviewed. The successful candidate, chosen by the Publications Committee, is awarded \$2,000 and up to \$2,000 reimbursement toward travel to attend the annual Experimental Biology meeting to receive the monetary award and a recognition plaque.

The 2015 Award recipient is Mark T. Nelson, Department of Pharmacology at the University of Vermont Medical Center.

Publications Integrity And Policy

NSF Grant. In 2012, the Publications and the Education Departments jointly submitted a successful application to the NSF for the development of modular course materials on publication ethics. The materials are to be used in Responsible Conduct of Research courses in STEM graduate programs. Additional collaborators on the project are the Biomedical Engineering Society (BMES) and the Society of Biological Engineers (SBE). The amount of the grant is \$400,000 awarded over three years.

Project Progress

- Primary field test of modules (January 16-19, 2014)
- Comparison group testing of publication ethics knowledge to assess whether changes in baseline knowledge of the primary field test participants were directly related to the workshop (February-March 2014)
- Presented ethics module at BMES Annual Meeting on October 23, 2014 in San Antonio, TX
- Presented ethics modules at the AIChE Annual Meeting on November 16, 2014 in Atlanta, GA
- Advisory Board meeting and RCR Instructor Workshop held in Dallas, TX, on February 20-22, 2015 to finalize/revise module materials
- Spring-Summer 2015: Revise modules in response to RCR Instructor Workshop
- Fall 2015: Broadly distribute materials
- Winter 2015: Adapt modules for online use and training

Ethics Cases. After increasing steadily for several years, the total number of ethics cases arising during peer review and production peaked in 2011 and then decreased over the past 3 years: 158 cases in 2012, 156 cases in 2013, and 138 cases in 2014. YTD June 2015, there have been 72 cases. As in previous years, in 2014 the largest number of cases involved figure manipulation (111 cases). This was followed by cases categorized as miscellaneous (7 cases) and conflict of interest (5 cases). Three cases each were categorized as duplicate publication/submission, duplication of data, human/animal subject protocol, and plagiarism.

In 2014, 75% of all cases were identified in the accepted stage before manuscripts were sent to AiPS vs. 68% in 2013. In 2014, the percentage of cases identified in AiPS was 3% vs. 7% in 2013. The percent identified in the submitted/review stage was 13%, which is a significant decrease over the previous 2 years (30% in 2013 and 27% in 2012). In 2014, 12 cases (9%) were identified after final publication compared with 8 cases (5%) in 2013. Location of corresponding authors' institutions of 2014 ethics cases was 52% non-U.S. vs. 48% U.S. institutions; for overall manuscripts accepted in 2014, it was 56% U.S.

vs. 44% non-U.S. Sanctions were applied for two cases. There were four retractions. See Figure 1 for a snapshot of ethics cases by year.



Figure 1. Ethics cases by year.

Publication Ethics Policy Updates. In 2014, APS Information for Authors was amended as follows:

- Revised the *Cell Lines and Reagents* section to request that authors declare whether cell lines have been authenticated and by what method (e.g., STR profiling). A link to a website that describes the standards for cell line authentication was also added.
- Revised the *Data Presentation* section to encourage authors to present gels, blots, and micrographs with more information including molecular-weight size markers, space above and below the bands of interest, and scale bars.
- Revised the *Guiding Principles for Research Involving Animals and Human Beings* section to address concerns that the most recent revision of the Declaration of Helsinki (2013) is too broad in terms of their definition of clinical trials. To ensure that authors who study human subjects for physiology research are aware that they are not required to register their study in a public database, the first paragraph was updated to reinforce APS's expectation that human subject studies must be reviewed and approved by an IRB and participants must provide written, informed consent.

• The following changes were made to the reviewer invitation instructions and letters to address conflicts of interest:

An instruction was placed in the section where authors suggest reviewers: "It is critical that none of the suggested reviewers have a real or apparent conflict with any of the authors, such as an ongoing, working collaboration, a coauthored publication in the last three years, or a trainee-mentor relationship in the past five years.

The following text was placed in the reviewer invitation letter: "If travel or other commitments preclude completing your review within two weeks, please assist us by declining this request." And, "You should also recuse yourself if you have an association with any of the authors that constitutes a conflict of interest or could give an appearance of a conflict of interest, such as an ongoing, working collaboration, a co-authored publication in the past three years, or a traineementor relationship in the past five years."

Changes to Instructions to Authors

The following changes were made to the APS Information for Authors in 2014:

- July 2014 The option for inclusion of ORCID identifiers for submissions as well in published articles.
- September 2014 The option for inclusion of Fund-Ref information, for submission and publication.
- October 2014 Rapid Reports description was revised.
- February 2015 Changes were made to the description of the Letters to the Editor (LTE) article type to emphasize that the decision to publish rests with the EIC.
- June 2015 The same change was made to the description of the Perspectives article type as was made to the LTE article type.

Source Data

On June 2, 2014, NIH/AAAS hosted a workshop for journal publishers and NIH leadership on the topic of experimental reproducibility. The discussion focused on finding ways for journals to better guarantee that the results published in preclinical studies are reliable and ultimately reproducible. However, the recurring question raised at the meeting was: Can journals really ensure reproducibility of research? And the answer to this question was "no." However, it was agreed that journals could take steps to help ensure that 1) the methodology reported in manuscripts contains more information about how the experiments were performed (randomized, blinded, repeated, etc.) and 2) the results could be vetted more closely (statistics, sample numbers, interpretations, etc.). One of the key initiatives of the meeting was for the journals to comment on a document called "Proposed Principles and Guidelines for Reproducible Science," which aims to set a community standard for publishing preclinical studies. It was noted that each journal is different and that any set of guidelines developed would not fit all journals, but they hoped that each journal could support the principles in some way. The APS was invited to send one representative to this meeting. Christina Bennett attended.

On June 4 and 5, 2014, the National Academy of Sciences hosted a roundtable discussion entitled "The Missing 'R': Reproducibility in a Changing Research Landscape." It was made clear that the ARRIVE guidelines, which were designed to help authors improve reporting of animals studies, have not worked. It was suggested that the guidelines for the 3Rs (Replacement, Reduction, and Refinement) may have worked against the best interests of the community by allowing authors to run experiments that are not powered for proper statistical analysis and interpretation. What can be done to improve the results from animal-based research? Some answers were: more education of trainees and investigators on proper experimental design; journals could enforce higher standards of reporting; data should be stored in repositories; preclinical studies should be registered (like clinical trials are registered); and IACUCs could better review studies. There was no clear conclusion or directive from this discussion. For more information about the topics presented at the meeting visit *http://nas*sites.org/ilar-roundtable/files/2014/03/Formatted-Agenda-FINAL1.pdf. Christina Bennett and Alice Ra'anan were in attendance.

Ad Hoc Data Working Group – APS and TPS. As agreed by the APS Publications Committee, the APS formed a "data working group" with the Physiological Society in recognition of the increasing demand by funding agencies and other institutions to provide access to "data" that support the conclusions of the study for the purposes of reproducibility and transparency. The societies recognized the benefit of developing a coherent approach to managing access to data associated with articles in its journals. Apart from addressing the key concerns of funders, this also provides additional opportunities to enhance the reader/user experience of our journals. In the first half of 2014, the Working Group held its first meeting via teleconference on October 6, 2014 and its second on January 12, 2015, at which the following next steps were agreed for implementation within 2-3 months. The Working Group members are Andy Greene, Tom Kleyman, Prem Kumar (Chair, first teleconference), Gareth Leng, Paul McLoughlin, Curt Sigmund (Chair, second conference), Marty Frank, Philip Wright, Rita Scheman, Simon Rallison.

- Focus would be on secondary data as defined in the two meetings
- Pilot with *Physiological Reports*, to be followed by roll-out if it works
- The policy would be voluntary initially, with view to making mandatory
- Must incorporate into workflow, request this with revision or following cascade
- Excel files would be hosted by the journal as supplementary material; graphics would be hosted in third-party repositories
- Clarify expectations of authors for depositing other types of data that may be necessary to support the conclusions
- Authors to provide acknowledgment as to whether they have provided data to support the conclusion for each article (and publish, although we did not specifically agree)
- Assess resources needed and discuss with Wiley

Financials

Subscription Sales. For 2014, the Society's journal subscriptions tiered prices were increased 2% for Tier 1 (smallest organizations), 4% for Tier 2, and 5% for Tier 3. For 2015, the increases were 0%, 3%, and 5% for Tiers 1, 2, and 3, respectively. In 2014, there was a decrease in sales of both online and print subscriptions. From 2013 to 2014, online subscriptions decreased 3% (from 7,090 to 6,859 subscriptions) and print subscriptions decreased 18% (from 1,889 to 1,551 subscriptions). The net decrease in total subscriptions was 5%. Subscription revenue in 2014 increased slightly.

Color Figures. The number of color figures published in 2014 decreased 3%, from 5,296 in 2013 to 5,135 in 2014, compared with a 6% decrease from 2013-2012.

Composition and Printing. On January 31, 2014, APS signed a new contract for 2015-2016 with our current vendor, Cenveo, with an option for 2017. The term of the contract enables mobility in a changing marketplace with changing technical requirements. In addition to a substantial cost savings for 2015 and 2016 (and option for 2017), a retroactive discount was applied to the full year of 2014 – an offer that other vendors could not make.

Editor Budgets. The target expense for running the Editors' offices remains at \$150 per manuscript. At the March 2015 Publications Committee meeting, it was determined that the Editors may exercise the same discretion in how they spend their budget that is accorded to them in their judgment on the science that is included in the journals, effective with the 2015 budget.

Online Journal Hosting

Hosting Platform. The final migration onto a new (Drupal) software platform of our online platform vendor, HighWire Press, occurred in April 2014. There were many bugs to repair throughout the year that occurred across all journals as a result of the migration, as well as restoration of features that were lost when the new platform was introduced. At the end of 2014, APS upgraded from NLM 2.3 to the JATS 1.0 DTD, a "document type definition" that will enable improvements within our XML (notably for documenting ORCID and FundRef metadata).

New Initiatives

Google Analytics. In the Fall, APS began participation in Google's Subscriber Links program. This means that we are now sending Google information about OA and licensed content so that Google can add links from their search results pages directly to PDF pages on APS journals for all OA content and for licensed content when a user has access. In November 2014, APS upgraded its Google Analytics account to Universal Analytics. This upgrade gives access to improved data processing, new collection methods, and more analysis tools. Our ability to access analytics before November was thwarted due to a vendor coding malfunction, but we have them back up and running. **Alternative Metrics.** APS has purchased Altmetric Explorer, a tool that captures hundreds of thousands of tweets, blog posts, news stories, and other content that mention APS scholarly articles, and measures levels of such attention throughout the media over time.

eLife Lens. The APS has been participating in a pilot implementation of eLife Lens, an interface that provides an alternative viewing experience for articles. Lens enables viewing figures and reference citations in a splitpanel screen without losing one's place in the article text. Two journals are participating in the 2+-month pilot, *AJP-Heart* and *Journal of Neurophysiology*. A rollout across all APS titles will be considered.

Collections. APS proposes to develop cross-journal collections, whereby broad categories are agreed across journals and subcategories, including Calls for Papers, may be implemented on the journal level. Several journals have already implemented topical collections. Collections would develop in stages and include legacy as well as recent content. Collections would provide increased discoverability of APS journal content by topic via search engines as well as by browsing. To further enrich a collections initiative, categories and key words can be identified within and across journals, included at submission and in the metadata. The Physiological Society has such a project in the works and is happy to share progress and work with the APS on the initiative.

Continuous Publication. A "continuous publication" model (article-by-article publication) enables articles to be published as they are available. Issues will continue to be published, such that articles are bundled into an issue when the last article meets the schedule for the issue frequency. Each article carries a "published" date in the citation line, indicating the date of posting for that individual article. The issue date (cover month date, 1st of the month) is the publication date observed by indexing agencies for the purpose of calculating IF and by cataloging agencies. *Journal of Neurophysiology* started the new workflow with the April 2015 issue and *Physiological Reviews* with the July 2015 issue. The rollout will continue throughout Fall 2015 to all of the APS journals.

Annotations. Tables of Contents will carry a brief description of the article. Trialed by *AJP-Heart* this summer.

Thumbnails. Tables of Contents will carry thumbnailsized images associated with each article.

New Publications and Editorial Initiatives *Reviewer CME*

The APS implemented a pilot program in 2013 offering CME credit to U.S.-based physician reviewers for manuscript reviewing services for *AJP-Endo*. An eligible reviewer (U.S.-based physician) may request to participate and may be awarded 3 AMA PRA Category 1 CreditTM per review and may claim up to 15 such credits per year within the American Medical Association Physician Recognition Award (AMA PRA) system. Of the 49 eligible *AJP-Endo* reviewers, 23 reviewers participated who successfully completed reviewing 36 manuscripts for CME credit.

The APS is working with Washington University School of Medicine CME Department to administer reviewer CME to those APS titles that have a corpus of MD reviewers and that wish to participate. This program was rolled out to *AJP-Heart* in July 2015, with plans to invite other APS journals to participate in the near future.

Conference Proceedings

At its Fall 2014 meeting, the APS Publications Committee approved Hershel Raff's proposal regarding the publication of APS-sponsored conference proceedings in APS original research journals. Subsequently, at its Fall 2014 meeting, the APS Council authorized the Publications Department to forego the revenue associated with this initiative and charged the APS Publications and Finance Departments with determining how the lost revenue, as well as any incremental costs, will be recognized within the APS budgeting process.

The rationale for this program has several components:

- It has the potential to attract new authors and readers who would not otherwise publish in or routinely read APS journals.
- It may help attenuate the downturn in submissions to our research journals.
- It will provide a durable record of APS-sponsored conferences.
- It will help publicize the existence of APS conferences and may provide additional motivation for organizers to propose such meetings.

Overview of This Initiative

- 1) The organizers of an APS-sponsored meeting would offer the participants the opportunity to submit a short review article or original research report based on their presentation, assuming the invitation/submission of approximately 30 manuscripts per meeting.
- 2) Editors may wish to exercise flexibility insofar as there is the expectation that manuscripts that reflect work presented at the meeting would be published without extensive revision or requirements for additional work. Standard ethical considerations will apply, such as no duplication of previously published work.
- 3) The most relevant journal among APS research journals would be selected by the conference organizers for publication of their Conference proceedings.
- 4) The EIC of the selected journal must be in agreement regarding publication of the conference proceedings papers. A current or guest AE may be appointed, by mutual agreement between the journal EIC and the meeting organizers, to chase authors to ensure that deadlines are met and to shepherd the papers through the review process.
- 5) No author charges (submission fees or page charges) would apply; that is, the cost of these short papers would be borne by the APS.
- 6) The initiative takes effect with APS-sponsored meetings held from 2015 to 2016 and will be assessed by the Publications Committee at its Spring 2017 meeting. Up to two meetings per year are eligible for participation in this program on a first-come first-served basis.

Update. In agreement with the EIC of *AJP-Regu*, papers from the proceedings of two APS-sponsored meetings will be published in that journal according to the above guidelines: 14th International Conference on Endothelin: Physiology, Pathophysiology and Therapeutics, Savannah, GA, September 2-5; and Cardiovascular, Renal and Metabolic Diseases: Physiology and Gender, Annapolis, MD, November 17-20, 2015.

APSselect

APSselect (http://apsselect.physiology.org/) launched January 2014. APSselect highlights and promotes the top APS original research papers that are published each month across all 10 APS original research journals. Usage data show articles chosen for APS*select* experience a spike in usage on publication vs. non-APS*select* articles (see Figure 2 below).



Figure 2. Average usage for selected vs. non-selected original research articles through the first 12 months following final publication. The data have been normalized across all 10 research journals; values are given as a relative percentage of the maximum amount of usage that an average non-selected or selected article received during this 12-month period.

Comprehensive Physiology

Comprehensive Physiology is a digital update of the *Handbook of Physiology* (*www.comprehensivephysiology. com*). *Comprehensive Physiology* is published as a quarterly journal by Wiley on behalf of the APS.

As of July 1, 2015, 731 articles have been invited, of which 352 have been accepted, 38 are in review or revision, and 325 have been published. The invited articles are from 11 of the 13 sections, covering 21 "topics," each topic corresponding to a volume of the *Handbooks*.

The Journal has been accepted in all of the major abstract and indexing services. The Journal was accepted into PubMed in 2012, and indexing began in July 2013. Its 2014 IF is 4.739.

