

## Get Ready for APS at EB 2019!

Continue the  
Conversation



#APSatEB  
#ExpBio

The APS annual meeting at Experimental Biology (EB) marks an important and exciting time on the Society's annual calendar. It's when APS members connect with 12,000+ colleagues in the wider biomedical research community, get recognized for their accomplishments and get immersed in new, hot-topic research.

In this issue of *The Physiologist*, we highlight the physiology platform sessions, distinguished lecturers, career and professional development talks and activities, this year's symposium on sexual harassment in the sciences and much more.

Also of note are several changes you'll notice at EB 2019 in Orlando, many of which are focused on making the most of your time at the meeting. This year, the APS Joint Program Committee and Office of Scientific Meetings have organized a compressed, four-day schedule and a streamlined daily schedule featuring designated time slots for oral, poster and professional development sessions and unopposed time for lunch.

We've also scheduled fun social events that allow you to network, collaborate and mingle with colleagues old and new, such as the EB-wide opening reception, APS section banquets and a trainee-focused meet and greet with Nobel lecturer Peter Agre.

There's still time to register and take advantage of all the meeting has in store. For more information, visit <https://experimentalbiology.org/2019/Registration/Registration-Information.aspx>. ●

See you  
at EB!

Get ready for a  
**NEW LOOK**  
for *The Physiologist*!

**We're completely reimagining our newsletter, and we'll be skipping the May issue to focus on the reboot. Stay tuned for the new format in July.**

### THIS ISSUE:

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- 101 New Video on Primate Research

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# Mentoring Forum

## Five Ways to be an Effective Mentor and Mentee

Rachel C. Drew, PhD

Assistant Professor, Department of Exercise and Health Sciences, University of Massachusetts Boston



Rachel C. Drew, PhD

As a relatively new assistant professor in the Department of Exercise and Health Sciences at the University of Massachusetts Boston, there were innumerable things that I needed to learn to smooth the transition into my tenure-track position. One of the most notable, and significant areas not covered in my doctoral and postdoctoral training was how to be a successful mentor to trainees and students working in my research lab. Having earned my bachelor's degree in sport and exercise science and my PhD in exercise physiology at the University of Birmingham in the United Kingdom, followed by completion of my postdoctoral training and a short time as a research associate at Penn State Hershey in Pennsylvania, I learned a great number of things about conducting research. However, I received little training about mentoring. It was not until I was thrust into the position of running my own independent research lab as an assistant professor that I was suddenly very aware that I felt ill-prepared to successfully mentor others. I had only just been a mentee myself, and now I was expected to help shape fully formed trainees who work with me in my lab with no obvious training? "Fake it until you make it" certainly sprang to mind.

After attending many professional development sessions and workshops, and reading numerous articles on mentoring, I learned there are many things that go into being not just a mentor but a *good* mentor. This article shares what I have learned about how to be a successful mentor in the two years that I have had this seemingly huge responsibility placed on my shoulders. I do not profess to be the best mentor—since it takes years of mentoring experience to achieve that status, but I have learned several nuggets of wisdom. I hope these lessons will benefit other researchers also undergoing this transition.

On the surface, mentoring may seem like a fairly straightforward process of a person with experience or expertise in their respective field providing advice

to another person in the same or similar field to help them succeed. However, *successful* mentoring involves a combination of factors that culminate in a mutually beneficial relationship between the mentor and the mentee, one in which they both gain something positive from their partnership.

These mutually beneficial relationships can take the form of formal or informal mentor-mentee relationships. Formal partnerships can be formed through targeted programs created by professional societies that match interested mentees with willing mentors, which also provide great networking opportunities. Formal partnerships can also be structured partnerships within academic institutions or industrial companies that pair a junior person with a more senior person within the same department, college, campus, university, or company. These relationships can provide helpful inside knowledge relevant to the respective institution or company. However, the expertise of the senior person may not fully align with the specific field in which the junior person is working, because it is the institution or company that brings the mentor and mentee together rather than the same research or teaching interests.

Informal partnerships can be formed through meeting people at conferences and meetings, often through introductions made by colleagues with an existing relationship with the other person. You may also meet potential mentors at workshops and other networking events. I have been introduced by colleagues to numerous people at conferences, and some of those introductions have grown into current research collaborations, an invaluable asset to my research program. I also met a graduate student at a conference poster session who is now a PhD student working in my lab! I now introduce him to people at conferences and other events, so he may benefit from those introductions at some point, thus continuing the networking cycle.

In a mentor-mentee relationship, knowing what will be necessary for the mentee to succeed requires a conversation about what the mentee wants to achieve.

This conversation should happen at the beginning of the relationship. The mentor can then draw on their experiences in their specific field to help guide the mentee in appropriate ways. Typically in a successful mentor-mentee relationship, the mentee provides the energy, and the mentor can help steer the mentee in the right direction, much like a human equivalent of a car engine and steering wheel. This effective mentor-mentee partnership results in a “win-win” for both people. The mentee can learn from the advice and support provided by the mentor as an experienced person in their field to help them succeed, and the mentor can help newer people in their field grow and become successful, serving their professional community as well as gaining personal satisfaction. Both of these successes contribute to the advancement of the respective field, highlighting the importance of successful mentoring.

The relationship between mentor and mentee is dependent on many factors, such as the academic level of both individuals, the nature of the institution or company in which they work, and their respective personalities. It can also be influenced by both individuals’ cultural backgrounds, gender, age, race, religion, sexuality, gender identity, physical ability, socioeconomic status, and other factors. Knowingly or unknowingly, any of these factors can affect this relationship, so it is important to understand that individuals’ implicit biases against certain groups of people exist (as well as explicit biases, in some cases) and that we recognize these biases rather than ignoring them or pretending they do not exist. There is a growing awareness of the need for diversification of the scientific workforce that is leading to the creation of initiatives aimed at recruiting and retaining people in traditionally underrepresented groups in science, such as the National Institute of Health’s (NIH’s) Scientific Workforce Diversity Office (<https://diversity.nih.gov>). According to NIH, traditionally underrepresented groups include women, certain racial groups including black people or African-Americans, Hispanics or Latinos, American Indians or Alaska Natives, Native Hawaiians and other Pacific Islanders, people with disabilities, people from disadvantaged socioeconomic backgrounds, and people who are lesbian, gay, bisexual, transgender, or queer. Scientific progress is at its best when viewpoints from multiple different backgrounds and experiences are voiced and heard. Mentoring is a crucial area of science in which individuals from all backgrounds and experiences can be included and starting early in their careers.

Mentor-mentee relationships do not always come without their challenges. There can be differences in personalities that make it more difficult for the partnership to be a fruitful one. There can be time constraints, particularly for the mentor, who is typically more established in their field than the mentee and often has other commitments that require more of their time or more immediate attention. The mentee may be seeking advice on a particular topic that a specific mentor cannot provide. Some of these obstacles can be avoided or at least managed by having a conversation at the beginning of the relationship about what the mentee wants to achieve and how they envisage the mentor helping them. If the mentor does not have the necessary experience or expertise, or time realistically to offer support, they should try to redirect the mentee to someone who may be able to help. Time constraints brought about by commitments at different times of the academic or calendar year can lead to fluctuations in mentors’—and mentees’—availability. Communicating known periods of limited or no availability from both sides helps mitigate or alleviate situations in which one side of the partnership does not feel like the other is responding in a timely manner. A quick email can go a long way to keeping things afloat!

As mentees rise through the ranks of training, it can be typical for them to look for one mentor who will satisfy all their academic needs, but it is not usually that straightforward! There may be the occasional superhero-mentor who provides mentees with exactly the advice they are seeking at the precise time they are seeking it. If this is the case for you, congratulations! These encyclopedic mentors are likely few and far between, however, given the vast array of academic needs that mentees have. No two mentors or mentees are the same, and therefore neither are any mentor-mentee relationships. Mentees should therefore seek multiple mentors for their different needs, whether academic, technical, or another area. Having a smorgasbord of mentors will enable mentees to seek advice on a specific topic at a certain time from someone who will be able to help them with it at that time. Making and maintaining these relationships with others in their field also increases mentees’ professional network, which can provide greater visibility of their work and open doors to receive invitations to review manuscripts for specific journals and present at professional meetings and workshops. For some people who are in the early stages of their career, simply the thought of contacting an established person in their field to ask for something is so intimidating that it can cause



them to break out in a cold sweat. However, most people are often flattered to be asked and willing to share their experience or expertise if they are able, since they have been in the shoes of the junior person at one time or another. Therefore, a well-crafted email clearly stating your position, experience, and what you are seeking advice on could lead to a new prosperous connection, as well as other potential beneficial opportunities down the road. As Geordies from the Newcastle area in the north-east of England close to where I grew up would say, “Shy bairns get nowt,” or, for those who need a translation, “Shy kids get nothing!”

There are numerous professional development opportunities available for both mentors and mentees that provide information and useful resources to help maximize efforts for successful mentoring. A great example is the National Research Mentoring Network, an NIH initiative aimed at enhancing the diversity of the NIH-funded research workforce (<https://nrmnet.net>). I regularly attend the monthly sessions, which are run by the Office for Faculty Development at the University of Massachusetts Boston. They have offered great insight into various issues faced by both mentors and mentees, and effective strategies to overcome potential barriers to improve the success of mentor-mentee relationships. Because the University of Massachusetts Boston has such a diverse student body—with a population of 33 percent underrepresented minorities and 56 percent first-generation students—resources such as this are fantastic for increasing the effectiveness of mentor-mentee partnerships.

Drawing on my personal experiences and insights gleaned from various professional development sessions, workshops, and mentoring articles, I’ve compiled the following nuggets of wisdom to be an effective mentor and mentee.

### Five Ways to be an Effective Mentor

- **Start with a conversation.** Talk with your mentees to find out what their goals are and do so at the beginning of your relationship. Gaining a clear picture of what your mentees aspire to achieve and why will allow you to shape your advice and support to best meet their needs or suggest someone else who may be better able to do so.
- **Meet your mentees where they are (figuratively speaking).** Have an awareness of where your mentees are as far as academic level and experience to date, so you can provide more tailored advice to support them to achieve their goals in ways that will be achievable for them. In other words, be the wheel that steers the car as each particular mentee provides the work of the engine!
- **Use your experience to provide advice for your mentees on an individual basis.** No two mentees are the same; each will bring their own set of interests, expectations, motivations, and personal characteristics. Mentors should be open to responding in ways that provide mentees with the tools they can use to flourish.
- **Create a “safe space” for your mentees.** Promote a culture of openness and dialogue by providing a “safe space” for your mentees in which they can feel comfortable discussing challenges—academic or personal—that they are facing and that may be affecting their academic performance. Although mentors are not expected to help with mentees’ personal issues, you may be able to point them in the direction of appropriate support services on campus or elsewhere that may benefit them and improve their academic performance. The power dynamic that can exist between a person in a position of more authority and a trainee can be felt quite profoundly by mentees, which can be a barrier to open dialogue. The onus is on you to diffuse any potential power inequalities by conversing with your experience rather than your power. As the person in a position of more authority, you may feel comfortable and not appreciate this power inequality, but given this greater “power,” you have the opportunity to minimize this inequality to bridge any potential barriers between yourself and your mentees.
- **Tell your mentees what they need to hear rather than what they want to hear.** It is in your position as a mentor to give your mentees realistic advice about their progress, which at times they may not want to hear. However, this feedback will help them on their academic journey by turning challenges into opportunities from which they can grow and develop their various academic skills, such as time management, scientific writing ability, communication, motivation, and attention to detail.

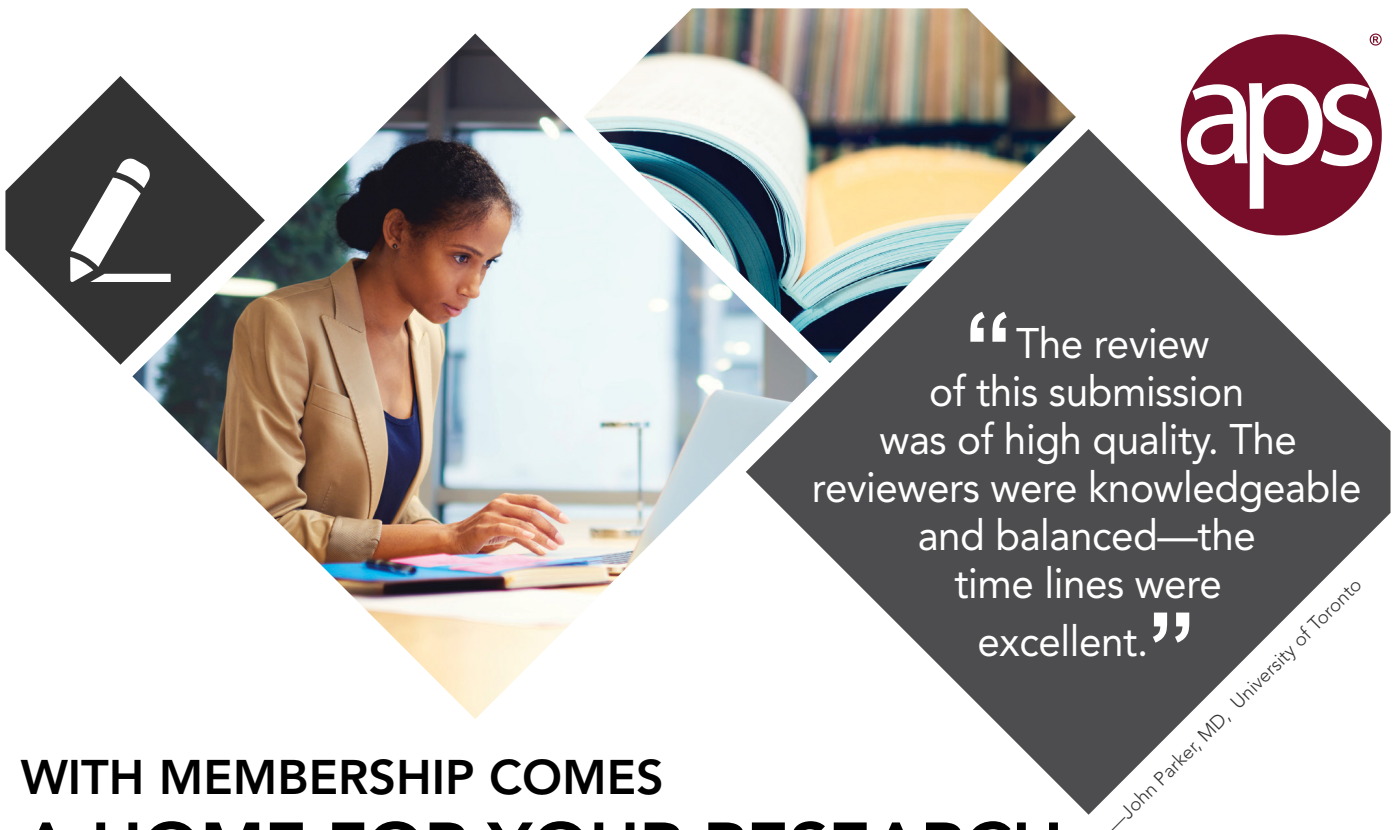
## Five Ways to be an Effective Mentee

- **Communication is key.** Set up preferred communication methods with your mentors early in your relationship to maximize effective communication from the beginning. Your mentors will likely have a preference on how best to communicate with them, based on their time commitments and availability, so ask them what their preference is and use this type of communication if they do not mention it themselves. When mentors receive communications in a way that is agreeable to them, they are more likely to respond in a positive way!
- **Be the engine of the relationship.** Approach your mentors when you need to, bearing in mind the type of communication that you have set up between the two of you. Mentors are often busy with tasks that require more of their attention at certain times, but if you want something from your mentor, the emphasis is on you to ask. This does not necessarily mean to pester your mentors with questions for which you should be expected to search for the answers elsewhere, but more that it is up to you to speak up if you need something that only a specific mentor can provide.
- **Be open to constructive feedback.** One of the most important aspects of a junior person's training is learning how to improve, which often means learning from their mistakes. When feedback is provided with the intention of being helpful to you, receive the feedback graciously and openly so you can use it to improve on the specific task at hand. Remember that no-one is perfect, and everyone has traversed through similar formative experiences in their training, including your mentors. Effective mentors want you to succeed and will use their academic and personal experiences to guide you toward that success through this constructive process.
- **Become comfortable having conversations with your mentors.** Your mentors are likely to be in positions of more authority than you, which can be intimidating to mentees, but your relationship will be most effective if you communicate your needs clearly. Effective mentors should support you in an open and constructive way and allow you to express your needs, rather than unfairly exerting their power over you.
- **Seek multiple mentors for different, specific needs.** Most often, mentors can provide advice in one, sometimes two, areas, whereas you will likely have several areas in which you would like to receive support. Although occasionally a mentor may be able to provide advice on all the topics you need, typically having numerous mentors will provide you with a greater level of support. Your needs will also likely change as you progress through your training and up the professional ranks, so it is particularly important to have many people to whom you can turn to answer those burning questions that will arise at various stages of your career. Having this larger support system will better enable you to overcome potential obstacles and ultimately be more successful.

Mentoring may seem to be about the expertise that can be passed down from an experienced mentor to a mentee who is looking to grow and succeed, but *successful* mentoring is contingent on the two individuals being able to meet in the middle to create a “win-win” situation. Meeting people where they are, both as mentees and mentors, benefits those involved, as well as science as a whole. Although I have found several approaches that have worked for me as a mentor in my early career stage, I know it is important to continue to learn, grow, and adapt to new situations. Lifelong learners make the best mentors, because their best is constantly getting better. ●

## Rachel Drew Biography

Rachel Drew, PhD, is currently an assistant professor in the Department of Exercise and Health Sciences at the University of Massachusetts Boston. The focus of her research program is the nervous system control of the cardiovascular system during exercise. Specifically, her neurovascular exercise physiology research involves examination of the effects of healthy aging, race, and exercise training on blood pressure control and blood flow to the kidneys during exercise. Drew earned her bachelor's degree in sport and exercise science and PhD in exercise physiology under the supervision of Mike White, PhD, at the University of Birmingham in the United Kingdom. She then completed her postdoctoral training under the mentorship of Larry Sinoway, MD, followed by three years as a research associate at Penn State Hershey in Pennsylvania. Drew is a member of the American Physiological Society and received a Postdoctoral and Early Career Research Recognition Award from the Neural Control and Autonomic Regulation Section of the American Physiological Society in 2014. She is also a member of the Physiological Society in the United Kingdom, the American College of Sports Medicine, and American Heart Association.



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“The review of this submission was of high quality. The reviewers were knowledgeable and balanced—the time lines were excellent.”

—John Parker, MD, University of Toronto

## WITH MEMBERSHIP COMES A HOME FOR YOUR RESEARCH

American Physiological Society (APS) members have been contributing groundbreaking research to APS journals for more than 100 years. Members now enjoy a discounted rate on the new fixed article fee. Take advantage of your benefits at [the-aps.org/benefits](https://the-aps.org/benefits) and submit your work at [physiology.org/submit](https://physiology.org/submit).