Books Monograph Series

In June 2011, The APS and Springer signed an agreement for Springer to publish books in its monograph series on behalf of the APS. As part of the agreement, 33 backlist monograph titles have been digitized and are now freely available to APS members. The books are hosted on the Springer website and can be downloaded as PDFs or viewed in a browser. Ten books have been accepted for the program to date. Of these, three have been published in the Perspectives series "The Rise of Fetal and Neonatal Physiology," by Lawrence D. Longo, September 2013; "Mechanisms of Muscular Contraction," by Jack Rall, October 2014; and "Essays on the History of Respiratory Physiology," by John B. West, February 2015.

Physiological Reports

Physiological Reports is an OA journal owned jointly by the APS and The Physiological Society (TPS) and published by Wiley. The Journal uses a "cascading peer review model," whereby manuscripts considered unsuitable for publication in an APS/TPS journal, but yet deemed to be of publishable value, are referred to *Physiological Reports*, with author agreement to "transfer" the manuscript and reviewer agreement to transfer the manuscript reviews. Peer review for de novo submissions is comparable to that of APS journals, and manuscripts transferred to *Physiological Reports* should require no more than minor revisions, which the author must subsequently address.

Article types. The journal accepts only original research articles and commissioned Editorial Focus articles. As of July 1, 2015, a new article type is accepted: Case Reports.

Editors. Susan Wray, Univ. of Liverpool, is EIC, and Thomas Kleyman, Univ. of Pittsburgh, is Deputy EIC, and in June 2015, the Journal Managing Board reappointed both to a second and final 2-year term. AEs are Mrinalini (Meena) C. Rao, Univ. of Illinois-Chicago; Julian R. E. Davis, Univ. of Manchester; Larissa A. Shimoda, John Hopkins Univ.; and Gareth Leng, Univ. of Edinburgh.

Joint Managing Board. *Physiological Reports* is managed by a Joint Managing Board composed of representatives from both societies.

Journal Business Model. *Physiological Reports* is funded by an author processing charge (APC) of \$1,500 paid upon acceptance. This fee is competitive with the fee of \$1,350 of the mega journal *PLOS ONE*, which was the target competitor during development of *Physiological Reports*. The APC for Case Reports is \$1,000; the first 25 Case Reports accepted will be free.

Finances. *Physiological Reports* has achieved a gross profit of \$254,333 in its first full year of publication. The societies receive a 65% profit share, split 50:50 for

articles published via de novo submissions, and split by actual percentage of articles published via transfer from each society, resulting in \$103,341 (79%) share for APS for 2014.

Current Editorial Status. From January 1 to June 1, 2015, 186 articles were published. The cascading peer review model accounts for ~83% of the total submissions, with ~95% of these articles accepted for publication (see YTD 2015 breakdown in Table 1).

Acta Physiologica. In June 2015, the societies signed an agreement with The Scandinavian Physiological Society to include its journal *Acta Physiologica* as a supporter journal to *Physiological Reports* from which suitable manuscripts will be referred.

The Physiologist Redesigned

The APS newsletter, *The Physiologist*, was redesigned to update the format and to print in full color as of the January 2014 issue. As of the January 2015 issue, an HTML version was added to enable search of articles and topics.

Table 1. Physiological Reports Submissions and Published Articles YTD June 2015

Referring Journal	# Referrals	# Author Transfers	% Transferred
AJP-Cell	30	5	17%
AJP-Endo	70	22	31%
AJP-GI & Lung	35	10	29%
AJP-Heart	52	15	29%
AJP-Lung	34	8	24%
AJP-Regu	47	15	32%
AJP-Renal	40	11	31%
JAPPL	96	28	29%
JN	73	19	26%
PG	8	2	25%
J Physiol	187	23	12%
Exp Physiol	36	10	28%
TOTAL	708	168	24%
Direct submissions:	35		
Total submissions:	203		
Accepted/rejected:	184/11		
Published articles Jan 2015 - June 2015:	186		
Overall acceptance rate:	94%		
Direct submissions acceptance rate:	93%		
Transfer acceptance rate:	95%		

Author Survey

The APS Publications Department conducted an author survey to obtain data on what authors perceive to be the strengths and weaknesses of our journals. The survey was distributed to APS members, corresponding authors who had published in APS journals within the last 3 years, active reviewers, and authors who had recently published in competitor journals. Over 23,000 invitations were sent out, and the response rate was 11% (2,586 responses, of which 68% were from APS members).

Survey Highlights

The first few questions served to confirm that respondents are active authors.

The active author respondents were then asked whether they had submitted to APS journals in the past 3 years.

The main reason for those who did not submit is that their work is out of scope (53% of 437 respondents).

Of those authors who have submitted to APS journals during the past 3 years, 76% said that their submissions had remained the same or increased in number

Of the 18% (330) who said that their submissions had decreased, the main reasons cited were:

- 29%: problems with peer review
- 20%: changed research focus
- 13%: fees/cost too high
- 11%: IF too low

We received over 1,000 responses to the questions relating to the peer review experience with rejected manuscripts:

- 20-25% were unhappy with the speed of peer review or the interactions with the editors
- 50% did not find the reviewers comments helpful
- 44% were not satisfied with the scope of requests for new experiments
- 60% were not satisfied with the reason for rejection

Overall, APS authors are satisfied with the journal scope, editors, and the preparation and processing of articles to publication.

Recommendations Supported by the Publications Committee at its October 2014 Meeting:

- 1) Improve IF.
- 2) Adjust journals' scope to attract submissions from new and lapsed authors.
- 3) Improve peer review experience. Provide training for AEs on managing peer review process and for editorial board members/reviewers and monitor performance against set criteria. *Update:* The EICs formed a working group, chaired by Irv Zucker, EIC of *AJP-Heart*, and have developed materials for a webinar that each journal will hold with its AEs and Editorial Board. This group is working from field-tested PowerPoint materials developed by Bill Stanley, prior EIC of *AJP-Heart*, and his team.
- 4) Revisit publication charges. *Update:* Publication charges were reviewed, resulting both from feedback from the Author Survey and from discussion and activities that have evolved over recent years. The following restructuring of author fees takes effect January 1, 2016:
 - Color fees to nonmembers are reduced to \$200 per figure (from \$400 per figure); the APS member benefit of free (editorially necessary) color for articles whose first or last authors are APS members is retained.
 - Submission fees are eliminated, and page charges are increased from \$75 to \$85 per page, making the change revenue neutral.
 - Page charges for AuthorChoice (OA) are eliminated. The APS currently charges submission fees and pages charges in addition to an OA fee. The OA fee (\$2,000 for original research articles and \$3,000 for review articles) now will be the only charge. While this change will result in lost revenue, the model of page charges in addition to OA fees is out of sync with current practice.

Council accepted the report of the Publications Committee. \bullet

Science Policy Committee



Kevin Kregel, Chair

SPC Meetings

The SPC held its eighth faceto-face meeting in Bethesda, MD on September 8-9, 2014. During the business meeting, several action items were identified. These included drafting a letter in support of a bill sponsored by Senator Harkin that would authorize increased funding for the NIH; urging committee members to seek out opportunities for local

advocacy, particularly while Congressional campaigns are ongoing; and promoting the EB 2015 symposium on research reproducibility.

The SPC also met at the EB 2015 meeting Boston, MA. Discussion focused on research rigor and reproducibility, as well as the funding climate at the NIH and several bills that would increase funding for the agency.

SPC Advocacy Activities APS Early Career Advocacy Fellows

Interest in the Early Career Advocacy Fellowship remains strong. This year the Committee selected two awardees: Allyson Hindle, Assistant Professor in the Department of Anesthesia, Critical Care and Pain Medicine, Massachusetts General Hospital, Harvard Medical School, and Giovanna Collu, Postdoctoral Fellow in the Department of Developmental and Regenerative Biology at the Icahn School of Medicine at Mount Sinai. Hindle and Collu joined the two current Fellows, Elissa Carney, Georgetown University, and Ann Stowe, University of Texas Southwestern. All four fellows attended the Committee's meeting at EB, as well as an orientation luncheon, where they had the opportunity to speak with each other, and members of the SPC and APS staff. The Fellows will participate in the Committee's fall 2015 meeting in Bethesda and go on Capitol Hill visits.

Fall Committee Meeting Hill Visits

The Science Policy Committee met in Bethesda on September 8-9, 2014. Sixteen committee members came

in for the meeting, and 15 participated in Capitol Hill day. With the help of APS and FASEB staff, committee members met with staff in 21 Congressional offices. The topics included the need for predictable and sustainable federal funding for research; pending legislation on the inclusion of sex as a biological variable in preclinical research; regulatory burden; and pending legislation that would further restrict travel for federal employees, including scientists.

APS Leadership Visits Capitol Hill With FASEB

On April 14, 2015, Kevin Kregel and 6 APS members participated in FASEB's annual Capitol Hill Day. Representing APS were President Patricia Molina, Past-President David Pollock, FASEB Board Member Hannah Carey, ACDP Chair Mike Sturek, SPC member Laura McCabe, and FASEB President J.R. Haywood. .Our main focus was to inform congressional offices about the negative impacts of eroding budgets on biomedical research.

Chapter Advocacy Partnerships

The Chapter Advocacy Outreach program was initiated in 2012 to help physiologists become more effective advocates for science. It is a joint project of the ACE and Science Policy Committees. Three requests for speakers were received in 2013; two requests in 2014; and, as of May, one request in 2015. These talks addressed research funding, animal research, or both. APS Director of Government Relations and Science Policy gave one such talk to the joint meeting of the Missouri and Iowa Physiological Society Chapters in September 2014. Afterward, she summarized her presentation in a resource entitled "Building Support for Science," which is now posted on the APS website at *http://www.the-aps. org/BuildingSupport*.

EB 2015 Public Affairs Symposium

Carrie Northcott organized a Public Affairs Symposium at EB 2015 in Boston on reproducibility in research, which was an emerging area of interest in the last year. Northcott recruited an excellent panel of speakers, including Shai Silberberg of NINDS, Malcolm MacLeod of Edinburgh University, and Richard Nakamura of NIH's Center for Scientific Review. The session had excellent attendance and was very well received. Audio recordings synced to the speakers' PowerPoint presentations are available on the Science Policy pages of APS's website at *http:// www.the-aps.org/Reproducibility-Symposium*. We have also created a special resource page (*http://www.the-aps.org/ Reproducibility*) to explain the reproducibility challenge and how NIH plans to address it. In addition, APS engaged a video production company to record brief interviews with the speakers after the session. These videos are now available on the APS YouTube Channel at *http://bit.ly/APSReproducibility*.

In preparation for the symposium, Carrie Northcott worked with SPC member Mark Weiss and ECAF Ann Stowe to develop "virtual" journal club materials. Because of this material's continuing relevance, it is also posted to the website (*http://www.the-aps.org/ Reproducibility-Journal-Club*).

Leadership Interactions with FASEB

Hannah Carey currently represents the APS on the FASEB Board of Directors. Kevin Kregel serves as the APS representative to the FASEB Science Policy Committee (SPC), and Kregel also chairs the FASEB SPC

Subcommittee on Animals in Research and Education. APS member J.R. Haywood finished his term as FASEB President on June 30, 2015.

Carey, Haywood, and Kregel all attended the FASEB SPC and Board face-to-face meetings in Arlington, VA on June 1-2, 2015. The meeting included a symposium on the rigor and reproducibility in research. They were also joined by Gaylen Edwards and Bill Yates, who participated in a meeting of the FASEB Animals in Research Subcommittee. Several APS staff members also attended the meetings: Claire Edwards, Linda Yang, and Rebecca Osthus from the Office of Science Policy, and Christina Bennett from Publications.

The APS is represented on various subcommittees of FASEB's subcommittees by the following individuals: Hannah Carey, John Chatham, Gaylen Edwards, J.R. Haywood, Bill Talman, Tim Musch, Bill Yates, Virginia Miller, Carrie Northcott, Michael Portman, Gina Yosten, Tom Pressley, and Phil Clifford.

Council accepted the report of the Science Policy Committee. ●

Section Advisory Committee



Wolfgang Kuebler, Chair

The Section Advisory Committee (SAC) is composed of the elected chairs of each of the APS Sections. The duties of SAC include: 1) assisting the Joint Program Committee in the organization of scientific meetings, 2) serving as the Society's Long-Range Planning Committee, and 3) making recommendations to Council regarding the strengthening of the Sections' roles in programs,

publication, public affairs, and governance of the Society. Below are summarized SAC's primary activities over the past year.

Awards

Most sections continue to see a continuous increase in applications for their awards. In response, several sections have created new awards from donations of section members and corporate sponsors, and several sections have established APS Endowed Matching Funds accounts to sustain the funding of existing awards or add additional numbers of awardees for established awards programs. The Beverly Petterson Bishop Award (endowment) to recognize a junior neuroscientist was inaugurated in 2014 and awarded for the first time at EB 2015. CNS supported two Van Harreveld Awards in 2015 (previously one Award); CaMP increased the number of Robert Gunn Awards to three; CEP almost quadrupled their number of awards, in part due to the engagement at the Comparative Intersociety Meeting in October 2014; GIL increased the number of plenary abstract awards; RENAL is exploring the establishment of a new award that recognizes outstanding mentoring by a faculty member; NCAR provided a new award for best poster selected from trainees who participated in the Data NCARnation session at EB; EM supported two new young investigator research awards; and RESP introduced a new Poster competition for which a total of eight new awards were given out.

Notably and of potential interest for other sections, NCAR has streamlined the application process for their award program with a uniform formatted NCAR Biosketch for evaluation.

Engaging Members in Section Operations

Sections communicate with their members through newsletters, ListServ e-mails, personal contacts, and increasingly through social media. Most sections solicit nominations for positions on the Steering Committee and actively contact members to apply for these positions to ensure succession planning. Several sections write to new section members personally to welcome them and indicate opportunities for them to become involved, and / or write to members who have dropped out to bring them back and / or obtain information as to why they dropped out. In the past year, TEACH has also performed two membership surveys on programming and educational research clusters/mentoring communities.

Many sections are particularly engaged in growing participation by trainees in their section and commonly use special events at EB such as Trainee Workshops, Trainee Mixers, or Trainee breakfast events. The Trainee Subcommittee of CEP maintains their own Facebook page, and several sections have dedicated Trainee Sections in their Newsletter that are run by the Trainee Subcommittee. NCAR has established a new trainee session on the Saturday of the EB meeting called NCARnation, which combines a social event with brief presentations of selected trainee posters.

Section Finances

The majority of sections identified the rising costs associated with their social and trainee events during the EB meeting as the major threat to their financial stability, with ticket fees frequently generating only about 50% of the actual costs for these events and fundraising from industry sponsors commonly proving difficult. The recent doubling of the Distinguished Lecture Ancillary Funds was seen as a big help to cover these increasing costs, but sustainability of the current events and awards programs remains a major concern for most sections.

Interactions With Other Sections

Interactions between sections are generally considered very good/excellent and are particularly active between the various section programming representatives before JPC meetings to explore how sections could assist each other in programming, for intersectional featured topics and integrative symposia, and to avoid potential overlap in speakers, topics, or scheduling.

Programming Of Experimental Biology Meeting

SAC has discussed extensively about ways to increase the attractiveness and diversity of our scientific program at the Experimental Biology Meeting and has met with Robert Hester, Chair of the Joint Programming Committee, to discuss ways to do so. Specifically, it was felt that 1) a more top-down approach for the programming of at least some symposia or featured topics may be helpful to ensure that new, hot, and emerging topics are adequately represented and 2) APS should play on its strengths (diversity of topics, organ systems, and models; and involvement of junior faculties and trainees) rather than aim to copy more specialized, organ- or disease-centered conferences in its programming. To this end, it was decided to reformat the previous Cross-sectional symposia into Integrative symposia, and to give the JPC members considerably more freedom to develop these and populate them with the best international experts based on general suggestions from the membership.

SAC discussed the pros and cons of the program clustering, which had been introduced with the extension of the EB programming throughout the whole Wednesday, and it was felt that the downsides of the clustering overall outweighed its advantages. Thus a motion was put forward and approved to stop program clustering.

Ongoing discussions at SAC focus on the pros and cons of reducing the overall meeting length to 3 days (Sunday-Tuesday) in view of 1) an increasing number of

activities on Saturdays, 2) current funding limitations, and 3) the possibility of expanding the number of parallel sessions with the upcoming withdrawal of the American Society of Nutrition from the EB conference. To increase speaker and topic diversity, regulations are under discussion to limit the number of talks per speaker to one per meeting and to preclude individual speakers from presenting in 2 successive years. A formal mechanism for poster facilitators – already unofficially assigned by several sections but not listed accordingly in the program - is presently under discussion. Overall, SAC members were concerned with what was perceived as a decline in overall attendance of poster sessions. It was suggested that Council, SAC, and FAPS members should set an example by visibly attending the poster sessions and, potentially, to combine posters with a meet-and-greet session at the end of the day (later afternoon) rather than having posters during lunch time.