# Experimental Biology

## Experimental Biology 2019 Distinguished Lectures



**Physiology in Perspective: The Walter B. Cannon Memorial Award Lecture**

**Peter Aronson**

Yale University School of Medicine

*From Salt to Stones to CKD: Anion Transporters in Health and Disease*

Sunday, April 7, 2019, 5:30 PM



**Henry Pickering Bowditch Award Lecture**

**Jennifer Pluznick**

Johns Hopkins University

*Functional Roles for Orphan GPCRs in the Kidney*

Monday, April 8, 2019, 5:30 PM



**Robert M. Berne Distinguished Lectureship of the APS Cardiovascular Section**

**Rong Tian**

University of Washington

*Cardiac Metabolism: An Odyssey of Energy and Beyond*

Monday, April 8, 2019, 8:30 AM



**Hugh Davson Distinguished Lectureship of the APS Cell and Molecular Physiology Section**

**David Dawson**

Oregon Health Sciences University

*Membranes, Music and Economics: What I Learned from CFTR, Bob Dylan and Adam Smith*

Sunday, April 7, 2019, 3:30 PM



**Joseph Erlanger Distinguished Lectureship of the APS Central Nervous System Section**

**Tracy Bale**

University of Maryland School of Medicine

*Parental Stress and Germ Cell Epigenetic Contributions to Offspring Development*

Monday, April 8, 2019, 3:30 PM



**August Krogh Distinguished Lectureship of the APS Comparative and Evolutionary Physiology Section**

**Terrie Williams**

University of California, Santa Cruz

*On the Cardio-Neural Trail of Stranded Whales and Wounded Warriors: An August Krogh Investigation*

Monday, April 8, 2019, 3:30 PM

*Supported by Novo Nordisk Fonden*



**Solomon Berson Distinguished Lectureship of the APS Endocrinology and Metabolism Section**

**Juleen R. Zierath**

Karolinska Institutet

*Epigenetic Control and the Circadian Clock: Turning Back Time on Diabetes Pathogenesis*

Monday, April 8, 2019, 3:30 PM



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

**Sue Bodine**

University of Iowa

*Skeletal Muscle Atrophy: Multiple Pathways Can Achieve the Same Outcome*

Monday, April 8, 2019, 1:30 PM



**Horace W. Davenport Distinguished Lectureship of the APS Gastrointestinal and Liver Physiology Section**

**Nicholas LaRusso**

Mayo Clinic

*The Cholangiopathies: Pathogenic Perspectives and Therapeutic Targets*

Monday, April 8, 2019, 3:30 PM





### History of Physiology Lecture

**James Bassingthwaite**

University of Washington

*Ancel Keys Lambasted at the Faraday  
Society Meeting of 1937!*

Tuesday, April 9, 2019, 1:00 PM



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

**Susan Barman**

Michigan State University

*What Can We Learn about Neural  
Control of the Circulation by Studying  
Rhythms in Sympathetic Nerve Activity?*

Monday, April 8, 2019, 1:30 PM



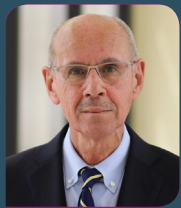
### Carl W. Gottschalk Distinguished Lectureship of the APS Renal Section

**R. Ariel Gomez**

University of Virginia School  
of Medicine

*Regulation of Renin Cell Fate in  
Homeostasis and Disease*

Monday, April 8, 2019, 3:30 PM



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

**Sadis Matalon**

University of Alabama, Birmingham

*Heme as a Central Mediator of  
Acute and Chronic Lung Injury*

Tuesday, April 9, 2019, 1:30 PM



### Claude Bernard Distin- guished Lectureship of the APS Teaching of Physiology Section

**Mary Pat Wenderoth**

University of Washington

*Evidence Based Teaching: So That  
All Students May Learn*

Monday, April 8, 2019, 8:30 AM

*Supported by APS Strategic Partner  
ADIstruments*



### Ernest H. Starling Distinguished Lectureship of the Water and Electro- lyte Homeostasis Section

**Jennifer S. Pollock**

University of Alabama at Birmingham

*There's NO Place Like Home(ostasis)*

Sunday, April 7, 2019, 3:30 PM



### APS Nobel Prize Award Lecture

**Peter Agre**

Johns Hopkins School of Public Health

*Aquaporin Water Channels—From Atomic Structure to Malaria*

Tuesday, April 9, 2019, 5:30 PM

# Experimental Biology 2019

April 6–9, 2019, Orlando, FL

[www.apsebmeeting.org](http://www.apsebmeeting.org)

We are excited to present the tentative educational program for the APS annual meeting held in conjunction with Experimental Biology (EB) 2019 in Orlando.

**NEW this year:** The 2019 annual meeting features a compressed, four-day meeting schedule from Saturday, April 6, to Tuesday, April 9. The daily schedule for APS will be:

7:00 AM to 8:00 AM	Professional development sessions
8:30 AM to 10:00 AM	Oral scientific sessions
10:15 AM to 12:15 PM	Poster presentations
12:15 PM to 1:30 PM	Free time for lunch and visiting exhibits
1:30 PM to 3:00 PM	Oral scientific sessions
3:30 PM to 5:00 PM	Oral scientific sessions
5:30 PM to 6:30 PM	Plenary named lectures

We hope you find the new meeting format valuable and that you take advantage of the many collaborative, cross-society offerings, such as the plenary Tang Award Prize lecture, the EB-wide Opening Reception, Career Central and the joint APS/ASPET President's Symposium Series held daily throughout the meeting. Register, reserve your housing and more on the EB 2019 website ([www.experimentalbiology.org](http://www.experimentalbiology.org)). We can't wait to see you in Orlando!



**aps @ EB ORLANDO**

## Join Us For These New EB19 Highlights

- APS/ASPET Presidential Symposium Series: Microbiome
- Career Central: One-on-One Career Counseling, Mentoring, Micro-learning Hubs, Career Development Workshops and Job Postings
- The Future of APS with Executive Director Scott Steen
- Science Policy Symposium: A Role for Professional Societies in Addressing and Preventing Sexual Harassment in the Sciences

**[apsebmeeting.org](http://apsebmeeting.org)**

## PHYSIOLOGY PLATFORM SESSIONS

Saturday, April 6, 2019

Morning	Afternoon	Afternoon/Evening
8:00 AM–12:00 PM <i>Education Committee Refresher Course</i> Beyond the Weight Room: The Importance of Skeletal Muscle in Health and Disease (Supported by APS Strategic Partner ADInstruments) <b>Merritt/Durocher</b>	12:00–1:00 PM <i>MCS Mentoring Lunch</i>	2:00–5:00 PM <i>WEH Section</i> Trainee Award Finalists and Data Diuresis <b>Cunningham/Loria/Hulstrom</b>
9:00 AM–5:00 PM <i>ETG Pre-EB Meeting Conference</i>	1:00–2:30 PM <i>AFMR Symp</i> Alzheimer's Disease: Many Failed Trials so Where Do We Go from Here? <b>Reiss/Stecker</b>	3:00–4:30 PM <i>AFMR Symp</i> New Method and Models to Study Human Metabolism with Stable Isotope Tracers <b>Cree-Green/Parks</b>
9:30 AM–11:30 AM <i>MCS President's Symp</i> Clinical Perspectives on the Microcirculation <b>Pierce-Cottler/Mendelson</b>	1:00–3:00 PM <i>Science Policy and Women in Physiology Committee Symp</i> A Role for Professional Societies in Addressing and Preventing Sexual Harassment in the Sciences <b>Goulopoulou/Wilson</b>	3:00–5:00 PM <i>NCAR Section Awards Session</i> Data NCARnation <b>Miller/Blackmore</b>
	1:00–3:00 PM <i>APS-ASPET Presidential Symp Series on Microbiome</i> Workshop on Microbiome Research: What You Need to Know <b>Patterson/Hullar</b>	3:15–5:15 PM <i>Techniques Workshop</i> Writing Good Multiple Choice Questions: A Hands-on Workshop <b>Silverthorn</b>
	1:00–5:00 PM <i>Physiological Omics Group 6th Annual PG Conference</i>	3:30 PM–5:30 PM <i>MCS Symp</i> Emerging Topics: Adaptation of Microvessels and Lymphatics <b>Breslin/MacGabhann</b>
	1:00–3:00 PM <i>MCS Symp</i> Microcirculation's Contribution to Organ Failure <b>Beyr/Halabi</b>	5:30–6:00 PM <i>Building the Future of APS (and Physiology)</i> <b>Steen</b>
		6:00–7:00 PM <i>Tang Prize Award Lecture</i> <b>Druker</b>
		6:00–8:00 PM <i>MCS Poster Discussion and Reception</i> <b>LeBlanc</b>

## Sunday, April 7, 2019

7:00–8:00 AM Professional Development Hour	8:30–10:00 AM	1:30–3:00 PM	3:30–5:00 PM
<i>Trainee Advisory Committee Symp</i> Marketing Yourself for a Successful Career I <b>Obi/Zarate</b>	<i>CV Section FT</i> Kaley Award FT: The Microcirculation and Its Many Cells that Contribute to Tissue Repair <b>Kubes</b>	<i>Physiological -Omics Group Symp</i> Metagenomic and Metabolomic Studies of Host-Microbial Contributions to Health and Disease <b>Joe/Abais-Battad</b>	3:30–5:00 PM <i>David Bruce Undergraduate Poster Session and Horwitz/Horowitz Awards Ceremony</i>
<i>Women in Physiology Committee Symp</i> Career Planning: No Scientist Left Behind <b>Nichols/Randive/Porta</b>	<i>Resp Section Symp</i> Central Control of Breathing: Gliocentric Mechanisms <b>Funk/Mulkey</b>	<i>Hypoxia Group Symp</i> The Lahiri/Cherniak Lecture Symp <b>Wilson</b>	<i>MCS Landis Award Lecture and Business Meeting</i> <b>Hill</b>
<i>Career Opportunities in Physiology Committee Symp</i> The Hidden Job: Skills for a Career in Physiology <b>Becker/Trimby</b>	<i>Pubs Committee Workshop</i> Publications 101 Workshop <b>Sigmund/Scheman</b>	<i>CNS Section Symp</i> Interaction of Cardiovascular Disease and Neuro-cognitive Impairment. <b>Wallace/Stocker</b>	<i>EB Symp Series</i> Carotid Body Sensing—More than Just an O <sub>2</sub> Sensor <b>MacFarlane/Wyatt</b>
	<i>Renal Section FT</i> Young Investigator Award: At the Nexus of Circadian Biology and Renal Physiology <b>Gumz/Wingo</b>	<i>Cell Section FT</i> pH Homeostasis and Acid-Base Transport <b>Parker/Romero</b>	<i>GIL Section Symp</i> Innovative Imaging Approaches in Gastrointestinal Epithelial Biology <b>Edelblum</b>
	<i>NCAR Section FT</i> Young Investigator Awards <b>Xu/Del Rio</b>	<i>PIC Symp</i> SGLT2 Inhibitors: From Basic Physiology to Clinical Success <b>Gonzalez Villalobos/Pati</b>	<i>EM Section Symp</i> Hormonal Influences on Tissue Remodeling <b>Lindsey/Gohar</b>
	<i>EEP Section Symp</i> Exercise and Heat Therapy: Shared Molecular Targets and Cardiometabolic Benefits <b>Minson</b>	<i>ETG Ussing Lecture FT</i> <b>Keely/Kortenoeven</b>	<i>NCAR Section Symp</i> Autonomic Control of Metabolism <b>Aubert</b>
	<i>WEH Section Symp</i> Translational Models of Renal and Cardiovascular Disease: Informing Human Health or Not? <b>Harrison-Bernard/Osborn</b>	<i>NCAR Section FT</i> Autonomic Anti-inflammatory Mechanisms: Which Branch Trumps? <b>Harwani/Pham</b>	<i>Nutrition Group Symp</i> Nutrition as a Biological Variable: Considerations for the Future of Physiology Research <b>Anthony/Baum</b>
	<i>CV Section FT</i> Cardiac ECM Niche in Health and Disease <b>Dixon/Griffiths</b>	<i>TPIG FT</i> Translational Physiology Highlights <b>McConnell/Jeong</b>	<i>Renal Section Symp</i> Mechanism of Hypertension-induced Kidney Damage <b>Li/Prieto</b>
	<i>CV Section Symp</i> Neurodegeneration and Heart Failure: An Intimate Connection <b>del Monte/Wold</b>	<i>CV Section Symp</i> Survived a Complicated Pregnancy? Maternal, Postpartum, and Fetal Cerebrovascular Risks <b>Warrington/Cipolla</b>	3:30–4:30 PM <i>Cell Section Davson Lecture</i> <b>Dawson</b>
	<i>CEP Section FT</i> Trainee session <b>Crossley</b>	<i>EM Section FT</i> Sex Specific Differences in Obesity Induced Hypertension <b>Barnes/Primeaux</b>	<i>Respiration Section FT</i> Sex and Gender in Respiratory Physiology <b>Silveyra/Prakash</b>