At the 2014 Fall Meeting, SAC was scheduled to review session allocations for the 2017 EB meeting. In the previous SAC evaluations, the number of session allocations for each section was determined based on a relative average of the number of abstracts submitted to each section from the previous three EB meetings. The benefits and limitations of this criteria were discussed, and while there was consensus that growing sections should be given the opportunity to enhance their programming, SAC members shared considerable concerns about the current evaluation system, since it was seen to 1) unnecessarily enhance competition between sections for abstract submissions, 2) prevent cross-sectional programing of symposia and featured topics, and 3) result in strategic programming to attract more abstract submissions rather than programming based on the best and newest science. SAC therefore decided to keep session allocations unchanged for the time being and to develop alternative metrics that would allow for individual sections to grow without exaggerated competition between sections.

Discussions for further advancement of programming, poster facilitation, and session allocation metrics will be topics to be discussed at the SAC Fall Meeting 2015. In view of the ongoing discussions regarding EB programming, it was felt useful for the Chair of the Joint Programming Committee to attend the SAC meeting on a regular basis, and the idea was discussed to make the JPC Chair an ex officio member of SAC.

SAC Membership

On an annual basis, SAC undergoes changes in membership. In December 2014, Ann Schreihofer's term as chair of SAC came to an end, and Wolfgang Kuebler took over as the new chair of SAC in January, 2015. Also in 2015, Siribhinya (Sinya) Benyajati (CEPS) and Harold Schultz (NCAR) completed their service as section chairs. We recognize and thank Ann, Sinya, and Harold for their leadership, efforts, and dedication to the APS. Concomitantly, we welcome Mike Hedrick and Eric Lazartigues as new section chairs for CEPS and NCAR to SAC.

Interactions Between Sections and APS Journals

The interaction between the section and the APS journals is unanimously considered to be very positive. In addition, different sections and journals have established or utilized various mechanisms to further strengthen these links. The CV section has established an interface person (currently Jessica Bradley) between CV section trainees and *AJP-Heart*. Jo Adams (Editor-in-Chief *AJP-Cell*) sends CaMP weekly emails with the *AJP-Cell* "Image of the Week." *AJP-Renal* provided financial support for the Renal Section Awards Banquet this year.

Various sections also worked with their respective journals to facilitate additional symposia at EB 2015. For CNS, Kirsteen Browning (JPC Rep) and Sean Stocker (Chair) worked closely with Bill Yates (Editor-in-Chief, *J Neurophysiol*) to sponsor a 1-hour symposium that closely aligned with the CNS Distinguished Lectureship. The *Journal of Neurophysiology* also sponsored a special Call for Papers. Similarly, the Editor-in-Chief for *AJP*-*GI* (Kay Lund) sponsored an abstract-driven plenary session, and the Editor-in-Chief for *AJP*-Lung (Sadis Matalon) sponsored an additional invited symposium that was developed in collaboration with RESP.

Finally, several journals worked closely with sections to publish individual presentations or symposia presented at the EB meeting. For CEPS, Willis Samson (Editor-in-Chief for *AJP-RIC*) invited the symposia organizers for the Comparative Intersociety Meeting to submit reviews of the symposia for publication in the journal. In addition, each year the Journal's Editor-in-Chief invites the recipient of the Krogh Distinguished Lectureship to publish his/her lecture in the journal. Willis Samson also invited review articles from the Carl Ludwig Distinguished Scientist and New Investigator Awardee to *AJP-RIC*. Jo Adams (Editor-in-Chief *AJP-Cell*) and Martha O'Donnell (Section Chair) invited the 2015 CaMPS Hugh Davison Distinguished Lecturer, Anita Aperia, to write an article for *AJP*- *Cell.* Sadis Matalon (Editor-in-Chief *AJP-Lung*) invited the organizers of the RESP symposium on contextual biology to publish a comprehensive summary of the symposium in AJP Lung.

Council accepted the report of the Section Advisory Committee. ●

Trainee Advisory Committee



Erica Dale, Chair

TAC Trainee Survey

The Trainee Advisory Committee (TAC) began planning for the 2016 survey and has decided to follow the lead of Council and the strategic planning process and to incorporate the goals and interests of the society and how they may best serve the trainee community. The survey is not limited to APS members but casts a broader net to solicit information from

many trainees who are involved in APS activities and meetings. Since there has been a change in timeline for APS strategic planning, the TAC has put the finalization of the survey on hold to coordinate with Council planning activities.

EB Symposia

The EB2015 TAC Symposium was entitled "Scientists as Supervisors: Hiring, Firing, and Beyond" and was organized by Christopher Banek and Jennifer Steiner. The presentations focused on finding the right employees, managing those employees and resources, and then dealing with the difficult situations that can arise. Those presentations were then followed by a panel discussion with the invited speakers (Michael Reid, Kim Barrett, and Francine Montemurro). Attendance at this morning session was impressive and peaked at over 200 people. The speakers also received very high ratings from the attendees. The EB2015 Trainee Cross-Sectional Featured Topic was entitled "Research Advances in Obesity Research" and encouraged submissions from all sections. This new format was developed to appeal to a broad interest across a large number of sessions and was organized by Karla Haack, Laura Gilliam, and Jessica Bradley. This new format was very successful, and, because of this, the TAC has begun to organize the EB2016 Trainee Cross-Sectional Featured Topic. This proposal was accepted, and organizers Daria Ilatovskaya and Christopher Banek will chair the session entitled "Sex Differences in Health and Disease."

The EB2016 TAC Symposium will focus on positions that do not require a postdoctoral fellowship and is being organized by Brendan Dougherty and Angelina Hernandez-Carretero. This session includes talks on 1) The Need for Career and Professional Development of Scientists with a Versatile PhD, 2) Attaining a Career Without a Postdoc, 3) Attaining a Position in Medical/Scientific Writing, 4) Attaining a Position in education, 5) Attaining a Position in Commercial Industry, and includes a number of speakers from diverse backgrounds.

Career Webinar Series

In conjunction with the Porter Physiology Development and Minority Affairs Committee and the Communications Committee, the TAC is organizing a series of individual webinars detailing distinct career paths within physiology. The webinar will include 30 minutes of real-time interaction facilitated by a presenter currently working in a chosen field. These presentations will include a slide show, and a representative from TAC or the Porter committees will participate as well. Each webinar will be recorded for dissemination to a larger audience. The first webinar participant will be Rudy Ortiz of the University of California-Merced.

APS Trainee Facebook Site and Twitter

The APS Trainee Facebook page currently has 1,663 Facebook "Likes" (a 312% increase from 2014), and the Twitter account has 158 followers (a 44% increase from 2014). Postings come from staff, TAC members, and APS Twitter feeds, providing regular communication to the trainee fans from the APS and the TAC. At the fall meeting, TAC establishes monthly topics relevant to trainees and assigns members responsible for posting materials.

Dale J. Benos Early Career Professional Service Award

The TAC received nine completed applications for the 2015 award. The Committee was extremely pleased to select Alicia Schiller, a PhD candidate at the University of Nebraska Medical Center, as an outstanding candidate for this award. Schiller demonstrated a remarkable level of service through her teaching, outreach, and support of the professional community, even though she is a graduate student early in her career. She has won many awards for her research and an award for her outreach as well. The Council approved this selection, and Schiller received the award at EB 2015. She will also prepare an article for a future issue of *The Physiologist*.

The TAC has begun to follow up with past award winners to determine whether they have continued their service activities and to ask about the impacts of receiving the award on their careers and professional activities. The first recipient of this award was surveyed at the end of 2013, and the third recipient will be surveyed this year.

TAC Outreach

TAC members continue to use social media tools (Facebook and Twitter) along with the APS website and newsletter to engage both undergraduate students and physiology trainees. TAC business cards were distributed again at EB 2015 to increase awareness of these social media websites. TAC members attended the EB 2015 Undergraduate Poster Session and engaged

many of the undergraduate students in discussions of their research, encouraged them to become APS members, and promoted the APS social media sites (Facebook, etc.). The TAC also collaborated with the Career Opportunities in Physiology Committee on the 2015 EB Undergraduate Orientation Session, with Erica Dale presenting a portion of the orientation talk.

Undergraduate Research Advisory Board

To gain a broader perspective of the involvement of undergraduates in APS, the TAC sent a survey to all undergraduates that submitted an abstract to a physiology topic at the EB 2015 meeting. As an incentive to increase participation, the undergraduates were given the opportunity to receive a certificate recognizing them as members of the Undergraduate Research Advisory Board. Almost half of the undergraduate students presenting at EB 2015 responded to the survey. Results will be discussed by TAC at the fall meeting and presented to Council.

APS Graduate Student Ambassador Program

The GSA subcommittee (Jessica Bradley, Jennifer Steiner, and Angelina Hernandez-Carretero) is working with APS staff to finalize a GSA application with the idea to improve communication about APS opportunities to trainees.

Communication With Sections

TAC representatives updated their section activity information in 2014-2015 and shared information with their Section Steering Committee. The most common trainee activities for Sections were research awards for trainees and junior faculty, discounted banquet tickets for trainees, involvement of junior faculty as symposia speakers, and e-media use. About two-thirds of the Sections have a trainee section in their newsletter and have trainees co-chair symposia or featured topics at EB, and some sections also include trainee-driven sessions at EB, trainee subcommittees within the section, and awards for undergraduate students.

Communication With APS Committee Trainee Members

Council has approved funding for a breakfast meeting at EB for all trainees who are members of the APS standing committees and APS Chapter Steering Committees. The idea of this breakfast is to maintain contact with these trainees to understand their needs and concerns in regard to committee service. Attendance at these meetings has steadily climbed each year. In addition, the TAC has begun to develop a survey to be distributed to trainees on APS committees, which will be sent after EB 2016. Council accepted the report of the Trainee Advisory Committee. ●

Women in Physiology Committee



Caroline Rickards, Chair

Bodil Schmidt-Nielsen Distinguished Mentor And Scientist Award

Ten excellent nominations were received for the 2015 Bodil Schmidt-Nielsen Distinguished Mentor and Scientist Award. The Women in Physiology (WIP) Committee selected Jennifer Pollock (University of Alabama, Birmingham) as the awardee. Pollock gave a talk entitled *Mentoring:*

Being in the "NO," providing an overview of her scientific achievements and her role as a mentor over the course of her career. Pollock will develop a Mentoring Forum column based on her lecture published in this issue of *The Physiologist* (p. 279); the multimedia presentation (slides and audio) will also be posted on the APS website. The lecture was followed by a buffet reception, attended by APS Council members, former Schmidt-Nielsen Awardees, Pollock's nominators, colleagues, mentees, and family, awardees of the various APS award programs (tum Suden, Minority Travel Fellows, Porter Fellows, etc.), other trainees, and guests specified by the awardee. Approximately 80-90 physiologists were in attendance.

APS Professional Opportunity Awards: Caroline tum Suden/Frances Hellebrandt, Steven M. Horvath, Fleur L. Strand, and Gabor Kaley Awards

The WIPC received 125 applications for the 2015 tum Suden Professional Opportunity Awards, which is slightly lower than the number of applications in 2014 (145). With additional funds made available by Council, the Committee was able to fund 46 tum Suden Awards (up from 36 previously), 2 Horvath Awards (awarded to the top two underrepresented minority applicants), 1 Strand Award (awarded to the top overall applicant), and 2 Kaley Awards, for a total of 51 awards (41% of applicant pool).

In an effort to promote the namesakes of each of these awards (tum Suden, Hellebrandt, Horvath, Kaley, and Strand), short biosketches are being developed by the WIPC, providing background on the origin of the awards and their funding sources. These biosketches will be published on the APS website and also will be printed on cards to be distributed to the awardees with their award certificates at the APS Business Meeting.

Mentoring Programs Mentoring Forum

Over the past 12 months, the WIPC has coordinated the development of six new Mentoring Forum columns published in *The Physiologist*. These columns cover a wide range of topics, from getting involved in scientific outreach, to surviving parenthood and science, to generating a successful research program at an undergraduate institution. Each article has related bulletin board discussion topics at the mentoring website (*http://www.the-aps.org/mentoringforum*).

MentorNet Mentoring Program

In light of dramatic changes in the cost of subscribing to MentorNet, the WIPC has voted to discontinue its partnership with this program. The APS will continue to provide information about MentorNet on APS listservs and Facebook pages, and other social media sites, and APS members (trainee and regular) can access MentorNet and utilize its services, but there will not be features specific to the society. The WIPC will be researching other mentoring program possibilities, including an APS-specific program that could be operated at a cost either less than or comparable to the cost of continued membership with MentorNet.

WIPC Facebook Page

The WIP Committee has a very active Facebook page, with 531 "likes" and many posts reaching more than 300 views. The specific goals of this page are to share information that is relevant to the mission of the WIP Committee with both men and women, including content on gender issues in science, promotion of physiology to early career scientists, and mentoring. The page is at *https://www.facebook.com/APS.WIPC*.

Experimental Biology Mentoring Workshop

For EB 2015, the workshop was entitled "Mentoring for Diverse Careers: Mentor and Protégé Perspectives." The workshop was held on Wednesday from 8:00-10:00 AM and was attended by approximately 30 participants. Twenty-one attendees (~70%) completed a survey, and based on these responses, the audience was primarily made up of graduate students and new investigators; however, there was a wide range of audience members, including postdoctoral researchers and established investigators. The speaker presentations were rated highly, and there were several questions and issues raised during the discussion period (30 minutes after the three presentations) as well as for several minutes following the end of the symposium.

Representation of Women in APS and Scientific Community Leadership

One of the charges of the WIPC is to support advancement of women in APS and in the scientific community at large. The Committee was pleased to learn that its suggestion to include first names in the listings of APS journal editors was accepted and acted on. The WIPC annually reviews the number of women serving on APS Committees and Section Steering Committees. Of the members who include gender in their membership profile (n = 11,229), women currently comprise about 30% of the APS membership [28% of the regular membership (n = 8,007) and 50% of the student membership (n = 2,009)]. All of these numbers have increased 2-3% from last year. It should be noted that 30% of the APS membership has not provided information on their gender on their membership profile. The WIPC continues to work with the Porter Physiology Development/Minority Affairs Committee to reduce this number.

In reviewing the membership of the APS Section Advisory Committee (SAC) and other Society committees, we found that the representation of women on the general Society committees continues to be very good. The WIPC commends the Committee on Committees for its ongoing attention to gender diversity on APS-appointed committee positions. The Committee is also pleased to note that, in 2015-2016, the APS Council has three women members out of nine (33%) as well as women in both the President and President-Elect positions. Thus, overall, 5 (42%) of the 12 elected members of Council are women. The Committee contends that this continues to reflect the increasing role of women in the Society as a whole and especially in both Section and Committee leadership positions, which provide important visibility and service opportunities. Furthermore, it underscores the importance of encouraging all Sections to involve women in their leadership positions. SAC has three women representatives (27%), down from six in 2014. In reviewing the Section Steering Committees, on average, we found a similar proportion of women as last year (35% vs. 38%). Currently, all Sections have Steering Committees where at least 25% of the members are women, and 7 of the 12 Sections have Steering Committees where at least 40% of the members are women. Similarly, all but three APS Committees are comprised of at least 25% women members; this has improved from six in 2014. The Committee encourages the Committee on Committees and the Section Steering Committees to continue their efforts to identify and select women members for APS Committees.

While historically, there have been very few women selected for the major APS awards, the WIPC is pleased to report that 6 of the 14 (43%) Distinguished Lectures at EB 2015 were given by women. The Committee encourages Sections to include women on their slate of candidates for their Distinguished Lectureships.

Concluding Remarks

The WIPC is pleased to announce that Council approved our request for a strategic planning meeting in 2016 to 1) review the current charter of the committee; 2) review and discuss current committee activities; and 3) discuss broader issues facing women in the field of physiology. Following these discussions, a 5-year plan will be developed for the committee to address both current and future initiatives. We look forward to reporting the outcomes of this meeting to Council in 2016.

The WIP Committee continues to work to promote women within the Society and the scientific community

and to provide mentoring for early career investigators and trainees. We look forward to additional involvement in new APS programs and activities, and we will strive to remain instrumental in the implementation of the New Strategic Plan developed by Council.

Council accepted the report of the Women in Physiology Committee.