## Sunday, April 7, 2019, continued

	<i>Teach Section FT</i> Innovative Techniques for Teaching Health Sciences to Increase Retention and Mastery Learning <b>Jones/ElSayed</b>	<i>CV Section FT</i> Aging, Exercise, and Heart Failure: Common Connections and New Targets <b>Emter/Wrann</b>	<i>Sex/Gender Symp</i> Sex and Metabolic Health: Emerging Challenges and Discoveries <b>Alexander/Rice</b>
	<i>EB Symp Series</i> Aquaporins – More than Water under the Bridge <b>Mamenko/Ilatovskaya</b>	<i>Teaching Section Symp</i> Using Writing to Teach and Assess Undergraduate Physiology Students <b>Anderson</b>	<i>PanAm Symp</i> Common Pathways of Angiotensin on Cardiovascular and Respiratory Responses Induced by High-Fat-Diet, Hypoxia, and Renal Hypertension <b>Colombari/Del Rio</b>
	<i>APS/ASPET President's Symp Series on Microbiome</i> Gut Microbiome and Metabolic Disorders <b>Sands/Morgan</b>	<i>EEP Section Symp</i> The Role of Skeletal Muscle Damage in Adaptive Remodeling <b>McCarthy/Murach</b>	<i>EEP Section Symp</i> Nrf2 as a Promising Target for Increasing Healthspan and Diminishing Aging-Related Chronic Diseases <b>Hamilton</b>
	12:00-1:30 PM <i>Bodil M. Schmidt-Nielsen Distinguished Award Lecture</i> <b>Wagner</b>		3:30-4:30 PM <i>WEH Section Starling Lecture</i> <b>Pollock</b>
			4:30-5:30 PM <i>WEH Section Lecture</i> New Investigator Award <b>Hulstrom</b>
			5:15-5:40 PM <i>APS Business Meeting</i>
			5:40-6:30 PM Physiology in Perspective: The Walter B. Cannon Award Lecture <b>Aronson</b>

## Monday, April 8, 2019

7:00-8:00 AM Professional Development Hour	8:30-10:00 AM	1:30-3:00 PM	3:30-5:00 PM
<i>Trainee Advisory Committee Symp</i> Marketing Yourself for a Successful Career II <b>Obi/Zarate</b>	8:30-9:30 AM <i>CV Section Berne Lecture</i> <b>Tian</b>	1:30-2:30 PM <i>NCAR Section Ludwig Lecture</i> <b>Barman</b>	3:30-4:30 PM <i>EM Section Berson Lecture</i> <b>Zierath</b>
<i>Women in Physiology Committee Symp</i> Career Planning: No Scientist Left Behind <b>Nichols/Randive/Porta</b>	<i>EEP Section FT</i> EEP Impact Award FT: Modulation of Systemic and Tissue Metabolism via Differences in Activity and Fitness <b>Morris/Rector</b>	1:30-2:30 PM <i>EEP Section Adolph Lecture</i> <b>Bodine</b>	3:30-4:30 PM <i>CEP Section Krogh Lecture</i> Supported by Novo Nordisk Fonden <b>Williams</b>

## Monday, April 8, 2019, continued

<p><i>Careers in Physiology Committee Symp</i> The Hidden Job: Skills for a Career in Physiology <b>Becker/Trimby</b></p>	<p>8:30–9:30 AM <i>Teaching Section Bernard Lecture</i> Supported by APS Strategic Partner ADInstruments <b>Wenderoth</b></p>	<p><i>GIL Section FT</i> Gastrointestinal and Liver Physiology and Disease <b>Zachos</b></p>	<p>3:30–4:30 PM <i>GIL Section Davenport Lecture</i> <b>LaRusso</b></p>
	<p><i>Cell Section FT</i> Molecular Mechanisms of Cellular Signaling and Transduction <b>Blazer-Yost/Teal</b></p>	<p><i>CAC Symp</i> APS Chapters: Why, How, What of Starting New Chapters <b>Hopper</b></p>	<p><i>Cell Section Symp</i> New Frontier in Direct Effects of Lipids and Lipid Metabolic Defects on Membrane Proteins <b>Jiang/Greenberg</b></p>
	<p><i>WEH and ETG FT</i> Hot Topics in Water and Electrolyte Homeostasis and Epithelial Transport <b>Rieg/Beggs</b></p>	<p><i>History Symp</i> Updating the History of Insulin: Novel Insights into Regulation of Release, Delivery, and Functions <b>Molina/Souza-Smith</b></p>	<p><i>WEH Section FT</i> Environmental and Epigenetic Contributions to Disease Origin <b>Hyndman/Leachman</b></p>
	<p><i>TPIG Symp</i> Type 2 Diabetes: A Metabolic Karma <b>Carrillo Sepulveda/Chen</b></p>	<p><i>EM Section Symp</i> Crosstalk between Metabolic Disorders and Mitochondrial Oxidative Stress <b>Dikalov/Sack</b></p>	<p><i>CV Section FT</i> Wiggers Award Featured Topic <b>Chien</b></p>
	<p><i>CNS Section FT</i> Effects of Diet on Emotion and Motivated Behavior <b>Silberman/Barson</b></p>	<p><i>Renal Section FT</i> Advances in Renal Physiology I <b>Ellison/Feng</b></p>	<p><i>Respiration Section Symp</i> ENaC and Fluid Transport across Airway Epithelia <b>Althaus/Butterworth</b></p>
	<p><i>EB Symp Series</i> Oxidative Stress and Post-translational Modification of Protein Thiols in Cell Signaling <b>Helms/Downs</b></p>	<p><i>EB Symp Series</i> Brown Adipose Tissue – The Fat that Makes you Thin <b>Symonds/Budge</b></p>	<p>3:30–4:30 PM <i>Renal Section Gottschalk Lecture</i> <b>Gomez</b></p>
	<p><i>NCAR Section Symp</i> Neural Circulatory Mechanisms Linking Sleep Loss to Hypertension <b>Limberg/Somers</b></p>	<p><i>CV Section FT</i> CV Section Young Investigator Competition <b>Faulkner/Dorrance</b></p>	<p>3:30–4:30 PM <i>CNS Section Erlanger Lecture</i> <b>Bale</b></p>
	<p><i>Respiration Section FT</i> Mapping The Lung: Leveraging Emerging Technologies To Better Understand Pulmonary Disease <b>Beers/Bastarache</b></p>	<p><i>WEH Section FT</i> Therapeutic and Adverse Effects of Pharmacological Agents on Integrative Physiology and Pathophysiology <b>Loria/Wolf</b></p>	<p><i>EEP Section FT</i> Mechanisms underlying the Greater Propensity for Cardiovascular Disease in Populations with Elevated Risk <b>Keller/Brothers</b></p>
	<p><i>Muscle Biology Group FT</i> Hot Topics in Muscle Biology <b>Wang/Mitch</b></p>	<p><i>CV Section Symp</i> Thoracic and Abdominal Aortic Aneurysm: From Models and Mechanism to Clinical Trials and Therapy Updates <b>Kassiri/Liu</b></p>	<p><i>CV Section FT</i> Cardiac and Peripheral Vasculopathies: Emerging Biomarkers, Imaging and Treatments <b>LeBlanc/Kaufman</b></p>

## Monday, April 8, 2019, continued

	<i>Respiration Section FT</i> Perinatal Reprogramming of Respiratory Control <b>Huxtable/Baker</b>	<i>2019 Annual Marion J. Siegman Lectureship Award</i>	<i>Respiration Section FT</i> Emerging Therapeutics for Respiratory Dysfunction <b>Turner/Falk</b>
	<i>APS/ASPET President's Symp Series on Microbiome</i> Gut Microbiota: A Chemical Factory <b>Jeong/Pluznick</b>	<i>CEPS Symp</i> From The Brainstem to the Heart: Cardio-Respiratory Control in Ectothermic Vertebrates <b>Janes/Conner</b>	5:40–6:30 PM Henry Pickering Bowditch Award Lecture <b>Pluznick</b>