Experimental Biology 2016

April 2-6, 2016 • San Diego, California

APS Teaching Workshop: The APS Institute on Teaching and Learning

June 20-24, 2016 • Madison, Wisconsin

Physiology 2016

July 29-31, 2016 • Dublin, Ireland

APS Conference: Inflammation, Immunity and Cardiovascular Disease August 24-27, 2016 • Westminster, Colorado

APS Intersociety Meeting: The Integrative Biology of Exercise VII Fall 2016 • Location TBD

For more information on APS meetings, please visit: the-aps.org/Conferences



APS Members receive discounted registration to EB and APS Conferences!

The American Physiological Society usually holds one or more specialty conferences each year. In addition, APS joins with other societies to sponsor Intersociety Meetings as interest warrants. Please send an email to <u>meetings@the-aps.org</u> for questions or topic suggestions on APS Conferences.

www.the-aps.org/conferences • meetings@the-aps.org • 题 #PhysiolConf

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 Resistence

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 David M. Pollock

Univ. of Alabama at Birmingham Endothelin as a Master Regulator of Whole Body 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

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

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



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



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





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 Wednesday, April 6, 2016, 4:45 PM

Upcoming EB Symposia

Mark your calendars for professional development symposia at Experimental Biology 2016! Check the symposia websites for more information.

Keep Your Eye on the Ion -

A Refresher Course on Ionic Homeostasis and Systems Physiology

(Medical Education Refresher Course sponsored by the Education Committee)

Organizers: David Rodenbaugh (Oakland Univ.) Karie Scrogin (Loyola Univ. Chicago)

Saturday, April 2, 2016, 8:00 AM to 12:00 PM

Location: Convention Center, Rm. 24

the-aps.org/refresher-ion

Get an update on integration of cellular and systems physiology content from leading experts in the field:

- Regulation of Sodium Homeostasis and Hypertension (John Osborn, Univ. of Minnesota)
- *Regulation of Potassium Homeostasis and Renal Disease* (**Biff Palmer**, Univ. of Texas Southwestern Med. Ctr.)
- Acid Base Disturbances and Regulation of Potassium (L. Lee Hamm, Tulane Univ. Sch. Med.)
- Cardiac Ischemia: Ionic Currents and the ECG (Richard Klabunde, Marian Univ. Coll. Osteopathic Med.)

Negotiating for Success! (Mentoring Symposium)

Organizers: Karen Mathis (Univ. of Cincinnati) M. Lourdes Alarcón Fortepiani (Univ. of Incarnate Word) Karen Sweazea (Arizona State Univ.)

Monday, April 4, 3:15-5:15 PM

Location: Convention Center, Rm. 25C

the-aps.org/negotiating

Negotiation is both a skill and an art. This mentoring symposium will focus on what negotiation really is: using the right tools and the right approach to succeed in any discipline. To address this issue, we will discuss personality types, help you to determine yours and teach you skills to maximize your strengths based on your gender and your own personality. In addition, negotiation skills will be discussed, both in general and in more specific areas with a panel of speakers from various fields, including academia, industry, and the military. Including:

- Making Your Personality Type Work for You (Jenni Prisk, Prisk Communications)
- *Negotiation 101:* Speaker TBA
- Negotiation 201: Industry R&D (Magdalena Alonso-Galicia, Bayer HealthCare LLC)
- Negotiation 201: Academia Research (Kim Barrett, Univ. of California, San Diego)
- Negotiation 201: Academia Teaching (Jennifer K. Uno, Elon Univ.)
- Negotiation 201: Military (Kathy Ryan, U.S. Army Inst. Surgical Res.)

Leadership and Management Skills: What You Might Not See in Your CV (Career Symposium)

Organizers: Christine Schnackenberg (GlaxoSmithKline) Clintoria Richards-Williams (Emory Univ. Sch. Med.)

Tuesday, April 5, 10:30 AM to 12:30 PM

Location: Convention Center, Rm. 25B

the-aps.org/leadership

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. It is important to identify the leadership and management skills that you already have and the gaps in your experience. The purpose of this symposium is to explore, identify, and apply inherent and learned leadership/management skills.

- Developing the Leader Within You (Sarah Leonard, GlaxoSmithKline)
- Uncovering What is Already in Your Experience (Brian McCarthy, Portland State Univ.)
- *Translating Your CV into an Effective Resume in the Life Sciences* (Andrew Green, Univ. of California, Berkeley)
- *Demonstrating Leadership and Management in Practice* (Patricia Molina, Louisiana State Univ. Hlth. Sci. Ctr.)

Now Hiring Ph.D.'s: Post Doc Not Required (Trainee Symposium)

Organizers: Angelina Marie Hernandez-Carretero (Univ. of California, San Diego) Brendan Dougherty (Univ. of Wisconsin)

Wednesday, April 6, 10:30 AM to 12:30 PM

Location: Convention Center, Rm. 22

the-aps.org/hiring

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. This symposium will introduce the current status of PhDs in the workforce and give examples of scientists who have successfully transitioned into non-academic positions.

- *The Need for Career and Professional Development of Scientists with a Versatile PhD* (Philip Clifford, Univ. of Illinois at Chicago)
- *Attaining My Career Without a Postdoc* (Maria Urso, Smith & Nephew Biotherapeutics; Sara Ahmed, Washington Univ. in St. Louis; Carrie Wolinetz, Office of Science Policy, NIH; Stephanie Colvin, Eli Lily; Sonia Zarate, Univ. of San Diego; Brett Kirby, Nike Sport Research Lab)

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
Room 23	9:30 AM-11:30 AM <u>MCS Symp</u> 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 <i>MCS Symp</i> Advances in Microvascular Permeability/Glycocalyx Breslin
Room 24	8:00 AM-12:00 PM Education Comm 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
Room 25A		1:00 PM–5:15 PM <i>PGG Special Session</i> 3rd Annual APS Physiological Genomics Group Conference	
Room 25B		1:00 PM-3:00 PM ACE Comm Symp Having Trouble with Your IACUC? Henegar	
Room 25C			3:00 PM–5:00 PM Communications Comm 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 27		6:00 PM-8:00 PM MCS Special Session Microcirculatory Society Reception and Poster Discussion
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	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	<i>E&M Section Symp</i> 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-7:30 PM MCS Business Meeting/Reception/Poster Discussion 2
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 4:15 PM–5:15 PM WEH Section Starling Lecture Pollock

Sunday, April 3, 2016, cont.

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	<i>Renal Section FT</i> Advances in Kidney Physiology Ortiz	Renal Section FT Renal Section Young Investigator Symp: Novel Signaling and Transport Mechanisms in the Collecting Duct Prieto/Peti-Peterdi	EEP Section Symp Emerging Mechanisms of Thermoegulation and Metabolic Control Clanton/Periasamy
Room 28A	PGG Award Session Physiological Genomics Trainee Highlights	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 Nichols/Frigon	CV Section FT Sex Disparities in Cardiovascular Function and Remodeling Goulopoulou

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	President's Symp Series Symp 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/Guelinckx	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 <i>CNS Section</i> Erlanger Lecture MiniSymp 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/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 Innovations in Teaching Physiology 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
Room 25C	WEH Section FT Hypertension: Developing Concepts O'Connor/Ho	CEP Section FT Avian Osmoregulation: Unique Solutions, Unanswered Questions Sweazea/Goldstein	WIP Comm Symp Negotiating for Success! Mathis/Alarcón Fortepiani
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

Monday	, April	4, 20	16,	cont.
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Room 27	CV Section FT Cooperation Between Adaptive and Innate Immunity Post- Myocardial Infarction 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	ETG FT	CV Section FT
	Cerebrovascular Dysfunction and	Epithelial Physiology and	Cardiopulmonary Effects of
	Reactive Nitrogen Species	Transport II	Environmental Stressors
	Katakam/Pollock	Hamilton/Helms	Wold
Room 28B	Publications Comm Symp	CV Section Symp	Resp Section FT
	Publishing 101: How to Get Your	Thyroid Hormone Modulation of	Inflammation and Its Influence
	Work Published and Avoid Ethical	Cardiac Function and Remodeling:	on Lung Function and
	Minefields	Bench to Bedside	Respiratory Control
	Sigmund/Scheman	Portman/Gerdes	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 and ASHG Symp Beyond GWAS: Attaching Physiology to the Genome Joe/McInerney	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 Session	<i>CV Section Symp</i> 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/Jones	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
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 Comm 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 Pathology and Disease Welling	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 Lazartiques	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
Location TBD			1:00 PM–2:00 PM History of Physiology Group Lecture Severinghaus 3:00 PM–5:00 PM 2014 Tang Prize in Biopharmaceutical Science Honjo

Tuesday, April 5, 2016, cont.

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 Antunes	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	BMES Symp
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	<i>E&M Section Symp</i> 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	The Physiological Society- UK Symp TBD

Education

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Video Contest Award Now Includes EB Travel Award

Application Deadline: December 15, 2015 the-aps.org/video

APS Presents . . . Phantastic Physiology Voyage: "Function Follows Form" video contest encourages undergraduate and graduate students to creatively connect with physiology and engage with the broader public through a short video contest.

First place awardee(s) receives a total of \$750.

NOTE: Starting this year, the awardee(s) will also receive up to \$1,000 to partially cover travel costs to attend the Experimental Biology 2016 meeting and accept the award. The award-winning video is selected by members of the Career Opportunities in Physiology Committee.

Viewers' Choice awardee(s) receives a total of \$250 (determined by total hits on YouTube site) as of the beginning of the Experimental Biology meeting.

Videos should creatively demonstrate and/or explore a specific physiological function in 5 minutes or less (including credits). The target audience is the general public. Video can be staged as a short play, commercial, news broadcast, talk show, music video, documentary, etc. No professional assistance can be provided to produce the video in any manner. Videos are uploaded to YouTube for viewing. Application materials are submitted online to APS.

To view previous award-winning videos and find more information, visit the-aps.org/video.

Start filming now and submit your award-winning video by December 15 at the-aps.org/awardapps.

Diversity and Higher-Education Awards

Novel Disease Model Awards for Predoctoral Students and Postdoctoral Fellows Application deadline: November 5, 2015

the-aps.org/mm/awards/Other-APS-Awards

This award recognizes a postdoctoral fellow (\$800 award) and a predoctoral student (\$500 award) who submit the best abstracts describing a disease model at Experimental Biology. While the model may be cellular or in vivo, the applicant should clearly emphasize the novelty of the model and the potential utility of the system for future research related to a disease process. The applicant does not have to be an APS member, and there are no restrictions on how the award is spent. Previous awardees are not eligible to apply at the same education level. Use the link above, then select either "Graduate or Medical Student" or "Postdoctoral Fellow or Medical Resident."

Caroline tum Suden/Frances A. Hellebrandt Professional Opportunity Awards

Steven M. Horvath Professional Opportunity Awards

Fleur L. Strand Professional Opportunity Award

Application deadline: November 5, 2015

the-aps.org/mm/awards/Other-APS-Awards

These awards provide funds for junior physiologists to attend and participate fully in the Experimental Biology meeting. The tum Suden/Hellebrandt award is granted to as many as 46 male or female graduate students or postdoctoral fellows. The top applicant will be designated as the Strand Awardee and will receive \$1,000. The top two underrepresented racial/ethnic minority recipients will be designated as Steven M. Horvath Awardees.

To be considered for these awards, the candidate must be the first author of an abstract submitted to APS and must be a member of APS at the time of application* (either Student or Regular Member). To receive the award, recipients must attend EB, present their research at the meeting, and attend the APS Business Meeting. The awardees receive \$500 and complimentary registration for the Experimental Biology meeting (Strand Awardee receives \$1,000). Awardees will be allowed to only receive a tum Suden, Strand, or Horvath Award once as a predoctoral student and once as a postdoctoral fellow. Use the link above, then select either "Graduate or Medical Student" or "Postdoctoral Fellow or Medical Resident."

Excellence in Professional Student (MD or DO) Research Travel Awards

Application deadline: November 12, 2015

the-aps.org/md-do

The Excellence in Professional Student Research Travel Award provides funds for up to 10 MD or DO students who are first authors on an abstract submitted to the EB meeting to attend, present their research, and participate fully in the EB meeting. To be considered for these awards, the candidate must be a member of APS at the time of application. U.S. residency is NOT required.

APS Minority Travel Fellowship Awards for EB 2016 Award

Application deadline: November 12, 2015

the-aps.org/minoritytravel

The APS is offering travel awards for individuals who traditionally have been underrepresented in science to attend EB 2016 from April 2 to 6 in San Diego. The specific intent of the APS Minority Travel Fellowship is to increase active participation in and networking at scientific meetings among pre- and postdoctoral students, and early career faculty who are from groups underrepresented in the physiological sciences.

The APS Minority Travel Fellowship Awards are open to:

- underrepresented minority (URM) graduate students, postdoctoral fellows, and early career faculty (recently transitioned)
- graduate students, postdoctoral fellows, and early career faculty (recently transitioned) with disabilities

Applicants must be attending U.S. institutions and conducting research within the 50 States and U.S. Territories. Membership is not required for APS Minority Travel Awards. Porter Physiology Development Fellows are encouraged to apply. Incomplete applications will not be reviewed. Awardees will receive up to \$1,800 in expense reimbursement for registration, housing, meals, air and ground transportation, and tips. These awards do not provide funds for international travel.

ADInstruments Macknight Early Career Innovative Educator Award

Application deadline: December 1, 2015

the-aps.org/adi

The ADInstruments Macknight Early Career Innovative Educator Award honors an early career APS member who demonstrates the greatest potential for incorporating innovative teaching techniques and effectively utilizing technology resources in engaging undergraduate students in physiology education. The awardee receives a \$1,500 Travel Award, complimentary registration to attend the EB meeting, and an Institutional Grant providing the awardee's institution with a PowerLab PTB4152 Physiology Teaching Bundle or equivalent.

K-12 Minority Outreach Fellowships Application deadline: December 30, 2015

the-aps.org/k12minorityoutreach

The APS K-12 Minority Outreach Fellowship seeks to foster communication between minority graduate and postdoctoral students and middle/high school minority life sciences students. Program activities include yearlong outreach fellowships for senior graduate students and postdoctoral fellows to visit K-12 classrooms, help conduct teacher professional development workshops, and attend scientific meetings. Funds are provided to attend two EB meetings and one fall conference (ABRCMS or SACNAS), a value of \$5,400.

David S. Bruce Awards for Undergraduates in Research Abstract deadline: November 5, 2015

Application deadline: January 12, 2016

the-aps.org/bruce

The David S. Bruce Undergraduate Awards are presented annually to undergraduate students who are first authors on an EB abstract and are presenting their research at the EB meeting. There are two types of Bruce Awards that students can apply for through a single application.

David S. Bruce Outstanding Undergraduate Abstract Awards

This award provides \$100 and a 2-year complimentary membership with APS. The student must be enrolled as

an undergraduate at the time of the abstract submission, be the first author on a submitted abstract for the EB meeting, and be working with an APS member. Selection of awardees is based on the abstract, letter of application, and letter of support from the research host. Receipt of the award is contingent upon presenting the research at EB.

David S. Bruce Excellence in Undergraduate Research Awards

To be considered for this award, students must be a David S. Bruce Outstanding Undergraduate Abstract Awardee and must attend and present a poster at the EB meeting. The recipients receive \$400 and a certificate. The highest-ranked awardee receives another \$250, thanks to the generous contribution of an APS member. Selection of awardees is based on the quality of the poster and oral presentation of the poster to the David Bruce Award Selection Committee.

Porter Physiology Development Fellowships

Application deadline: January 15, 2016

the-aps.org/porter

The goal of the Porter Physiology Development Program is to encourage diversity among students pursuing fulltime studies toward the PhD in the physiological sciences and to encourage their participation in the Society.

The Porter program provides a full-time graduate fellowship (\$28,300 during the academic year) to students in programs leading to the PhD in the physiological sciences at U.S. institutions. The program is open to underrepresented racial and ethnic minority applicants who are citizens or permanent residents of the U.S. or its territories and student members of the Society.

Dale J. Benos Early Career Professional Service Award

Application deadline: January 24, 2016

the-aps.org/benos

The Dale J. Benos Early Career Professional Service Award honors an early career stage (graduate student, postdoctoral fellow, assistant professor, or equivalent position) member of APS. The award will honor someone who is judged to have made outstanding contributions to the physiology community and demonstrated dedication and commitment to furthering the broader goals of the physiology community. This can be by serving on professional committees, participating in K-12 education outreach, participating in scientific advocacy and outreach programs, or otherwise strengthening and promoting the physiology community.