## Tuesday, April 9, 2019

7:00–8:00 AM Professional Development Hour	8:30–10:00 AM	1:30–3:00 PM	3:30–5:00 PM
<i>Trainee Advisory Committee Symp</i> Marketing Yourself for a Successful Career III <b>Obi/Zarate</b>	<i>Muscle Biology Group Symp</i> Muscle-Derived Extracellular Vesicles in the Regulation of Metabolic Health and Disease <b>Lark</b>	1:00–2:00 PM <i>History Lecture</i> <b>Bassingthwaighe</b>	<i>EM Section</i> Awardees Session <b>Romero/Sidossis</b>
<i>Women in Physiology Committee Symp</i> Career Planning: No Scientist Left Behind <b>Nichols/Randive/Porta</b>	<i>Physoc/APS Joint Symp</i> Physiology of Obesity: From Mechanisms to Medicine <b>Aldiss/Lewis</b>	1:30–2:30 PM <i>Respiration Section Comroe Lecture</i> <b>Matalon</b>	<i>Physoc Symp</i> The Clinical and Metabolic Benefits of Exercise for People with Type 1 Diabetes <b>Wagenmakers</b>
<i>Careers in Physiology Committee Symp</i> The Hidden Job: Skills for a Career in Physiology <b>Becker/Trimby</b>	<i>CV Section Symp</i> Protein Degradation Mechanisms: A Compartmentalized Affair in Cardiac Muscle and Disease? <b>Sheik/Liang</b>	<i>GIL Section FT</i> <i>Control of cellular organelle function, metabolism, and injury in liver and intestinal diseases</i> <b>Li/Yang</b>	<i>ETG Hebert Lecture</i> <b>McDonough/Kazi</b>
	<i>Cell Section FT</i> Ion Channels, Solute and Molecular Transporters In Health and Disease <b>Baines/Althaus</b>	<i>Cell Section Symp</i> <i>Emerging Roles of the Cytoskeleton in Striated Muscle</i> <b>Hawke/Perry</b>	<i>NCAR and CNS FT</i> Hot Topics in Neuroscience <b>Banek/Wainford</b>
	<i>NCAR Section FT</i> Autonomic Function in Normal and Preeclamptic Pregnancies <b>Stachenfeld</b>	<i>WEH Section FT</i> Hormones and Receptors in Homeostatic Control of Physiology and during Allostasis in Pathophysiology <b>Grobe/Balapattabi</b>	<i>Nutrition Group FT</i> Hot Topics in Nutrition <b>Thalacker-Mercer/Borsheim</b>
	<i>CV Section FT</i> Cardiovascular Metabolism in Diabetes <b>Hill/Harmancey</b>	<i>CNS Section FT</i> New Advances in CNS Physiology <b>Wainford/Zarate</b>	<i>WEH Section FT</i> Effect of Diet on Metabolism, Cardiovascular and Renal Physiology and Pathophysiology <b>Drummond/Pati</b>

## Tuesday, April 9, 2019, continued

	<i>EEP Section FT</i> Examining Physiological Mechanisms Using Environmental Stressors <b>Johnson/Schlader</b>	<i>NCAR Section FT</i> Regulation of Muscle Sympathetic Outflow during Exercise <b>Floras/Millar</b>	<i>CV Section FT</i> Inflammation and Leukocyte Biology in Cardiovascular Disease <b>Halade/de Castro Brás</b>
	<i>Renal Section FT</i> Advances in Renal Physiology II <b>Layton/Sullivan</b>	<i>EB Symp Series</i> Metabolism, Organ Crosstalk, Microbiome and Mechanisms <b>Sun</b>	5:30–6:30 PM Nobel Prize Award Lecture <b>Agre</b>
	<i>Respiration Section Symp</i> Musculoskeletal Afferents and the Control of Breathing <b>Streeter/Fuller</b>	<i>Renal Section Symp</i> Mighty Concepts in Mitochondrial Biology in the Kidney <b>Mallipattu/Li</b>	
	<i>GIL Section FT</i> John Forte Plenary Session <b>Frey</b>	<i>CV Section Symp</i> AJP-Heart Editors Symposium <b>Zucker/DeLeon Pennell</b>	
	<i>EB Symp Series</i> Crosstalk among Myofibers, Microvessels and Motor Nerves during Skeletal Muscle Regeneration <b>Segal</b>	<i>EM Section FT</i> Noncoding RNAs: Emerging Functions in Metabolism and Diseases <b>Huang/Zhang</b>	
	<i>Resp Section FT</i> Inflammasome Activation in Diseases of the Lung <b>Waters/Yeligar</b>	<i>Hypoxia Group FT</i> Hot Topics in Hypoxia <b>Nichols</b>	
	<i>APS/ASPET President's Symp Series on Microbiome</i> Microbiota in Action: The Gut and Beyond <b>McCabe/Cui</b>	<i>CEP Section Symp</i> Causes and Consequences of Inter-individual Physiological Variation <b>Rees</b>	



## Undergraduate Opportunities at EB 2019

### APS Undergraduate Orientation Session

All undergraduate students are invited to attend.

Saturday, April 6 | 3–5 p.m.

The Hyatt Regency Orlando, Plaza International Ballroom J/K



Undergraduate students networking at the undergraduate orientation at EB 2018 in San Diego

Network with other undergraduate researchers; hear great suggestions on how to get the most out of EB; and meet members from the Careers, Education and Trainee Advisory committees.

For more information, go to [the-aps.org/ugorient](http://the-aps.org/ugorient) or contact Allison Hood, program manager, higher education programs ([ahood@the-aps.org](mailto:ahood@the-aps.org)).

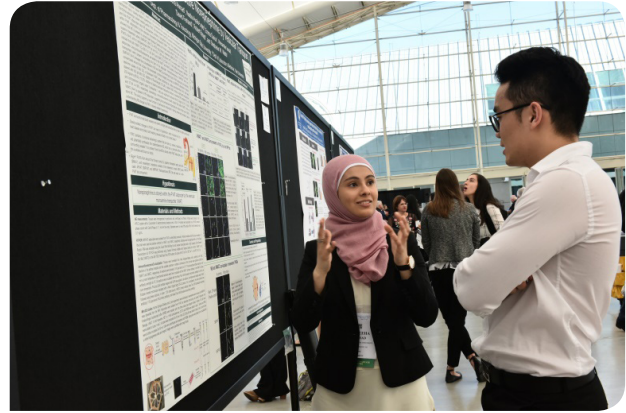
### APS David Bruce Undergraduate Poster Session

All APS members are invited to attend. Students interested in presenting at this event must sign up in advance (visit URL below).

Sunday, April 7 | 3:30\*–5 p.m.

Orange County Convention Center, Valencia Ballroom D

\*Undergrad students must arrive by 2:00 p.m. to check in and hang their poster. They will have a chance to meet with various graduate departments and programs on site.



APS summer research fellow Maleeha Ahmad presents her research findings to an APS member at EB 2018 in San Diego

The APS David Bruce Undergraduate Poster Session is a special poster session held during EB for physiology undergraduates. This session is held *in addition* to the regularly programmed scientific session in which all researchers participate.

Over 125 undergraduate students will be presenting their research on a wide range of topics. Don't miss this opportunity to support undergraduate students and encourage them to pursue a career in biomedical research.

Program	
2:00 p.m.	Check in and hang posters
2:30–3:30 p.m.	Meet with graduate departments/programs on site Snacks and refreshments provided
3:30–4:30 p.m.	Poster presentations - Meet APS members and answer questions about your research
4:30–5:00 p.m.	Horwitz/Horowitz Awards Ceremony
5:00 p.m.	Remove posters


For more information, go to [the-aps.org/ugposter](http://the-aps.org/ugposter) or contact Allison Hood, program manager, higher education programs ([ahood@the-aps.org](mailto:ahood@the-aps.org)). ●



## Career and Professional Development Talks at the APS Annual Meeting at EB

All EB attendees are invited to join us for the APS career and professional development talks on Sunday, Monday and Tuesday mornings from 7:00 to 8:00 a.m. in the Orange County Convention Center. Coffee and pastries will be provided for symposia attendees. Visit the websites or the APS EB meeting website for additional information. We hope to see you there!

Symposium Title	Sunday, April 7 7:00–8:00 a.m.	Monday, April 8 7:00–8:00 a.m.	Tuesday, April 9 7:00–8:00 a.m.
<b>Marketing Yourself for a Successful Career</b>  <a href="http://the-aps.org/marketing-yourself">the-aps.org/marketing-yourself</a>  Room W311B Sponsored by the Trainee Advisory Committee Organizers: Ijeoma Obi and Miguel Zarate	<b><i>How to Build Marketable Skills</i></b>    <b>Merry Lindsey</b> <i>University of Nebraska Medical Center</i>	<b><i>Career Development Opportunities Outside the Academia - And How to Get There</i></b>    <b>Niclas Lindqvist</b> <i>Svensk Medicin AB</i>	<b><i>Capitalizing on Social Networks to Build a Successful Career</i></b>    <b>Melissa Bates</b> <i>University of Iowa</i>
<b>Career Planning: No Scientist Left Behind</b>  <a href="http://the-aps.org/No-Scientist-Left-Behind">the-aps.org/No-Scientist-Left-Behind</a>  Room W311C Sponsored by the Women in Physiology Committee Organizers: Nicole Nichols, Sushant Ranadive, and Maura Porta	<b><i>Juggling a Career and Parenthood: A Scientist's Perspective</i></b>    <b>Jacqueline Limberg</b> <i>University of Missouri</i>	<b><i>Building Bridges for a Sustainable Career Path and Workforce Diversity</i></b>    <b>Irving Vega</b> <i>Michigan State University</i>	<b><i>Knowing When to Say Yes, Knowing When to Say No: Strategies for Success</i></b>    <b>Nancy Fjortoft</b> <i>Midwestern University</i>

Symposium Title	Sunday, April 7 7:00–8:00 a.m.	Monday, April 8 7:00–8:00 a.m.	Tuesday, April 9 7:00–8:00 a.m.
<p><b>The Hidden Job: Aspects of a Physiology Career You May Not Be Aware of</b></p> <p><i>the-aps.org/the-hidden-job</i></p> <p>Room W311D</p> <p>Sponsored by the Career Opportunities in Physiology Committee</p> <p>Organizers: Bryan Becker and Chris Trimby</p>	<p><i>Tools for Transitions</i></p>  <p><b>David Brooks</b> <i>Janssen Pharmaceuticals</i></p>  <p><b>Kathy Ryan</b> <i>U.S. Army</i></p>	<p><i>Mentoring, Management and Team Science</i></p>  <p><b>Jennifer Pollock</b> <i>University of Alabama at Birmingham</i></p>  <p><b>Stanley Andrisse</b> <i>Johns Hopkins University</i></p>	<p><i>The Elusive Informal Skills: Things I Wish I Had Known Earlier</i></p>  <p><b>Alberto Roca</b> <i>Diverse Scholar</i></p>  <p><b>Adam Case</b> <i>University of Nebraska Medical Center</i></p>



Join APS for a new session at EB 2019  
**Why, How, What of Starting New Chapters**  
 Monday, April 8 from 1:30 p.m.–3 p.m.  
 Room W311A, Orange County Convention Center, Orlando, FL • [apsebmeeting.org](http://apsebmeeting.org)



## Don't Miss the Refresher Course at the APS Annual Meeting at EB

Please join us Saturday, April 6 at 8:00 a.m. for this year's Refresher Course "Beyond the Weight Room: The Importance of Skeletal Muscle in Health and Disease." The goal of the annual APS Refresher Course is to provide instructors of medical physiology courses with updates to their lecture content and to provide materials for non-specialists who have teaching responsibilities in specific content areas. At EB 2019, the Refresher Course will review updates in teaching skeletal muscle physiology.