Undergraduate Summer Research Fellowships

Application deadline: February 1, 2016

the-aps.org/summerresearch

APS is proud to offer five programs that allow undergraduate students to participate in research during the summer. Recipients spend an average of 10 weeks in the laboratory of an established scientist and APS member. Each program recruits undergraduate students nationwide, two internationally. Some programs are open to students from disadvantaged backgrounds, from underrepresented racial and ethnic groups, and with disabilities. Each Fellow receives a stipend plus additional funds for travel to present his or her research at a scientific meeting. Research hosts receive funds for student lab supplies. ●

To apply to any of the following/above awards, go to *the-aps.org/awardapps*.

400+ awards totaling \$1.2 million!

Awards, Grants, and Fellowships

As part of our mission to foster education, scientific research and dissemination of information in the physiological sciences, APS hands out more than 400 awards in the field of physiology each year totaling more than \$1.2 million. Deadlines are fast approaching for a number of our awards including those for our annual Experimental Biology Meeting.

- Student/Trainee Awards
- Section Awards
- Society Awards
- Teacher Awards

For more information and to apply, please visit <u>the-aps.org/awards</u>
Science Policy

Science Policy Symposium Tackles Scientific Rigor

Scientific rigor and issues that can affect the reliability of research results were the focus of the EB 2015 Science Policy Symposium. APS Science Policy Committee member Carrie Northcott chaired the session on "Reproducibility in research: What are the problems? How can we fix them? What happens if we don't?" Addressing this topic were speakers Richard Nakamura, Malcom Macleod, and Shai Silberberg.

Nakamura, the director of NIH's Center for Scientific Review, spoke on the role of peer review in assessing study design and evaluating the scientific premise of proposals.

Macleod, a professor of neurology and translational neuroscience at Edinburgh University, discussed animal



models of human disease and how to improve the translation of effects to humans.

Silberberg, a program director at the National Institute of Neurological Disorders and Stroke who has played an active role in raising awareness of this issue, gave his personal views on what should be done to improve research methods and reporting.

After the symposium, the participants sat down for interviews in which they highlighted key issues. These interviews are posted on the APS YouTube channel at *http://bit.ly/APSReproducibility*.

The speakers' presentations are available on the Science Policy pages (*http://www.the-aps.org/Reproducibility-Symposium*) of the APS website, along with MP4 files with both their slides and their oral presentations. Also available is a journal club activity (*http://www.theaps.org/Reproducibility-Journal-Club*) featuring articles and questions suggested by the speakers. Other useful information and resources on the challenges of reproducibility (*http://www.the-aps.org/Reproducibility*) are posted on the APS website.

APS Urges USDA to Retain Current Nonhuman Primate Standards

On August 31, 2015, the APS submitted comments urging USDA to retain its current outcome-oriented Animal Welfare Act (AWA) regulations for providing nonhuman primates (NHP) an environment that promotes their psychological well-being. APS was responding to a Request for Information from USDA concerning a petition from several animal rights groups that asked the agency to promulgate new regulations with specific standards for what constitutes an "ethologically appropriate environment" for NHP in research.

The term "ethologically appropriate environment" was first mentioned in the 2011 Institute of Medicine report *The Use of Chimpanzees in Biomedical and Behavioral Research: Assessing the Necessity.* However, the report did not define the term. NIH subsequently convened an expert working group to help it implement the IOM recommendations – including this one. The working group developed 10 housing recommendations based on the living conditions of chimpanzees in the wild. Using this as a point of reference, the petitioners asked USDA to set new AWA regulations with comparable recommendations for every NHP species.

In its comments, the APS pointed out several problems with the petitioners' request. First of all, while NIH adopted 9 of the 10 working group's recommendations, it did so with caveats reflecting the difficulty of trying to simulate conditions that exist in the wild in a laboratory setting. For example, even though the working group said the minimum size for social groups should be 7 chimpanzees, it acknowledged that "compelling factors" might prevent social housing of some animals. NIH agreed with the principle that "housing chimpanzees in larger groups has the potential to offer greater social complexity and more environmental stimuli than housing them in smaller groups," but it spelled out a number of reasons why this might not be possible. NIH noted that facilities would need to "evaluate individual chimpanzees to determine their suitability for successful integration into larger social groups." Moreover, this evaluation would have to take into account individual chimpanzee's needs, the facility's own capabilities, and any ongoing research involving the animals. The same kinds of caveats and exceptions would also have to be made for other species of NHPs, undermining the utility of specific standards.

In support of the petitioners' request for standards of what constitutes an ethologically appropriate environment, they asserted that USDA's existing standards do not ensure the psychological well-being of NHPs as required by the AWA. However, as noted by the National Association for Biomedical Research (NABR) in its comments, this claim was grounded in a biased review of outdated information about NHPs in research. More recent information shows that the vast majority of nonhuman primates in research are now housed socially. In addition, research facilities have more experience with ways to promote the psychological well-being of all nonhuman primates by providing them with foraging opportunities, objects they can manipulate, sensory and cognitive stimulation, positive reinforcement training, and other kinds of behavioral management.

The complete APS comments on this petition are posted online at *http://www.the-aps.org/mm/SciencePolicy/ About/Comments-Letters/Ethologically-Appropriate- Environments.pdf.* ●

New Reporting Won't Benefit Animals but will Add Burden

On August 24, 2015, the APS submitted comments in response to a USDA request for information (RFI) on whether to expand the reporting requirements for research with USDA regulated animals. The request was prompted by a petition from the National Anti-Vivisection Society (NAVS). In its response, APS noted that the information already submitted in annual reports fulfills Animal Welfare Act requirements. The additional information the petitioners want USDA to require in annual reports would not serve to improve animal welfare, but it will increase cost and administrative burden.

The petitioners have suggested that a "revised system of recordkeeping would not add an undue burden to licensees." However, the proposed changes would increase regulatory burden for scientists, veterinary IACUCs, and institutional staff, administration because it would require more information gathering for annual reporting, without improving animal care. In addition to increased burden, implementing a new reporting system would be costly because the current tracking and monitoring systems at research facilities are not "maintained in a format that facilitates annual reporting." To read the entire APS response, go to http:// www.the-aps.org/USDAReportingRequirements. Excerpts of the RFI and response are provided below.

Should APHIS amend the regulations to require research facilities that use animals for teaching, testing, and experimentation to provide specific information about how regulated animals are used (for example, for safety testing, teaching purposes, or disease research)? Would reporting this information improve animal welfare? If so, how?

The APS recommends that the regulations not be amended since USDA's current reports already meet the reporting requirements of the Animal Welfare Act (AWA). Because all animal protocols – regardless of purpose – undergo the same evaluation by the Institutional Animal Care and Use Committee (IACUC) mandated by the AWA, categorizing protocols based on purpose will not improve animal welfare. Moreover, the petitioners make no claim that additional reporting will improve the welfare of animals in the context of approved activities. Rather, they say that it will give them "a measure of success in promoting their efforts."

Our greatest concern is that the burden of the additional reporting would come at the cost of scientific and medical advancements because resources designated for research will be diverted into compliance.

If research facilities were required to report the purposes of their animal research activities, what types of information should be provided, and why?

The USDA's current reporting fulfills what the AWA requires. The petitioners say their request for additional information is necessary to "allow more accurate comparisons of animal use in the U.S. to the European Union, so that global trends in animal usage could be determined." The provisions of the AWA do not require research facilities to engage in expanded information gathering and reporting for comparison with other countries or for the convenience of third parties.

What might be the effects, if any, on research facilities if they are required to collect and report this additional information?

Potential security concerns: The APS is skeptical how including the reporting facility for each animal species will improve animal welfare. In fact, doing so is a security concern for the animals and personnel because it could provide information to those who might wish to harass or disrupt research activities.

Fewer FOIA requests: The APS questions the validity of petitioners' statement that additional reporting may "lead to cost- and time-saving benefits because it should result in significantly fewer requests under the Freedom of Information Act." According to a NABR analysis of AWA FOIA requests to USDA in FY 2014, the most frequently requested information about research facilities were APHIS inspection reports for specific institutions.

Since it seems highly unlikely that additional information on animal reports would reduce the number of FOIA requests for APHIS inspection reports, changing the form would neither reduce cost nor time spent on FOIA requests.

Does the annual reporting form currently required to be used by research facilities capture sufficient information? If not, what information is missing? The APS believes the current USDA reporting form sufficiently fulfills the requirements of the AWA and the AWA regulations on recordkeeping. In addition to annual reporting, institutions also undergo unannounced inspections to ensure their compliance with the AWA. Because of these two processes, additional reporting on animal use is unnecessary.



Publications

Current Calls for Papers

Physiological Genomics

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

Journal of Neurophysiology

- Methods to Understand Brain Connections and Neural Function (Submission deadline: January 1, 2016)
- Neurological Disease and Autonomic Dysfunction (Submission deadline: January 1, 2016)
- Active Sensing (Submission deadline: January 1, 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

• Pre-Professional Education in Transition

Journal of Applied Physiology

• Analogs of Microgravity: Space Research Without Leaving the Planet (Submission deadline: October 1, 2015)

American Journal of Physiology – Cell Physiology

- Cell and Molecular Processes in Cancer Metastasis (*Submission deadline:* December 31, 2015)
- Cell Signaling: Proteins, Pathways and Mechanisms (Submission deadline: December 31, 2015)
- Cellular Responses to Hypoxia (Submission deadline: December 31, 2015)
- Omics and Epithelial Cell Biology (Submission deadline: December 31, 2015)
- Stem Cell Biology (Submission deadline: December 31, 2015)
- STIM and Orai Proteins in Calcium Signaling (Submission deadline: December 31, 2015)

American Journal of Physiology – Endocrinology and Metabolism

• Islet Biology (Submission deadline: December 31, 2015)

- Novel Aspects of Adipocyte Biology (Submission deadline: December 31, 2015)
- CNS Control of Metabolism (Submission deadline: December 31, 2015)
- Endocrine and Metabolic Dysfunction during Aging and Senescence (*Submission deadline:* December 31, 2015)
- Metabolic Control by Inflammation and Immunity (Submission deadline: December 31, 2015)
- Mitochondrial Dynamics and Oxidative Stress in Disease (Submission deadline: December 31, 2015)
- Stress-Induced Metabolic Regulation (Submission deadline: December 31, 2015)

American Journal of Physiology – Gastrointestinal and Liver Physiology

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

Current Calls for Papers, continued

American Journal of Physiology – Heart and Circulatory Physiology

- Small Vessels Big Problems: Novel Insights into Microvascular Mechanisms of Diseases (*Submission deadline:* January 15, 2016)
- Cardiovascular Epigenetics: Phenotypes and Mechanisms (*Submission deadline:* January 31, 2016)
- Quantitative Analyses of Coronary Vascular and Cardiac Mechanics in Health and Disease (*Submission deadline:* January 31, 2016)

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
- Bioengineering the Lung: Molecules, Materials, Matrix, Morphology, and Mechanics
- 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*)
- Transport Proteins as Regulators of Blood Pressure Homeostasis (*Submission deadline: December 31, 2015*)

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

People and Places

Skalak Named Executive Director



Thomas C. Skalak

As of February 2015, Thomas (Tom) C. Skalak left his role as Vice President for Research at the University of Virginia to serve as Executive Director of Science and Technology Programs at the Paul G. Allen Family Foundation in Seattle, WA. He is on leave as Professor of Biomedical Engineering at UVA until January 2017.

Tom has been an APS member

since 2005. He has been actively involved in scientific societies, serving as President of the American Institute of Medical and Biological Engineering and the Biomedical Engineering Society. He earned his bachelor's degree from Johns Hopkins University and his PhD from the University of California, San Diego. His research has centered on cardiovascular physiology, with special

emphasis on biomechanics, angiogenesis, wound repair, systems biology, and regenerative medicine. He also directed the launch of OpenGrounds, an initiative to connect UVA, its community, and international interests in partnerships that produce innovative ways to address critical societal needs.

Founded in 1988 by Microsoft co-founder, Paul Allen, and his sister, Jody Allen, The Paul G. Allen Family Foundation endeavors to promote meaningful change in the Pacific Northwest and across the world. Through its Science and Technology program, the Foundation pursues projects that drive scientific and technological advancement in innovative ways. In his role as Executive Director of Science and Technology Programs at the Foundation, Tom will develop partnerships with institutions that seek to explore new scientific directions and reinvent scientific fields to better reflect the needs and challenges present in today's society, and to foster scientific curiosity and innovation. ●

McMahon Appointed Dean

Lori McMahon has been appointed dean of the Graduate School at the University of Alabama (UAB) at Birmingham. McMahon currently is a professor of cell, developmental, and integrative biology as well as

the Jarman F. Lowder Professor of Neuroscience and the Director of the UAB Comprehensive Neuroscience Center. McMahon began her appointment October 1. ●

THEPHYSIOLOGIST

Membership

New Regular Members

*transferred from student membership

Asmahan Abuarish McGill Univ., Montreal, QC, Canada

Oluwaseun Akeju MGH, Boston, MA

Rodrigo Andrade Wayne State Univ. Sch. of Med., Detroit, MI

Gohar Azhar* Univ. Arkansas Med. Sci., Little Rock, AR

Amit Badhwar C. R. Bard, Inc. (Davol Inc.), Warwick, RI

Christian George Bénar INSERM, Aix-Marseille Univ., Marseille, France

Linda Hildegard Bergersen Univ. of Oslo, Oslo, Norway

Richard N. Bergman* Cedars-Sinai Med. Ctr., Los Angeles, CA

Joanne Nellie Caldwell Odgers Univ. of Wollongong, Brighton East, VIC, Australia

Stephen C. Cannon UCLA David Geffen Sch. of Med., Los Angeles, CA

Eugenia Carvalho Arkansas Children's Nutrition Ctr., Little Rock, AR

Chandramouli Chandrasekaran Stanford Univ., Stanford, CA

Yu-Hsin Chiu Univ. of Virginia, Charlottesville, VA Patrick Leon Crosswhite* Oklahoma Med. Res. Foundation, Oklahoma City, OK

Richard N. Day Indiana Univ. Sch. of Med., Indianapolis, IN

Stefano Fausto De Marchi Univ. Hospital, Bern, Switzerland

Massimiliano Di Luca* Univ. of Birmingham, Birmingham, United Kingdom

J. Brandon Dixon Georgia Inst. of Tech., Atlanta, GA

Yuri L. Dorokhov Moscow State Univ., Moscow, Russian Federation

Stian Ellefsen Hogskolen I Lillehammer, Lillehammer, Norway

Steven Elmer Michigan Tech. Univ., Houghton, MI

Mohammad Elnakish The Ohio State Univ., Columbus, OH

Michael Farrell Monash Univ., Clayton, VIC, Australia

Brett Edward Fenster National Jewish Hlth., Denver, CO

Glen Edward Foster Univ. of British Columbia, Kelowna, BC, Canada

Jan Marie Foster North Greenville Univ., Tigerville, SC

Joseph Francis* Louisiana State Univ., Baton Rouge, LA Christopher Schaffer Fry Univ. of Texas Med. Branch, Texas City, TX

Dominique Daniel Gagnon Laurentian Univ., Sudbury, ON, Canada

Gillian A. Gray Univ. of Edinburgh, Edinburgh, United Kingdom

Tsang-Hai Huang National Cheng Kung Univ., Tainan, Taiwan

Yi-Ching Huang National Taipei Univ. of Nursing and Hlth. Sci., Taipei, Taiwan

Richard Ivry Univ. of California-Berkeley, Berkeley, CA

Rafael Jaimes George Washington Univ., Roslindale, MA

Preeti H. Jethwa Univ. of Nottingham, Loughborough, United Kingdom

Fatih Karaaslan Istanbul Hlth. Directorate, Istanbul, Turkey

Shin Kato Japanese Red Cross Nagoya Daini Hosp., Nagoya, Japan

Daniel Kerschensteiner Washington Univ. Sch. of Med. Saint Louis, MO

Yunhee Lee Yonsei Univ., Incheon, Republic of Korea Felix Leroy Columbia Univ. Med. Ctr., New York, NY