Four lectures will be presented covering a broad range of topics to review current topics covered in medical physiology and to highlight new areas of interest, including the role of skeletal muscle beyond strength and how it is related to overall health and disease.

### Beyond the Weight Room: The Importance of Skeletal Muscle in Health and Disease

**Saturday, April 6 from 8:00 a.m. to 12:00 p.m.**

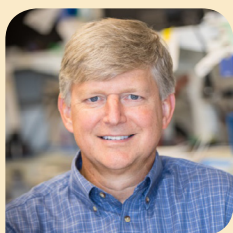
Orange County Convention Center, Room W314

*[the-aps.org/refresher-skeletalmuscle](http://the-aps.org/refresher-skeletalmuscle)*

Sponsored by the Education Committee

Organizers: Edward Merritt and John Durocher

Teaching the  
Etiology of  
Metabolic  
Disease From a  
Mitochondrial  
Bioenergetics  
Perspective



**Darrell Neuffer**  
*East Carolina University*

Skeletal Muscle  
Metabolism in the  
ICU



**Craig Porter**  
*Shriners Hospital for  
Children*

Active Learning  
of Skeletal Muscle  
Physiology Using  
Physical Models,  
Laboratory  
Experiments,  
Current Events, and  
Historical Lessons



**Steve Elmer**  
*Michigan Technological  
University*

Age-Related  
Changes in Skeletal  
Muscle: Differences  
Between Females  
and Males



**Anna Thalacker-Mercer**  
*Cornell University*

*Supported by APS Strategic Partner ADInstruments.*



## APS Launches Taskforce on Sexual Harassment

In 2018, the National Academies of Science, Engineering and Medicine (NAEM) issued a milestone report, *Sexual Harassment of Women: Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine*. This report found that sexual harassment in many forms is widespread in academic science and that it takes a significant toll on the careers of women. It also found that people of color and LGBTQ individuals experience higher rates of harassment and workplace discrimination.

At its fall 2018 meeting, the APS Council approved the creation of a Taskforce on Sexual Harassment to recommend actions APS can take to address sexual harassment and to ensure that our culture is one where everyone is treated equally and with dignity and respect. Taskforce members include a representative of the Council and two members of each of the following committees:

- Porter Physiology Development and Minority Affairs
- Science Policy
- Trainee Advisory
- Women in Physiology

This fall, a call went out to the membership at-large to volunteer to either serve on the taskforce or provide input on its activities. The response was robust: More than 60 APS members expressed interest in working on this effort. Members of the taskforce were selected to ensure broad participation in terms of diverse backgrounds, career levels, section representation, and geographic area. We are pleased to announce the taskforce membership:

### Co-Chairs

- **TanYa Gwathmey-Williams**, Wake Forest University School of Medicine
- **Victor Convertino**, U.S. Army Institute of Surgical Research

### Members

- **Katherine Blackmore**, George Washington University, School of Medicine and Health Sciences
- **Elisa Gonzalez-Rothi**, University of Florida
- **Timothy Musch**, Kansas State University
- **Matthew Pamenter**, University of Ottawa
- **Jennifer Pluznick**, Johns Hopkins School of Medicine
- **Maura Porta**, Midwestern University
- **Alicia Schiller**, University of Nebraska Medical Center
- **Annabell Segarra**, University of Puerto Rico School of Medicine
- **Gary Sieck**, Mayo Clinic
- **Ashley Stewart**, Johns Hopkins School of Medicine
- **Annelyn Torres-Reveron**, University of Texas at Rio Grande Valley Medical School
- **Christopher Wilson**, Loma Linda University
- **Lila Wolman**, University of Florida

Over the next several months, the Taskforce will develop recommendations for Council about shaping future APS policies with respect to membership, conferences and awards. It will also suggest ways to improve diversity and inclusion, support civility and combat bullying within a scientific context. Taskforce members are expected to report their recommendations to Council later this year.

Brooke Bruthers, director of education and member communities, and Rebecca Osthus, associate director for government relations and science policy, are the APS staff liaisons to the Taskforce. If you would like more information, please contact Rebecca Osthus at [rosthus@the-aps.org](mailto:rosthus@the-aps.org) or Brooke Bruthers at [bbruthers@the-aps.org](mailto:bbruthers@the-aps.org). ●

## EB Symposium: Sexual Harassment in the Sciences

Join us on Saturday, April 6 from 1:00 to 3:00 p.m. in the Orange County Convention Center (Room W309AB) in Orlando, Fla., for a discussion of the role of professional societies in addressing and preventing sexual harassment in the sciences.

The 2018 report on the sexual harassment of women in the sciences issued by the National Academies of Sciences, Engineering and Medicine (NASEM) focused attention on an issue that has long plagued the scientific community. This symposium will review the primary findings of the landmark report, help participants understand the impact

of sexual harassment in the sciences, and explore ways that professional societies can play a role in protecting all members and creating an environment where the risk of harassment is minimized.

Gilda Barabino will review the major findings of the NASEM report; Billy Williams will address the role of professional societies; and BethAnn McLaughlin will share her efforts to raise awareness about the impact of sexual harassment on women in the sciences. There will be time for audience members to ask questions and share their thoughts and ideas with the panel. ●

## APS Satellite Symposium after EB to Honor Bodil Schmidt-Nielsen

Jorgen Frokiaer and Jeff Sands (Symposium Organizers)

We are excited to announce and invite you to the Bodil Schmidt-Nielsen Honorary 100 Year Symposium.

Bodil Schmidt-Nielsen, PhD, was the first female APS president and would have turned 100 on November 3, 2018. In addition to her reputation as an eminent renal and comparative physiologist, Schmidt-Nielsen was a wonderful person and scientific pioneer. The day-long session will feature a program that is close to some of the central scientific areas of her work during her long-lasting scientific career.

The symposium—made possible by a generous grant from the Novo Nordisk Foundation—will be held at the Hyatt Regency Orlando on April 10, 2019, the day after the EB meeting in Orlando, Fla. It's free to register and to attend. Free lunch and coffee breaks will also be provided.

The event kicks off with a plenary lecture by Nobel Laureate Peter Agre—the 2019 APS Nobel Lecturer—and features three sessions:

- Structural basis for the urinary concentrating mechanism
- Novel aspects of aquaporin regulation; and
- Novel aspects of urine concentration.

A detailed program will be available at a later date. We hope you will plan to attend, learn more about the research being presented and honor the science and legacy of this trailblazing physiologist. Sign up at <http://evite.me/65KUqCqHqN>. ●

# Meetings

## You're Invited to Attend the 2019 APS/ASN Renal Conference in Charlottesville

Edward Inscho, PhD, and Pablo Ortiz, PhD (Conference Organizers)

It's our pleasure to announce and invite you to the upcoming APS/ASN "Control of Renal Function in Health and Disease" conference (<http://ow.ly/qgMF30ngArE>). The conference—formerly the FASEB summer research conference on renal hemodynamics—has been held every three years since 1989. The 2019 conference will be the first time it will be jointly sponsored by APS and the American Society of Nephrology.

The conference will be held June 23–27, 2019, at the Boars Head Resort (<https://www.boarsheadresort.com>) in Charlottesville, Va. (abstract deadline: March 29).

Our goal is to continue building on the success of this conference series by expanding the clinical and translational component of the meeting. This will allow us to bring together basic and clinical investigators to discuss new ideas about renal and cardiovascular function as they relate to the mechanisms of kidney injury.

We have assembled a group of international expert investigators in renal and cardiovascular research to organize the conference and serve on the program committee. Additionally, 37 scientists from institutions worldwide have committed to present at the conference, and we will be selecting approximately 32 short talks to be presented by meeting participants.

To continue the conference's tradition of excellence and cutting-edge research presentations, we've added new topics to the program, including:

- obesity, diabetes, metabolic syndrome;
- sex steroids and the kidney;
- developmental programming of kidney disease;
- genetics, epigenetics and the kidney;
- immunology and the kidney; and
- circadian biology of kidney function.

We will also cover recent advances in traditional areas of renal hemodynamics, acute kidney injury, chronic kidney disease and podocytes, hypertension, and autotoxins and the kidney. We have an exciting program that will attract investigators from around the world. You can view the preliminary program we've developed—including the slate of leading scientists scheduled to present at the meeting—on the APS website (<http://ow.ly/8Irz30ngAwU>).