Guoshi Li Univ. of North Carolina at Chapel Hill, Chapel Hill, NC

Ashok Litwin-Kumar Ctr. for Theoretical NeuroScience, New York, NY

Yong Lu Northeast Ohio Med. Univ., Rootstown, OH

Costas Andreas Lyssiotis Univ. of Michigan, Ann Arbor, MI

Gerald T. Mangine Kennesaw State Univ., Woodstock, GA

Michael Manookin Univ. of Washington, Seattle, WA

Camila Manrique Univ. of Missouri, Columbia, MO

Isabel Martinez Ferrando Johns Hopkins Sch. of Med., Baltimore, MD

Aleksey V. Matveyenko Mayo Clinic, Rochester, MN

Jamie McClellan Harlan Laboratories, Indianapolis, IN

Derek Michael Miller Univ. of Pittsburgh, Pittsburgh, PA

Richard M. Mortensen Univ. of Michigan Med. Sch., Ann Arbor, MI

Alessandro Moscatelli Bielefeld Univ., Bielefeld, Germany

Abdeldjallil Naceri Bielefeld Univ., Bielefeld, Germany

Cornelius C. Nwora Texas Southern Univ., Houston, TX Izumi Ohzawa* Osaka Univ. Suita, Osaka, Japan

Koichi Ojima NARO Inst. of Livestock and Grassland Sci., Tsukuba, Japan

Lucie Parent Montreal Heart Inst., Montreal, QC, Canada

Bikash Ranjan Pattnaik Univ. of Wisconsin, Madison, WI

Barry M. Prior* William Carey Univ. Coll. of Osteopathic Med., Hattiesburg, MS

Jens C. Rekling Copenhagen Univ., Copenhagen, Denmark

Kerry Lynn Ritchie Univ. of Guelph, Guelph, ON, Canada

Ann R. Rittenhouse Univ. of Massachusetts Med. Sch., Worcester, MA

Sougata Roy Univ. of Maryland, College Park, MD

Ivan Andrew Sammut Univ. of Otago, Dunedin, New Zealand

Beatriz Sanchez-Calvo Facultad De Medicina, Montevideo, Uruguay

Teresa Hinkle Sanders Emory Univ., Marietta, GA

Regien G. Schoemaker Univ. of Groningen, Groningen, The Netherlands

Saravan Kumar Shanmugavelayudam MaxQ Res. LLC, Stillwater, OK

Yosef Gavriel Tirat-Gefen Castel Res. Inc., Rockville, MD Matthijs Van Der Meer Dartmouth Coll., Hanover, NH

Christopher Stuart Walker Univ. of Auckland, Auckland, New Zealand

Tracey L. Weissgerber Mayo Clinic, Rochester, MN

Matthias Tilmann Wolf UT Southwestern Med. Ctr., Dallas, TX

Jun Wu Univ. of Michigan, Ann Arbor, MI

Mingming Wu Emory, Atlanta, GA

Atsushi Yokoi Inst. of Cognitive NeuroSci., UCL, London, United Kingdom

Xiaolei Zhang Florida Hosp., Oorlando, FL

Xin Zhang Mayo Clinic, Rochester, MN

Weibin Zhou Univ. of Michigan, Ann Arbor, MI

New Graduate Student Members

Ashfaqa Ahmad Cardiovascular and Renal lab. of Physiology, Schoo Penang, Malaysia

Tyler Alexander Univ. of Arkansas for Med. Sci., Pine Bluff, AR

Esther Udo Asamudo Univ. of East London, London, United Kingdom

Michael James Capps Univ. of Northern Colorado, Greeley, CO

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Kelli Carter Univ. of South Florida, Tampa, FL

Gwendolyn Davis Univ. of Mississippi Med. Ctr., Jackson, MS

Claire Marie Delucia Univ. of Arizona, Tucson, AZ

Katrin Dias The Univ. of Queensland, Brisbane, QLD, Australia

Eleni Domouzoglou Univ. of Ioannina, Stavraki Ioannina, Greece

Elia Cesar El Hajj Lousiana State Univ. Hlth. Sci. Ctr., Metairie, LA

Daniel Fehrenbach Med. Coll. of Wisconsin, Mequon, WI

Yvonne Maria Fonken Univ. of California-Berkeley, Oakland, CA

Julia Gauberg York Univ., Thornhill, ON, Canada

Kelly Gross Tulane Univ. Hlth. Sci. Ctr., New Orleans, LA

William R. Hamlet Knox Coll., New Brighton, PA

Joseph Ames Herbert Virginia Commonwealth Univ., Richmond, VA

Simon D. Holzapfel Arizona State Univ., Tempe, AZ

Margaret C. Hubbell Loma Linda Univ., Loma Linda, CA

Laxmi Ramchandran Iyer Texas Tech Univ. Hlth. Sci. Ctr., Amarillo, TX Andrew Kadlec Med. Coll. of Wisconsin, Milwaukee, WI

Nalini H. Kulkarni Indiana Univ., Purdue Univ.-Indianapolis, Indianapolis, IN

Hannah Zelia Lefumat Inst. of Movement Sci., Marseille, France

Ryan John Leone Univ. of Toledo, Toledo, OH

Timothy Scott Luongo Temple Univ. Sch. of Med., Philadelphia, PA

Caitlin A. McMenamin Penn State Milton S. Hershey Coll. of Med., Hummelstown, PA

John Ryan Morehead UC Berkeley, Berkeley, CA

Diego Castro Musial Tulane Univ., New Orleans, LA

Haley Nation Penn State Univ., Hershey, PA

Muhammed Nafiu Negedu Univ. of East London, London, United Kingdom

Ashley Newsome Univ. of Mississippi Med. Ctr., Jackson, MS

Hai Ngo Radboud Univ., Nijmegen Heerlen, Netherlands

Ondrej Novak Inst. of Experimental Med., Academy of Sci., Prague, Czech Republic

Maria Okwudili Okata Kingston Univ.-London, London, United Kingdom Kendra Helen Oliver Vanderbilt Univ., Nashville, TN

Daniel John Owens Liverpool John Moores Univ., Liverpool, United Kingdom

Frank Petrassi Univ. of Oregon, Eugene, OR

Zachary K. Pope Oklahoma State Univ., Stillwater, OK

Erica Joan Pruett Vanderbilt Univ., Nashville, TN

Trevi Ann Ramirez Univ. of Texas Hlth. Sci. Ctr. San Antonio, San Antonio, TX

Brandon Roberts Univ. of Florida, Gainesville, FL

Olvin O. Rosado Univ. of Puerto Rico, Dorado, Puerto Rico

Lawrence Kendall Satterfield Univ. of California-San Diego, San Diego, CA

Larry Scott Baylor Coll. of Med., Houston, TX

Khaled Ali Shadi Faculty of Physical Education, Mansoura Univ., Mansoura, Egypt

Michelle Shero Univ. of Alaska-Anchorage, Anchorage, AK

Robert James Shute Univ. of Nebraska-Omaha, Omaha, NE

Hua-Chun Sun Univ. of Birmingham, Birmingham, United Kingdom

Vinicius Torsani Univ. of Sao Paulo, Sao Paulo, Brazil David Michael Vidmar Univ. of California-San Diego, San Diego, CA

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Book Review

Diving Seals and Meditating Yogis: Strategic Metabolic Retreats

Robert Elsner

Chicago, IL: The Univ. of Chicago Press, 2015, 192 p., \$32.50 (Hardback) ISBN: 9780226246710

Physiological responses to breath-hold diving are relevant to all placental eutherian mammals (including humans) since the first major event in our independent lives is the breath-hold dive we make during birth. This slender book gradually builds up to a final chapter discussion of this fact and its many important implications. Along the way, it provides a logically constructed, carefully thought out, interesting, and thought-provoking review and commentary on many aspects of the broad subject of the patterns, mechanisms, and controls underlying the reductions of metabolic rate that occur as normal parts of the life histories of many kinds of animals faced with a range of significant environmental challenges. Diving seals and meditating yogis are two of the subjects; other groups discussed in some detail include hibernating mammals, aspects of human adjustments to both high altitudes and long-term moderate hypothermia, and professional human breath-hold divers (now almost all technologically obsolescent). The overall perspective is that of a medically trained, clinically oriented physiologist who recognizes the many values and important insights deriving from comparative approaches. Biodiversity discussed in the book is almost entirely vertebrate, mainly mammalian, with occasional references to fishes, reptiles, and birds. Relevant invertebrates are mentioned in a few places.

Robert Elsner is a major figure in the recent history of studies of diving mammal physiology, specifically of pinnipeds (phocid seals and otariid sea lions; cetaceans are mentioned in passing in a few places – sirenians, sea otters, beavers, muskrats, and their relatives are absent). His contributions to their study have been numerous, diverse, and important. He has worked with or mentored almost everyone of importance in the last 75 years of the field, starting with Per Scholander and Larry Irving. His doctoral students, postdocs, and collaborators are major contributors to the extensive references used in the book. The book is partly an overview of the work of the Elsner group. The central sets of physiological, biochemical, endocrinological, and neurophysiological processes reviewed relate to metabolic downregulations, termed strategic metabolic retreats. Several specialized aspects of these are also discussed in interesting and unusual ways. These aspects include effects of long-term repeated intermittency of both respiration and blood flows on the major organ systems of seals and mammals generally. A chapter is devoted to conditioning phenomena and processes, and their biomedical implications with respect to cardiovascular functions, particularly heart failure.

Some aspects of the subject matter are absent from this discussion. Evolutionary processes and perspectives are mentioned occasionally, but cladistically based phylogenetic considerations are not included. It would be interesting to consider many of the topics from the perspective of their being manifestations of multiple convergent morphological and functional evolutionary homoplasies rather than putative homologies. Systems biological approaches to underlying molecular genetic and genomic relationships are not discussed. Two recent reviews provide useful supplementation to this volume (1, 2).

Elsner's writing style is elegant, literary, clear, and understated. Along with these good aspects, the text shows signs of needing some more copyediting to reduce repetitions and to promote better longitudinal integration of the text.

This reviewer agrees with the comments of Terrie Williams in the jacket copy for this book: "... The combination of amazing science with human health implications makes this book a natural for engaging students across biology, medicine and beyond." ●

References

1. Storey KB. Regulation of hypometabolism: insights into epigenetic controls. *J Exp Biol* 218: 150-159, 2015.

2. van Breukelen F, Martin SL. The hibernation continuum: physiological and molecular aspects of metabolic plasticity in mammals. *Physiology* 30: 273-281, 2015.

Malcolm S. Gordon

Department of Ecology and Evolutionary Biology University of California Los Angeles

Positions Available

Assistant Professor: The Department of Molecular & Cellular Physiology invites applications for a tenuretrack position at the level of Assistant Professor. Successful applicants will be expected to develop an independent, nationally funded research program and to contribute to the education mission of the Department. Research areas are open, but preference will be given to individuals with an interest and record of achievement in the cardiovascular sciences. Information about the departmental research focus is available at http://www. shreveportphysiology.com. A generous startup package and appropriate space will be offered. Applicants should have a Doctoral degree and relevant postdoctoral experience. Applications will be reviewed as they are received until the position is filled. Send curriculum vitae and names of three references to D. Neil Granger, PhD, Boyd Professor & Head, Department of Molecular & Cellular Physiology, LSU Health Sciences Center, 1501 Kings Highway, Shreveport, Louisiana, 71130-3932; FAX: 318-675-6005; e-mail: dgrang@lsuhsc.edu. LSUHSC-Shreveport is an equal-opportunity employer, and all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability status, protected veteran status, or any other characteristic protected by law.

Assistant Professor: Outstanding scientists are invited to apply for a tenure-track faculty position in the Department of Human Physiology at the University of Oregon. We are seeking individuals who have research interests that complement existing areas of excellence in integrative and translational physiology impacting endocrine, environmental, cardiovascular, metabolic, muscle, and respiratory physiology. To be considered for a tenure track position at the Assistant Professor level, applicants must hold a PhD and/or MD degree with appropriate (2-3 years) postdoctoral research experience. Successful candidates must either currently have or demonstrate potential to obtain significant extramural research funding such as NIH, DoD, or AHA. Previous university-level teaching experience is highly desirable. Special consideration will be given to candidates who are broadly trained, integrative or translational, and demonstrate strong backgrounds in one or more of the following areas: 1) immunology and/or inflammation as they relate to cardiovascular and metabolic pathophysiology, 2) metabolism and/or mitochondrial function in human health and disease, and 3) chronic adaptation to exercise and/or environmental stressors. Research, which is conducted largely or partly in human subjects, is highly desirable. The successful candidate is expected to establish a vigorous research program supported by extramural funding, engage in collaborative research endeavors with existing faculty members, contribute to the mission of the department in undergraduate and graduate education, and engage in departmental and university service. The successful candidate will also have the ability to work effectively with faculty, staff, and students with diverse backgrounds. Competitive salary support and start-up funds will be provided. The University of Oregon is an AAU research institution and a member of the Pac-12 Conference with an enrollment of 24,000. Core research facilities on campus include a newly built Transgenic Mouse Facility, a Microimaging Core, excellent Genomic Facilities, a Neuro-Imaging center with a newly acquired 3-Tesla full-body MRI system, as well as the Evonuk Environmental Physiology Core and Bowerman Sports Science Clinic. Conveniently located 110 miles south of Portland, the Eugene metro area population (250,000) is in a region noted for its high quality of life and progressive cultural environment. Eugene is about an hour's drive from the scenic Pacific Coast and within hours of outstanding outdoor recreational activities of the Cascade Mountains. Applicants should prepare a curriculum vitae, a statement describing their research goals, a statement of their teaching philosophy, three representative publications, and three letters of reference and apply online for our position at https:// academicjobsonline.org/ajo/jobs/5955. Questions about the application process should be addressed to Dr. John Halliwill (halliwil@uoregon.edu). To ensure consideration, please submit application materials by November 15, 2015. The position will remain open until filled. The UO is an EO/AA/ADA institution committed to cultural diversity. The University encourages all qualified individuals to apply and does not discriminate on the basis of any protected status, including veteran and disability status.

Assistant Professor: The Department of Physiology at Midwestern University Glendale (*http://www. midwestern.edu*) invites applications for a tenure-track faculty position in physiology at the rank of Assistant Professor. The department (*http://www.midwestern. edu/programs-and-admission/az-osteopathic-medicine/ more-about-the-program/departments/physiology.html*) currently serves several healthcare education programs including Osteopathic Medicine, Podiatric Medicine, Pharmacy, Physical Therapy, Physician Assistant, Nurse Anesthesia, Dentistry, Optometry, Biomedical Science, and Veterinary Medicine. The successful applicant will be expected to assist with our team-teaching approach in these health education programs. Faculty research interests include genistein and intestinal function in diabetes and cystic fibrosis, diabetes and exercise training, mechanisms regulating tendon extracellular matrix, caveolins and insulin signaling, neurophysiology and evolution of vocal control, water balance in desert arthropods, and the effects of oxygen on animal physiology and evolution. Candidates whose research areas complement current research strengths are encouraged to apply. Start-up funds and laboratory space are available, and the successful applicant will be expected to establish and maintain a successful research program. Individuals must have a PhD degree in Physiology or a related field. Previous research experience at the postdoctoral level is required, and prior teaching experience is preferred. The position will remain open until filled. Applicants should apply online at www.midwestern.edu. In the Quick Links section, select "Employment at MWU," then "Employment Opportunities." You may search for the job posting by specifying "Faculty" for the job category, "Physiology" as the search term, and "Arizona" for the location. You may also enter the requisition number MR11406 and click "Search." Your online application should include a cover letter, curriculum vitae, statement of teaching philosophy (1-2 pages), and a statement of current and future research goals (1-2 pages). Please include the names and contact information of at least three professional references. For more information about this position, contact Michael Quinlan, PhD, at *mquinl@* midwestern.edu.

Assistant Professor: The Sam Houston State University Department of Biological Sciences seeks applicants for a Visiting Faculty position in Cell/Molecular Biology at the rank of Assistant Professor that combines teaching experience with an opportunity for research. Contingent on available funding, this position is ideally suited for a candidate who is seeking a postdoctoral position with expanded teaching responsibilities while still maintaining an active research program. The successful applicant will teach classes at the introductory and advanced levels, will have the opportunity to move doctoral work to publication, and acquire additional skills through the initiation of new research projects in collaboration with current faculty members. To be considered for this position, applicants will need to apply online at https://shsu.peopleadmin.com/. Send an application packet (a single PDF file) that includes a letter of intent describing qualifications, a most current CV including references with full contact information to Dr. James Harper (Search Committee Chair; jmharper@ shsu.edu) and Dr. Chad Hargrave (Department Chair; cwhargrave@shsu.edu), Department of Biological Sciences, Sam Houston State University, Huntsville, Texas 77341-2116. Sam Houston State is located in historic Huntsville, one quarter of the way from Houston to Dallas, at the boundary between the Piney Woods region of East Texas and the Prairies and Lakes region of Central Texas. The university has an enrollment of approximately 19,000 students and a faculty of 1,000. Sam Houston State University is an Equal Opportunity/Affirmative Action Plan Employer and smoke-/drug-free workplace. All qualified applicants will receive consideration for employment without regard to race, creed, ancestry, marital status, citizenship, color, religion, sex, national origin, age, veteran status, disability status, sexual orientation, or gender identity. Sam Houston State University is an "at will" employer. Security-sensitive positions at SHSU require background checks in accordance with Education Code 51.215.