If your research is in these areas, we hope you will consider submitting an abstract by March 29 and attending the meeting. We look forward to seeing you there! ●

### Deadlines

Abstract Submission: March 29, 2019  
 APS Abstract Travel Award: March 29, 2019  
 APS Minority-based Travel Award: March 29, 2019  
 Advanced Registration: May 23, 2019  
 Hotel Reservations: May 23, 2019  
 Cancellation Deadline: May 31, 2019

*For more information, visit [www.the-aps.org/renal](http://www.the-aps.org/renal).*

## Apply for Martin Frank Diversity Travel Awards to Attend the 2019 Renal Conference

APS will be offering Martin Frank Diversity Travel Awards, which provide up to \$1,800 in travel expense reimbursement, for the upcoming 2019 APS Conference:

**Control of Renal Function in Health and Disease** (Formerly the Renal Hemodynamics Summer Research Conference)

*Co-Sponsored by the American Society of Nephrology*

*June 23–27, 2019 in Charlottesville, Va.*

This program is designed to broaden participation of those pursuing professional careers in physiological/ biomedical sciences. Specifically, the program provides travel fellowships to underrepresented graduate students, postdoctoral fellows and early career faculty members (within five years of obtaining a PhD).

For more information about the Martin Frank Diversity Travel Award program, visit [the-aps.org/MFDT](http://the-aps.org/MFDT) or contact Kayla Palmer, project assistant, diversity and higher education programs, at [education@the-aps.org](mailto:education@the-aps.org).



APS Travel Fellows at EB 2018 in San Diego



## Upcoming APS Meetings and Conferences

### 2019

*April 6–9*

**Experimental Biology**, Orlando, Fla. *Information:*  
Website: <http://apsebmeeting.org/eb2019/>

*June 23–29*

**APS/ASN Conference: Control of Renal Function in Health and Disease**, Charlottesville, Va. *Information:*  
Website: <http://www.the-aps.org/renal>

*September 11–14*

**APS Interface of Mathematical Models and Experimental Physiology: Organ Function from the Microvascular Perspective**, Scottsdale, Ariz.  
*Information:* Website: <http://www.the-aps.org/mathmodels>

*October 2–6*

**9th Annual International Conference of Aldosterone and ENaC in Health and Disease: The Kidney and Beyond**, Estes Park, Colo.

### 2020

*April 4–7*

**Experimental Biology**, San Diego.

*June*

**11th International Conference on Heme Oxygenase & Related Enzymes: From Physiology to Therapeutics**

For a list of upcoming meetings from related organizations, see the APS website:  
[www.the-aps.org/mm/Conferences/Related-Meetings](http://www.the-aps.org/mm/Conferences/Related-Meetings).

### APS/ASN Conference: Control of Renal Function in Health and Disease

*Formerly the Renal Hemodynamics Summer Research Conference*  
Charlottesville, Virginia • June 23–27, 2019

#### Keynote Address

“New Frontiers in Kidney Research: Overview of the Field”  
Donald Kohan, MD  
University of Utah

#### Abstract Submission and Travel Award Deadline

March 29, 2019

#### Advanced Registration Deadline

May 23, 2019

[the-aps.org/renal](http://the-aps.org/renal)



# ACDP

## Association of Chairs of Departments of Physiology 2018 Leadership Retreat Highlights



ACDP President Janice H. Urban (*right*) presents Frank W. Booth (*left*) with the 2018 ACDP Arthur Guyton Lectureship Award.

The Association of Chairs of Departments of Physiology (ACDP) held its annual Leadership Retreat at Grand Fiesta Americana in Cancún, Mexico, November 29 to December 2, 2018.

President Janice H. Urban (Rosalind Franklin University of Medicine & Science/Chicago Medical School) developed a program focused on stress, its physiological background and consequences and how to combat it. This focus was prompted by recent findings on the high levels of stress being experienced by chairs, faculty, and both medical and graduate students.

Research talks included the 12th annual Arthur C. Guyton Lectureship given by Frank W. Booth (University of Missouri), “Maximal Aerobic Training: An Ultimate Integration of Genes and Systems While Maintaining Homeostatic Harmony.”

The 2018 ACDP Distinguished Service Award was presented to Celia D. Sladek (University of Colorado School of Medicine) who gave the talk “Physiology: A Career of Lifetime Learning,” highlighting her career as a physiologist (see “Sladek Honored at Annual ACDP Meeting” on p. 86).

The new chair research presentation by James Herman (University of Cincinnati) was “On Becoming ‘Furniture’:

Lessons in Stress Adaptation and Resilience.” Aviad Haramati (Georgetown University) presented his research on medical student stress and efforts to bring wellness into the curriculum by recruiting educators to help students manage their own stress; the talk was titled “Managing Stress, Building Resilience in the Curriculum and in the Culture: The Unique Opportunity for Physiologists.” He also held a workshop called “An Experiential Introduction to Mind-Body Medicine” for interested attendees to learn about methods for better stress management that can be shared with students, faculty and others in their departments.

ACDP continues to be concerned with undergraduate physiology education. An update of a pre-meeting workshop was given by the Working Group on Undergraduate Education led by T. Richard Nichols (Georgia Institute of Technology) and included Dixon Woodbury (University of Utah), Christopher Hardin (University of Missouri), Nicholas Delamere (University



ACDP Council. (*Back, left to right*): Charles Wood, Dale Buck Hales, V. Gustavo Blanco, Elsa Mangiarua, Edward Morrison, C. Lee Cox. (*Front, left to right*): Toni Pak, Marlene Wilson, Janice Urban, Patricia Molina, Gaylen Edwards. Not pictured: Walter Boron, Nick Delamere, Christopher Hardin, Santiago Schnell.

of Arizona), and Patricia Nichols (Emory University). Also present was Jeffrey Osborn (University of Kentucky), chair of the APS Education Committee. The group’s consensus was that the working group continue to hone the ACDP list of core principles that should be included in any undergraduate physiology major’s coursework. Erica Wehrwein (Michigan State University) and Jennifer Rogers



ACDP incoming President Patricia Molina (left) thanks outgoing President Janice Urban (right) for her leadership over the past year

(University of Iowa) attended on behalf of the Physiology Majors Interest Group, which is planning its third annual meeting in 2019. They updated members on the efforts of the group over the past year. ACDP will again be supporting the meeting in 2019 as it has since the meeting began. The presentations from these groups are available at [acdponline.org/Home/Meetings/2018-Leadership-Retreat](http://acdponline.org/Home/Meetings/2018-Leadership-Retreat).

Other presentations included one by LouAnn Woodward titled "Medical School Accreditation: One Dean's Perspective." She is the vice chancellor for health affairs and dean of the School of Medicine at the University of Mississippi Medical Center and served as the former chair of the Liaison Committee on Medical Education of the American Association of Medical Colleges. Also of high interest was the presentation from new executive director

of APS, Scott Steen. Steen presented "The Path Forward: A New Vision for the Future of APS." ACDP members were very pleased at his attendance and gave enthusiastic feedback on his plans for the Society.

Officer elections were held with the following results: Dale "Buck" Hales, PhD (Southern Illinois University School of Med.), was elected president-elect, C. Lee Cox, PhD (Michigan State University), and Toni R. Pak, PhD (Loyola University Chicago), were elected to three-year terms as councilors, Nicholas A. Delamere, PhD (University of Michigan), was reelected to a three-year term as CFAS representative, and Santiago Schnell (University of Michigan) was elected to a two-year term as CFAS representative to fill the remainder of a term.

Charles E. Wood, PhD (University of Florida College of Medicine) was thanked for his service as past president. Edward E. Morrison, PhD (Auburn University), and Marlene A. Wilson (University of South Carolina School of Medicine) were thanked for their service as councilors.

President-elect Patricia E. Molina, MD, PhD (Louisiana State University Health Science Center, New Orleans), announced the 2019 ACDP Leadership Retreat will be held December 5–8 at Hotel Casa Santo Domingo in Antigua, Guatemala. As details are available, they will be added to the 2019 meeting webpage at [acdponline.org/Home/Meetings/2019-Leadership-Retreat](http://acdponline.org/Home/Meetings/2019-Leadership-Retreat).

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



## Sladek Honored at Annual ACDP Meeting



ACDP President Janice H. Urban (right) presents Celia D. Sladek (left) with the Distinguished Service Award

The highest award given by the Association of Chairs of Departments of Physiology (ACDP), the Distinguished Service Award, was awarded to Celia D. Sladek, PhD, emerita professor of physiology at University of Colorado School of Medicine. Janice H. Urban (Rosalind Franklin University of Medicine & Science/Chicago Medical School), president of ACDP, presented the award during the organization's 2018 Leadership Retreat at Grand Fiesta Americana Coral Beach in Cancun, Mexico, from November 29 to December 2, 2018.

Sladek was selected to receive the ACDP Distinguished Service Award for leadership in the discipline of physiology, educating the next generation of physiologists, outstanding research, and service to national and international organizations.

She began her career in the physiology department at Northwestern University Medical School. After completing MS and PhD degrees, she went directly into an assistant professor position in the physiology department at the University of Illinois, College of Medicine in Chicago. She moved to western New York in 1973 as assistant professor in biological sciences at SUNY Brockport, for

one year, teaching physiology to undergraduate students. Then, due to her love of research, she accepted a research associate position in neurology and in neurobiology and anatomy at the University of Rochester School of Medicine. In collaboration with Robert Joynt, MD, PhD, her research focused on the neurohypophyseal hormones, vasopressin and oxytocin. On obtaining her first National Institutes of Health (NIH) grant and a Research Career Development Award, she was promoted to assistant professor in neurology, and rose through the ranks to full professor. Sladek was the first tenured PhD in a clinical department at Rochester.

In 1991, Sladek returned to Chicago as a tenured professor in the department of physiology and biophysics at the Chicago Medical School. There, Physiology Chair Richard Hawkins, PhD, was involved in developing the APS sections and chaired the CNS Section. Although Sladek was already a member of APS, Hawkins was instrumental in getting her involved in the Society. She joined the CNS section and served on the steering committee as secretary-treasurer and chair. This led her to chairing the Section Advisory Committee and serving on the APS Nominating and Women's committees, which she eventually chaired, as well as the FASEB Excellence in Science Committee. In 1996, she was elected to the APS Council and chaired the Committee on Committees. She organized the APS Conference "Neurohypophyseal Hormones: From Genomics and Physiology to Disease," in Steamboat Springs, Colo., in 2005. She served on the editorial board and as an associate editor of *American Journal of Physiology—Regulatory and Integrative Physiology*. Recently, she obtained an APS International Opportunity Award to support attendance of student and junior researchers at the World Congress on Neurohypophyseal Hormones in Rio de Janeiro. Sladek served as chair of physiology and biophysics at the Chicago Medical School from 2000 to 2002, was a member of the first class of APS Fellows in 2015 and has received many other honors and awards, including the Erlanger Distinguished Lectureship and James O. Davis Distinguished Lectureship. She is a member of Alpha Omega Alpha. Sladek moved to the University of Colorado School of Medicine in 2002 in part to return to her home town of Denver and her beloved Rocky Mountains.