Assistant Professor: The Division of Exercise Physiology, West Virginia University School of Medicine (http://medicine.hsc.wvu.edu/ep) invites applications from outstanding candidates for one new research track faculty (12 month) position. Appointment will be made as a Research Assistant Professor in Exercise Physiology, available on or about November 1, 2015. The candidate will work in the laboratory of and closely with Stephen E. Alway, PhD, Senior Assistant Dean for Research and Graduate Education, Executive Chairperson for the Department of Human Performance & Applied Exercise Science, and Chair of the Division of Exercise Physiology, West Virginia University School of Medicine. The successful candidate will contribute to both the research and the teaching missions of the Division of Exercise Physiology, which is ranked 7th nationally by the Chronicle of Higher Education. Candidates with 7 or more years of postdoctoral training and who have a strong publication record in muscle biology are encouraged to apply. A minimum of 3 years of experience training masters and doctoral students in muscle

biology is essential. The successful application will have a PhD or a PhD/MD with peer-reviewed evidence (publications) that addresses the role of SIRT1 in skeletal muscle. Areas of interest include but are not limited to modern approaches to study SIRT1 in muscle function and fatigue, and skeletal muscle satellite cells in repair and regeneration in aging. Candidates are expected to be able to document competency in physiology, biochemistry, and molecular biology approaches such as miRNA, siRNA, cell transfections, PCR, Western blots, immunocytochemistry, flow cytometry, nextgeneration sequencing technology, and muscle stemcell isolation and culture techniques. Prior work using genomic and bioinformatic analyses, and the ability to generate and maintain transgenic/knockout mouse models is highly desirable. The successful candidate will have an enthusiasm for science, outstanding work ethics, and be an ambitious scientist and good teacher. The candidate will also demonstrate success/potential for obtaining extramural funding for research, and have strong peer-reviewed publications. This appointment is offered in accordance with the provisions of West Virginia University as described in the Faculty Handbook (http://www.wvu.edu/«sim2»acadaff/fac/Handbook/). A competitive salary will be provided. West Virginia University is a comprehensive Carnegie-designated Doctoral Research-Extensive public institution, with approximately 29,000 undergraduate and 6,000 graduate students. Morgantown has 58,000 residents and is rated as one of the best small towns in the U.S., and it is located a short distance from Pittsburgh, Baltimore, Columbus, and Washington, DC. For more information about Morgantown, the West Virginia University Health Sciences Center and the School of Medicine, please visit the following websites: http://morgantown.com/ overview.htm; http://www.hsc.wvu.edu/ and http://www. hsc.wvu.edu/som/. Qualified individuals should submit a complete curriculum vitae, a brief description of teaching credentials, evidence of research productivity, and the names and addresses (including e-mail) of three references to Dr. Emidio E. Pistilli, Chair of Search Committee, Division of Exercise Physiology, West Virginia University School of Medicine, Robert C. Byrd Health Sciences Center, P.O. Box 9227, Morgantown, WV 26506-9227. Review of applications will begin immediately and continue until the position is filled. Employment offers are contingent on the satisfactory outcome of standard background screening and evidence of the ability to lawfully work in the U.S.

Please send all application materials to Dr. Pistilli (*epistilli2@hsc.wvu.edu*) and copy the application to Ms. Rebecca Gutta-Miller (*rgmiller@hsc.wvu.edu*). Questions about the position can be directed to Dr. Alway (*salway@ hsc.wvu.edu*). WVU is an Equal Opportunity / Affirmative Action Employer. WVU Health Sciences Center is a smoke-free campus. West Virginia University is the recipient of an NSF ADVANCE award for gender equity.

Assistant/Associate Professor: The Department of Surgery's Visible Heart Research Laboratory (University of Minnesota) seeks an outstanding scientist with excellent leadership qualities to serve as an assistant or associate professor (tenure track) and a researcher in the areas of cardiac device development and testing, multi-modal cardiac imaging, pathophysiology and aging, novel heart/lung preservation methodologies, and 3D computational modeling of heart/lung pathologies. This individual is expected to be strongly committed to interprofessional, interdisciplinary, and collaborative research in this intensive, hands-on research environment. The candidate should have a MD, PhD, and/or DVM, with strengths in Physiology, Biomedical Engineering, or equivalent field, as well as a refereed journal publication record, proven teaching experience, and recognition for research. The successful candidate will be expected to take an active role in teaching (within the laboratory and in the classroom), student mentoring (graduate and undergraduate students), and administrative duties. The candidate additionally will be expected to apply for extramural funding. Review of applicants will begin immediately and continue until the position is filled. Additional information about the Visible Heart Laboratory can be found at: www.vhlab.umn.edu. Specific questions may be directed to the search committee at *mahre002@umn.edu*. Applicants must submit 1) cover letter, 2) curriculum vitae, 3) teaching interests and philosophy, 4) three letters of recommendation, 5) contact information for two to three professional references, 6) statement of research objectives, and 7) current research support or submitted proposals. Please send all materials to the search committee at *mahre002@umn.edu*. The University recognizes and values the importance of diversity and inclusion in enriching the employment experience of its employees and in supporting the academic mission. The University is committed to attracting and retaining employees with varying identities and background. The University of Minnesota provides equal access to and

opportunity in its programs, facilities, and employment without regard to race, color, creed, religion, nation origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. Any offer of employment is contingent upon the successful completion of a background check. The University of Minnesota, Twin Cities is among the largest public research universities in the country, offering a multitude of opportunities for study and research. Located in the heart of one of the nation's most vibrant and diverse metropolitan communities, employees benefit from extensive partnerships with world-renowned health international corporations, government centers, agencies, as well as arts, nonprofit, and public service organizations.

Assistant/Associate Professors: The Department of Physiology and Pharmacology at the University of Toledo College of Medicine and Life Sciences (UTCOM), under new leadership, is poised for significant growth and expansion of its current research portfolio. Applications are hereby solicited for multiple faculty positions. Candidates will be considered for all ranks from Assistant Professor to Full Professor. Candidates should have a PhD and/or MD degree, and preferably extramural research funding from the NIH or NSF. In the interest of expanding the scope of research within the Department, we welcome a variety of research topics that are not limited to but complement and grow the current funded research strengths within the Department. These may include any research themes in molecular medicine related to cardiovascular, metabolic, and renal diseases. Additional information about the Department can be found at the following website: https://www.utoledo.edu/ med/depts/physpharm/index.html. The Department has a Molecular Physiology Core facility with state-of-theart equipment for physiological studies. Faculty also have access to a variety of shared cores for advanced imaging and "-omic" studies. Successful candidates will receive competitive salaries, start-up packages, and newly renovated laboratory space. Besides excellent research incentive policies and retirement options, the University offers tuition subsidies for graduate students and competitive per diem rates for housing and conducting experimental model organism research. The city of Toledo is within the Northwest Ohio region, which has very reasonable housing and living costs and excellent school districts. Applicants should

submit curriculum vitae, names of three referees, and a statement of research interest to *https://jobs.utoledo.edu*. Applications will be considered until the positions are filled. The University of Toledo is an equal-access, equal-opportunity, affirmative-action employer and educator. Apply at *http://www.Click2Apply.net/d9cv9s56xs*.

Assistant/Associate Professor: The Marine Research Station of the Institute of Cellular and Organismic Biology (ICOB), Academia Sinica, Taiwan, seeks outstanding scientists to join its faculty. Academia Sinica, a premier research institution in Taiwan, is devoted to basic and applied research. In ICOB, there are 25 research groups with 4 located in the Marine Research Station (http://icob.sinica.edu.tw/index_en.php). We invite applications for tenure-track faculty positions at levels of Assistant, Associate, or Full Research Fellow (equivalent to Assistant, Associate, and Full Professors, respectively). Successful candidates are expected to develop high-quality independent research programs in one of the following areas of physiology: endocrinology, genetics, immunology, environmental adaptation of marine/freshwater animals, marine biotechnology or marine biology. Applicants should have a PhD, relevant postdoctoral experience, and a strong record of research accomplishment. ICOB provides substantial financial support for research, is involved actively in international collaborations, and maintains strong interactions with local universities. The Marine Research Station provides a highly interactive research environment with state-of-the-art core facilities in aquaculture, imaging, genomics, proteomics, and bioinformatics. Applicants should submit curriculum vitae, summary of research accomplishments, research plan, copies of major publications, and three letters of recommendation to: Tao-Shih Hsieh, PhD, Director, Institute of Cellular and Organismic Biology, Academia Sinica, 128, Section 2, Academia Road, Nangang, Taipei 11529, Taiwan. Electronic applications may be sent to *charity@gate.sinica*. edu.tw. Review of applicants will begin immediately until the positions are filled. Visit our website (http:// icob.sinica.edu.tw/en/index.aspx) for more information or contact Ms. Charity Chen (charity@gate.sinica.edu.tw).

Assistant/Associate/Full Professor: The Program in Physical Therapy in the University of Minnesota's Medical School is inviting applications for a full-time tenured or tenure-track faculty position at a rank commensurate with experience (Assistant Professor through Professor). We seek the following faculty. An established independent scientist to lead studies in basic, clinical, outcomes research, or population science in an area related to rehabilitation science. Join and be supported by a group of committed and active scientists with research expertise in the following neuroscience/neurorehabilitation, areas: clinical biomechanics, exercise physiology, muscle plasticity, and oncology/lymphology. The applicant should have a proven ability to develop collaborative research programs and will play a primary role in building a research component within their expertise in both the Program in Physical Therapy and Rehabilitation Science Graduate Program. This faculty member should have a proven track record in teaching in their area of expertise and established experience as a faculty member with service and leadership within physical therapy. The faculty member will play a role in mentoring junior investigators and fellows, and in teaching graduate students (DPT and Rehabilitation Science). Teaching expertise in the area of gross anatomy is highly preferred. Applicants must hold both a degree in physical therapy and a PhD or equivalent degree from an accredited university. A strong research record as an independent investigator is preferred. This includes evidence of publishing in peer-reviewed journals and being awarded NIH/NSF extramural grant funding. The faculty position has potential to be tenured at the Associate Professor/Professor level or tenure-track at the Assistant Professor level. The Program in Physical Therapy is an academic unit holding 18 faculty lines with a 74-year history within the School of Medicine. The Program upholds a strong national reputation with regard to quality of graduates, NIH funding, and scientific productivity. Degree programs include Doctor of Physical Therapy (DPT), PhD/MS in Rehabilitation Science, joint DPT/PhD, and an accredited Geriatric Clinical Residency. The University of Minnesota is a major public research institution with substantial opportunities for collaborative work. Physical therapy faculty has well established interdisciplinary connections with Neurology, Neuroscience, Psychiatry; Radiology, Orthopedics, Integrative Biology & Physiology, Biochemistry, Molecular Biology & Biophysics, Biomedical Engineering, Mechanical Engineering, and the Center on Aging. In addition, strong clinical and research relationships exist with community partners. Core resources at the University also include the Center for Magnetic Resonance

Research, the Clinical Translational Science Institute, and the Minnesota Supercomputing Institute. For further information please e-mail or call: Bernadette Gillick, PhD, MSPT, PT Search Committee Chair, *Gillick@umn.edu*, 612-626-3121.

Chair: The Texas A&M University Health Science Center College of Medicine is seeking applications and nominations for Chair of the Department of Medical Physiology. The Department of Medical Physiology is one of five Basic Science departments in the College of Medicine, and we seek a distinguished scientist with an outstanding research record and the ability to lead a growing department toward greater achievements. Nationally recognized research areas in the department include cardiac, vascular, and lymphatic physiology, and pathophysiology, inflammation and immunity, reproductive developmental and biology, and mechanobiology (see department website: http://medicine. tamhsc.edu/mphy). Faculty members in the department currently receive substantial research support from the NIH, NSF, American Heart Association, and NASA, as well as from industry sources. The department's mission includes discovering the mechanisms underlying cardiovascular and lymphatic disorders in an effort to develop effective therapies, and training the next generation of scientists and physicians. PhD and MD/ PhD training within the College of Medicine is facilitated by a multidisciplinary Medical Science Graduate Program that provides several tracks to accommodate student research interests. Texas A&M University, recently ranked the 20th Best College in America by Money Magazine and 1st as "Great Schools You Can Actually Get Into," provides unique opportunities for multidisciplinary research between the College of Medicine and the College of Veterinary Medicine, Dwight Look College of Engineering, Texas Institute for Preclinical Sciences, the Irma Lerma Rangel College of Pharmacy, and various clinical partners. Information about Texas A&M Health Science Center can be accessed at *http://tamhsc.edu*. Candidates must have a PhD and/ or MD, a robust record of past and current extramural funding, as well as excellent administrative leadership and management skills. The successful candidate will have a research program that complements the strengths and mission of the department. Furthermore, we are seeking an individual who pursues academic excellence through diversity at all levels and is committed to fostering an environment in which faculty, staff, and students from a variety of backgrounds, cultures, and personal experiences are welcomed and can thrive. Candidates should apply online at *http://medicine.tamhsc*. edu/chair-search/index.html. The online application will require a cover letter; curriculum vitae; a 2- to 5-page career summary that describes the applicant's research, educational, and administrative background along with their leadership vision; and the names and contact information for three references. Review of applications will begin in November, 2015. Texas A&M University and its Health Science Center are headquartered in the twin cities of Bryan and College Station, with a population of more than 190,000, and are conveniently located in a triangle formed by Dallas, Houston, and Austin. The area boasts a low cost of living and a sun-belt environment, and is consistently ranked among the best places to live in the country. Texas A&M has more than 50,000 professional, graduate, and undergraduate students enrolled. With research expenditures at Texas A&M totaling more than \$700 million annually, the university ranks 23rd nationally. With an endowment valued at more than \$5 billion, the university ranks 4th among U.S. public universities and 10th overall. The Texas A&M University System is an affirmative-action/equalopportunity employer dedicated to the goal of building a culturally diverse and pluralistic faculty and staff committed to teaching and working in a multicultural environment. We strongly encourage applications from women, minorities, individuals with disabilities, and covered veterans. Texas A&M University is aware that attracting and retaining exceptional faculty often depends on meeting the needs of two-career couples and having policies that contribute to a good work-life balance. For more information, please visit http://dof. tamu.edu/content/faculty-work-life.

Vice Dean: The Stritch School of Medicine seeks a senior-level administrator and scholar to provide vision and leadership around the full depth and breadth of the school's research mission as it builds its extramural funding base and expands its reputation for scholarly excellence. Internally, the position works closely with the Dean, Dean's staff, department chairs, research institute directors and administrators, and the central administration of the University. Externally, the position works closely with the leadership of SSOM's affiliated hospitals and agencies; external academic, industrial, and community research partners; and the various funding, regulatory, and accrediting bodies of SSOM. Loyola

University Chicago offers exceptional, comprehensive benefits and excellent work-life balance. Loyola is an equal-opportunity/affirmative-action employer with a strong commitment to hiring for our mission and diversifying our faculty and staff. Qualifications: MD, DO, MD/PhD, or PhD with experience in a wide spectrum of biomedical research; national recognition as a scholar; extensive experience with federal funding agencies and regulatory compliance; experience with corporatefunded research, including both laboratory and clinical; experience with industry-university partnerships, intellectual property, and entrepreneurship is desirable; management experience in an academic environment; commitment to promoting a culture that nurtures diverse forms of inquiry and scholarship; demonstrated evidence of strong interpersonal and communications skills; experience in planning, implementing, and sustaining comprehensive research centers or programs is highly desirable; strong commitment toward cultural diversity and equal opportunity. Apply at: careers.LUC. edu/applicants/Central?quickFind=58082.

Division Director: The National Institute of General Medical Sciences (NIGMS), a major research component of the National Institutes of Health (NIH) and the Department of Health and Human Services (DHHS), is seeking exceptional candidates for the position of Director, Division of Pharmacology, Physiology, and Biological Chemistry (PPBC). Information about PPBC is available at http://www.nigms.nih.gov/about/overview/ pages/ppbc.aspx. PPBC has supported many research findings that have led to improving the molecular-level understanding of fundamental biological processes and discovering approaches to their control. In FY 2015, the Division of Pharmacology, Physiology, and Biological Chemistry had an annual budget of about \$405 million and is one of five scientific divisions within the NIGMS. PPBC is organized into two branches and has 11 scientific staff members who serve as program officers. One branch is focused on the study and development of biological catalysts, including living organisms, for the production of useful chemical compounds, medicinal or diagnostic agents or probes of biological phenomena, and the other branch is focused on understanding the total body response to injury, including biochemical and physiological changes induced by trauma, as well as the effects of drugs on the body, the body's effects on drugs, and how the effects of drugs vary from individual to individual. The division director reports to the NIGMS director and is a member of the NIGMS senior leadership team, which helps set policies and priorities for the Institute. Research supported by PPBC takes a multifaceted approach to problems in pharmacology, physiology, biochemistry, and biorelated chemistry that are very basic in nature or have implications for more than one disease category. The Director of PPBC plans and directs a program of research grants and contracts, analyzes national research efforts on molecular-level understanding of fundamental biological processes, drug action, and mechanisms of anesthesia, new methods and targets for drug discovery, advances in natural products synthesis, biological catalysis, clinical pharmacology, and trauma and burn injury. He/she makes recommendations to assist the National Advisory General Medical Sciences Council or other advisory committees or groups, identifying the need for research in the areas of pharmacology, physiology, biochemistry, and bio-related chemistry, and advises universities, other centers of medical research and professional and lay organizations about research needs and requirements. This position offers important opportunities to set scientific priorities, lead change, and improve the research enterprise. Qualifications: Candidates must possess an MD, PhD, or equivalent degree in a field relevant to the position. The ideal candidate will have considerable research experience and will possess a broad spectrum of scientific knowledge related to the NIGMS mission. In addition, candidates should possess recognized research management and leadership abilities. A strong understanding of pharmacology, physiology, biochemistry, and chemistry that deepens the understanding of biology is desired. The position will be filled under a Title 42 (f) excepted service appointment. Salary/Benefits: Salary is competitive and will be commensurate with the experience of the candidate. A recruitment or relocation bonus may be available, and relocation expenses may be paid. A full package of Federal Civil Service benefits is available, including retirement, health and life insurance, longterm care insurance, leave, and a Thrift Savings Plan (401K equivalent). The successful candidate is subject to a background investigation and financial disclosure requirements. How to Apply: Applicants must submit a current curriculum vitae, bibliography, copy of degree, and full contact details for three references. In addition, applicants are asked to prepare two statements: a vision statement and a statement that addresses the specific qualification requirements (please limit the statements to 2 pages each). NIGMS will be accepting applications starting September 8, 2015 and plans to have the position open for at least 45 days, but the application process will not close until a candidate has been selected. Please send your application package to *PPBCDirectorApplicants@nigms.nih.gov*. You may contact Linda Sarden with questions about this vacancy at 301-594-0534. HHS and NIH are equal-opportunity employers

Postdoctoral Fellow: A postdoctoral research position is available in the laboratory of Dr. Scott Levick at the Medical College of Wisconsin to study the role of neuropeptides in the development of heart failure. The candidate will develop research projects related to neuropeptide regulation of mast cell, fibroblast, and cardiomyocyte function, and how these neuropeptide/ cell interactions promote adverse remodeling of the heart and lead to heart failure. Qualifications include a PhD or MD in cardiovascular science or a related field. Applicants should be experienced in cell culture and molecular biology techniques, including mammalian cell transfections and real-time PCR. Applicants should also have experience working with animal models of disease. Special consideration will be given to individuals who also have experience in small animal surgical techniques, especially transaortic constriction and coronary artery occlusion. Salary will be commensurate with relevant experience and based on established guidelines for postdoctoral fellows set by the NIH, and includes an excellent benefits package. Applications should be sent to slevick@mcw.edu and should include a brief cover letter highlighting the applicant's research experience and interests, along with full curriculum vitae and the names and contact information of three referees.

Postdoctoral Fellow: The Drazen/Park laboratory has an immediate opening for postdoctoral fellow positions in the Molecular and Integrative Physiological Sciences program at the Harvard T.H. Chan School of Public Health, in Boston. The focus of the research conducted in the lab is to examine the processes by which mechanical compressive stress imposed on the airway epithelium, such as the stress that occurs during bronchoconstriction, initiates airway remodeling. The tools used in the lab include biochemical and biophysical approaches. The goals of our research are 1) to understand collective migration of the airway epithelium in asthma (in collaboration with Dr. Jeffrey Fredberg; related publication: Park et al. Unjamming and cell shape in the asthmatic airway epithelium. Nature Materials, advanced online publication, 2015 Aug, 03); 2) to link biophysics to biological functions of airway epithelial cells in asthma; and 3) to understand the role of airway epithelial cells in airway remodeling of asthma using in vitro compressive system and in vivo models (related publication: Park et al. TF-bearing exosome from mechanically-stimulated human bronchial epithelial cells in vitro and in vivo. J Allergy Clin Immunol, 2012). For more information, please visit *http://www.hsph*. harvard.edu/park-lab/. Applicants must hold a recent MD or PhD in Biomedical Engineering, Molecular Biology, Cell Biology, Biochemistry, or a related field. Previous experience in lung biology and mouse models of asthma is desirable but not required. Up to 4 years of support is available. Please send curriculum vitae, a brief statement of goals, and the names, e-mail addresses, and phone numbers of three references to Jin-Ah Park at parklabhsph@gmail.com.

Postdoctoral Fellow: A postdoctoral fellow position is available in the laboratory of Dr. Carol A. Witczak at East Carolina University (Greenville, NC) to conduct and support biomedical research in the fields of Type 2 diabetes, exercise, skeletal muscle metabolism, and calmodulin kinase signal transduction pathways. The Witczak laboratory utilizes a wide range of multidisciplinary approaches, including transgenic and knockout mouse models; in vivo skeletal muscle gene transfer techniques; radiolabel tracer studies; in vivo, in situ, and ex vivo skeletal muscle contraction experiments; enzyme activity assays; metabolite assays; as well as other biochemical assays such as immunoblotting and immunohistochemistry. Candidates must hold a PhD, MD, or MD/PhD in physiology, biochemistry, molecular biology, exercise science, or a related field. Previous experience in skeletal muscle physiology and mouse models of Type 2 diabetes is desirable but not required. Interested candidates must be able to work independently, be self-motivated, and have at least one first-authored paper in a peer-reviewed journal at the time of application. Salary will be commensurate with relevant experience and based on established guidelines for postdoctoral fellows set by the National Institutes of Health. Interested applicants should submit a brief cover letter highlighting the applicant's research experience and interests, along with full curriculum vitae and the names and contact information of three individuals who can be contacted for a professional

reference. Application materials should be uploaded to the East Carolina University Jobs website at *ecu. peopleadmin.com/applicants/Central?quickFind=78802*. East Carolina University is an equal-opportunity and affirmative-action employer. All qualified applicants will receive consideration for employment without regard to their race/ethnicity, color, genetic information, national origin, religion, sex, sexual orientation, gender identity, age, disability, political affiliation, or veteran status. Individuals requesting accommodation under the Americans with Disabilities Act Amendments Act (ADAAA) should contact the Department for Disability Support Services at (252) 737-1016 (voice/TTY).

Postdoctoral Fellow: A postdoctoral position is available immediately in the Coetzee laboratory at NYU School of Medicine, New York City. A large component of our research focuses on the role(s) of ATP-sensitive K⁺ channels in cardiovascular pathophysiology. Our recent data point to a role for abnormalities in KATP channel trafficking during cardiac ischemia, with rescue by ischemic preconditioning. We are looking to expand into this area. We employ a wide variety of techniques, including genetic mouse models, isolated heart perfusions, biochemistry (immunoblotting, coimmunoprecipitation, and surface labeling), molecular biology, cell biology, proteomics, immunostaining, and patch clamping. Preference will be given to applicants with experience in biochemistry and/or the assessment of cardiac injury in rodent models. Relevant training in channel physiology is available. The candidate should have excellent oral and written communication skills, and will be expected to assist in study design and analysis, present research findings at conferences, and compose manuscripts. Send a curriculum vitae and a cover letter describing research interests and experience to *william.coetzee@nyu.edu*. NYU is an equalopportunity employer. The U.S. News & World Report 2016 "Best Graduate Schools" list ranks NYU School of Medicine at no. 14 for research out of 130 medical schools nationwide.

Postdoctoral Fellow: Immediate opening for a Postdoctoral Fellowship position in the Kirwan Laboratory at the Cleveland Clinic and Lerner Research Institute. Individuals with experience and knowledge of techniques in molecular biology and biochemistry, and with expertise in cell, animal, or human models of diabetes and obesity are encouraged to apply. Must be familiar with cultivation of multiple cell lines, Western blotting, and RNA-based methods including quantitative PCR and Northern blotting, lenti-, retro-, and adenoviral systems of shRNA delivery, expression of exogenous proteins, and the Casp9/Crispr system. Experience in murine pancreatic islet isolation and analysis is an advantage. In addition, experience in isotope tracer methodologies would be beneficial. Excellent writing skills are essential. The successful candidate will be expected to design, implement, and manage research projects addressing insulin secretion and nutrient regulation in obesity and diabetes. The appointee will be expected to take advantage of this career opportunity to develop skills in manuscript publication and grantsmanship. PhD or MD is required. Send cover letter and CV to: John P. Kirwan, PhD; Department of Pathobiology; Lerner Research Institute/ NE40; Cleveland Clinic; 9500 Euclid Ave.; Cleveland, OH 44195; (216) 444-3412; kirwanj@ccf.org.

Research Scientist: Plato BioPharma, Inc. (PBI) is a contract research organization that provides expert preclinical research services in the cardiovascular, renal, pulmonary, and hepatic therapeutic areas. Included among our partners are major pharmaceutical and biotech corporations as well as leading academic researchers. PBI is headquartered in Westminster, CO between Boulder and Denver and is minutes from the front range of the Rocky Mountains. We are seeking a highly motivated and tenacious individual to join our multi-disciplinary drug discovery efforts. With a successful history of small-molecule drug discovery and a vibrant and exciting culture, PBI offers a stimulating environment to grow and participate in the discovery of therapeutics to treat life-threatening diseases. Looking for a PhD scientist who is hands-on with verifiable experience with translating client research goals into executable study protocols that meet client needs. The right candidate will be an accomplished "do-er" with strong and applicable general in vivo skills and biotech or big pharma experience who wants to make an immediate impact by working in a small, exciting CRO where we focus on DOING science. Scientific acumen/ project involvement: Leads studies to achieve client commitments in communication, scientific expectations, and contractual deliverables; responsible for overall study management AND conduct of assigned studies, including study timelines and quality standards; maintains and drives study schedule to ensure completion and client satisfaction (from protocol writing, sample receipt, required analyses of data, and final report timelines); participates extensively in scheduling of appropriate resources (equipment & personnel), including lab support, methods development, and reporting to meet project goals; advises, leads research associates and/or members of study teams in the initiation and execution of laboratory experimentation, considering economic and safety factors. Responsibilities: Designs, implements, and executes efficacy studies, including compound formulation, animal handling and dosing, and blood and tissues collection; conducts directed and independent experiments and performs measurements of hemodynamic, cardiac, pulmonary, and/or renal function in rodents; performs all aspects of rodent testing, dosing, surgeries, and tissue collection; recognizes fundamental anomalies in data points, inconsistent results, and identifies issues in experiments; interprets experimental outcomes; responsible for documentation, analysis and interpretation of data from experiments, and presenting results with accuracy; presents results in both written and oral format and delivers completed reports; collects, interprets and draws conclusions re: data; presents results and conclusions of work within the cross-functional project team; promotes continuous quality improvement initiatives in all testing and operations; ensures compliance to SOPs and other laboratory policies (safety, security, personnel, etc.); expected to publish research findings of disease modification on marketed and allowable clinical development products in top-quality, peer-reviewed journals; maintains in-depth knowledge of state-of-the art principles and theories and applies such knowledge to the research and business direction of the Company. People management (if applicable): NOTE: Position may or may not manage one or more scientists depending on qualifications of candidate. Demonstrates ability to manage scientific, operational, and administrative aspects of a team; initiates hiring requests, conducts interviews, and hires; establishes and maintains training and development objectives for direct reports; directs the activities of research associates, may manage research scientists, and may provide training to scientific staff in study-related standard operating procedures. Performance management is required: conducts annual performance appraisals and merit recommendations; provides regular coaching feedback to team member on performance. Responsible for the development of employees, including management development and training to meet current and future business needs. Provides an environment that encourages the company's commitment to equal employment opportunity and the value of a diverse work force. Minimum education/ *experience requirements:* PhD in an appropriate physiological or pharmacological discipline, and 5-7 years of relevant experience demonstrating expertise with sustained performance and accomplishments. MS degree in related scientific discipline with 10+ years of industry experience. Biotech and/or pharmaceutical industry experience are highly desirable. Requires verifiable experience in at least one of the following areas: cardiovascular, renal, pulmonary, and hepatic physiology, pathophysiology, or pharmacology. Demonstrated experience with integrative system function, behavioral assessment in rodents. Experience in the development of in vivo rodent model development of human disease and conducting in vivo efficacy studies according to study protocols. Rodent surgery and survival surgery experience in any of PBI's therapeutic areas, experience dosing client drug regimens, making clinical observations, and harvesting specimens for analysis. Experience leading and motivating research associate staff is also a plus. Experience with Prism. Demonstrates technical *Competencies:* proficiency, scientific creativity, and independent thought in participating in experimental design and recommending research strategy. Thinks critically and creatively to determine appropriate resources for client demand as

well as resolution of problems. Evidence of productivity and independence will be demonstrated through authorship of research in a high-quality publication. Exercises independent judgment in developing and standardizing methods, techniques, and evaluation criteria for obtaining highly tractable, valid, and reproducible results. Excellent communication (both oral and written) and interpersonal skills for presentation of results in both written and oral format, and delivery of completed reports are required. Ability to communicate and collaborate in an interdisciplinary environment is essential. Must have strong organizational, planning, time-management skills. Responsiveness and is required in delivering high-quality data and reports to clients. Must actively participate and work well in a collaborative, team-oriented environment. Demonstrate genuine desire and an effectiveness to work with others in achieving Company goals. Ability to assimilate data and research findings outside the Company into the development of new scientific ideas/projects that impact PBI's strategic direction. Demonstrate knowledge of how an assigned project fits into the PBI's broader strategic goals. Proven ability to drive issues to closure and get the job done in ways that are professional and are reflective of the Company's code of conduct. Shows flexibility and ability to apply his/her knowledge to new areas of study. Commitment to safety and the humane treatment of laboratory animals is required.



Meetings & Congresses

2015

November 6-8

International 8th Congress for Minimally Invasive Spine Surgery and Techniques, Istanbul, Turkey. Information: internet: http://ismissturk.org/congress/2015/

November 7-9

Mechanisms of Vasodilation, Rochester, MN. *Information:* internet: *http://movd2016.org/*

November 11-14

Second International Conference on Oxidative Stress in Aquatic Ecosystems, Baja California Sur, Mexico. Information: e-mail: oxidativestress2015@ cibnor.mx; internet: http://intranet.cibnor.mx/eplant1. php?pagID=anuncios/estres2015/index

November 17-20

APS Conference: Cardiovascular, Renal and Metabolic Diseases: Physiology and Gender, Annapolis, Maryland. # SexGender15

November 22-25

8th Federation of the Asian and Oceanic Physiological Societies (FAOPS) Congress, Bangkok, Thailand. *Information:* e-mail: *faops2015@hotmail.com;* internet: *http://www.faops2015.com/*

December 7

H3 Symposium – Physiology, Pathophysiology and Future Treatment Options for Diabetic Complications, London, United Kingdom. *Information:* e-mail: *events@ physoc.org;* internet: *http://www.physoc.org/h3-diabeticcomplications/*

2016

January 13-16

Genomics of Neurodegenerative Disorders, Cairo, Egypt. Information: internet: http://www.goldenhelix.org/ index.php/education/golden-helix-conferences/symposia/ upcoming-symposium/222-2016-golden-helix-symposiumcairo-egypt#welcome

January 16-18

International 3rd Caribbean Biomedical Research Days Conference (CBRD-2016), Rodney Bay, St. Lucia, West Indies. Information: e-mail: info@stressandbehavior.com; internet: http://www.stressandbehavior.com/Years/2016/ Carribean/Carribean2016.html

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 Teaching Workshop: The APS Institute on Teaching and Learning, Madison, Wisconsin.

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.

Fall 2016

APS Intersociety Meeting: The Integrative Biology of Exercise VII, location TBD.

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