Sladek was continually funded by NIH from 1976 to 2013, published 125 peer-reviewed journal articles and 35 reviews or book chapters, presented over 110 invited lectures, and mentored 17 PhD students and postdoctoral or clinical fellows. She served on research review committees for NIH (NINDS, NIMH, NHLB, NIA, and NIAMD), National Science Foundation, and American Heart Association, and as an editor for *Brain Research Bulletin*, *Experimental Neurology*, and *Journal of Neuroendocrinology*.

During her career, she had the pleasure of watching the understanding of the roles of vasopressin and oxytocin expand from important hormones regulating renal, cardiovascular, uterine, and mammary function to neuropeptides influencing maternal/paternal behavior, memory, emotion, appetite, and much more.

Because of her scientific endeavors and mentorship, her dedicated service to the field of physiology, and her distinguished service to APS and other societies, the ACDP was proud to present Sladek with its 2018 Distinguished Service Award. ●

Your membership is important to physiology.  
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[the-aps.org/renew-membership](https://the-aps.org/renew-membership)

# People and Places

## Obituary: Professor Timothy Evans (1954–2018)

Peter J. Barnes, FRS, FMedSci *National Heart and Lung Institute Imperial College London*



Tim Evans

Tim Evans (MD, PhD, DSc, FRCP, FRCA, FMedSci), an international leader in respiratory critical care, died on November 9, 2018, at age 64. He will be greatly missed for his outstanding and sustained contributions to research and clinical medicine.

influential, and he received widespread international recognition. He played a major role in the development of critical care as an independent specialty in the United Kingdom and in the founding of the Faculty of Intensive Care Medicine, of which he was the vice-dean. He trained many in critical care who have gone on to leadership positions nationally and internationally, and all recognize his major influence on their careers. He was in great demand as a lecturer at international meetings and was a key member of the international research community in critical care and respiratory medicine.

Evans received his medical training at the University of Manchester in England, qualifying in 1982, and went on to do a PhD at the University of Sheffield. After clinical training at London, he was a visiting fellow at the Cardiovascular Research Institute in San Francisco in 1984/85. After returning to London, he worked in my department on several projects, including studies of plasma extravasation from airway blood vessels and pulmonary vascular function, resulting in over 30 publications. In 1987, he was appointed consultant in intensive care and thoracic medicine at the Royal Brompton Hospital in London and, in recognition of his major contributions to critical care medicine, was appointed professor of intensive care medicine at Imperial College in 1996. He ran a large and productive research group focusing on translational research in critical care medicine, with an emphasis on acute lung injury, sepsis, acute respiratory distress syndrome (ARDS), and pulmonary vascular disease. He also ran the Respiratory Intensive Care Unit at the Brompton, which became a magnet for trainees in critical care. It became a national referral center under his guidance and the largest extracorporeal membrane oxygenation center in the United Kingdom. In 2015, he took a government post as the National Director for Clinical Productivity at the Department of Health and the National Health System (NHS).

His contributions to academic critical care were enormous. His research into acute lung injury and ARDS was very

In addition to his research and clinical commitments, he had several administrative roles, becoming medical director of the Brompton in 2006, then deputy chief executive officer in 2008. He also served as academic vice-president of the Royal College of Physicians (2009–2012), where he led the Future Hospital Commission, described in the *Lancet* (2013) as “the most important statement about the future of British medicine for a generation.” He was a trustee of the Faculty of Pharmaceutical Medicine and the Nuffield Trust, and an honorary consultant in intensive care to the Army, and became the founding editor of *Future Hospital Journal*, among many other roles.

Over his career, Evans received many honors and prizes, including fellowships of the Academy of Medical Science, Royal College of Physicians, and Royal College of Anaesthetists. He published over 300 papers in peer-reviewed journals.

He was enthusiastic and inspirational in everything he did, and it was difficult to understand how he could achieve so many things. He was universally liked and respected by his colleagues, had extraordinary clinical skills, and was loved by his patients. He was passionate about improving healthcare across the NHS and beyond. He was always optimistic, often irreverent, and very funny. He was unique and will be greatly missed by his family, many friends, colleagues, and patients. ●

# Education

## 2019 Barger and Schmidt-Nielsen Awardees

### 2019 A. Clifford Barger Underrepresented Minority Mentorship Awardee



The Porter Physiology Development  
and Minority Affairs Committee is  
pleased to announce the 2019  
Barger Award recipient:

**Michael J. Ryan, PhD**  
*Department of Physiology and Biophysics*  
*University of Mississippi Medical Center*

For more information, please visit  
<http://www.the-aps.org/barger>

### 2019 Bodil M. Schmidt- Nielsen Distinguished Mentor & Scientist Awardee



The Women in Physiology Committee  
is pleased to announce the 2019  
Schmidt-Nielsen Award recipient:

**Peter D. Wagner, MD**  
*Emeritus Professor of Medicine*  
*and Bioengineering*  
*University of California, San Diego*

For more information, please visit  
<http://www.the-aps.org/schmidtnielsen>

# Member News

## K-12 Outreach at Indiana University School of Medicine

Aaron Costlow, Indiana University School of Medicine, Class of 2021

Mari Hopper (mentor), Associate Professor of Cellular and Integrative Physiology, Indiana University School of Medicine

This fall, students at the Indiana University School of Medicine-Evansville (IUSM-E) created a program in which medical students travel to surrounding elementary schools to teach basic medicine-related topics. The goals of this program are to build community relationships between IUSM-E and community schools, and to educate students about their health education and future quality of life. During PhUn Week, medical students collaborated with the University of Evansville Physician's Assistant program to create an interprofessional experience in which they taught elementary students about the gastrointestinal (GI) system. Models were used to introduce basic anatomy. A string was then used to demonstrate the length of the

GI tract. The students and participants were amazed. A hands-on experience included having groups of students place bread in a bag with Coke and watch what happens. Participants were quick to observe that the bread was "barely melting." To illustrate the action of stomach muscles in mechanical digestion, students were then instructed to squish the bread in the bag and note further changes. Finally, medical students assisted the participants in using stethoscopes to listen to bowel sounds and discussed the general physiology creating the sounds. Participants *loved* using the stethoscopes and, through participation in this outreach activity, will hopefully aspire to having their own stethoscope in the future! ●



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# Publications

## Introducing New Editor-in-Chief of *Comprehensive Physiology*

Y. S. Prakash



Y. S. Prakash

I am humbled to have been selected as the next editor-in-chief of *Comprehensive Physiology* (CPHYS). I recognize the incredible effort it takes to make a journal great and keep it so. And so my sincere and heartfelt thanks to Ron Terjung, the founding editor, and David Pollock, the current editor, for placing me

in the fortunate situation of inheriting a highly recognized journal from a position of strength. And thank you to APS for having created the *Handbook of Physiology*, CPHYS's previous and long-recognized avatar that kept me in good stead during graduate and medical training. It has indeed been a pleasure to serve on the CPHYS Editorial Advisory Board (EAB) for the past two years under David, and I look forward to continuing to work with him, the EAB, and APS to expand the reach and broaden the appeal of CPHYS as a leading journal for publishing authoritative reviews and updates in physiology for both learners and the learned.

To the many who ask, "Who on earth is this guy?" the simple answer is Prakash is someone who could never make up his mind about who he wanted to be but ended up doing what he really wanted to do. I was born and raised in India where I completed undergraduate training in electrical engineering at the Indian Institute of Technology, Bombay. During four years of grueling training, I saw myself drawn to biomedical engineering as a future, given the appeal of bridging engineering and medicine, fields that I loved equally. My initial interests were in rehabilitation engineering based on an undergraduate project on communication devices for children with cerebral palsy and amputations.

I was fortunate to be granted a graduate fellowship in BME at University of Southern California (USC). There, it was my chair, H. K. Chang, who got me excited about physiology research, something I frankly knew little about given my engineering background. Looking for a PhD thesis project in physiology is how I got to meet Gary Sieck. As many in the APS who know Gary can imagine, a relatively shy Indian engineer

found Dr. Sieck quite intimidating! (Hopefully and ironically, now that I am his chair, the situation is a bit different?) I was quite interested in neurophysiology, and Gary with his lab members Cesar Blanco (still at USC), Mario Fournier (now at Cedars), and Wen-Zhi Zhan (now at Mayo) convinced me to take a deep dive into diaphragm neuromotor control. So away I went on my first project on maternal undernutrition on the postnatal diaphragm (or so I thought). Within three months, Gary asked if I wanted to move to Mayo Clinic in Rochester, Minn. Never having seen snow in my life, one would think my answer would be (expletive) no! But H. K. Chang came to my rescue and convinced me of the opportunities of a clinical/translational environment such as Mayo. And so, with a terminal master's in BME, I headed Minnesota-ward for what has become the longest stay of my life thus far.

At Mayo, I became a graduate student in the Department of Physiology and Biophysics (interestingly the department that I now chair). With a new environment came opportunities for my PhD project on phrenic motoneuron and neuromuscular junction (NMJ) plasticity in development. Along with physiological measurements, I delved into the emerging field of fluorescence confocal microscopy, imaging retrogradely labeled phrenic motoneurons. With a comprehensive image analysis and display package called ANALYZE developed at Mayo, I worked with what were then quite large and cumbersome 3D image data sets to assess neuronal architecture. Confocal microscopy also helped me explore changes in NMJ architecture with development and injury.

Although industry felt appealing post-PhD, a simple joking comment from my co-advisor Ken Smithson was insightful as to who I really was: a lab rat! Ignoring the wisdom of moving elsewhere post-PhD, I continued at Mayo in the Department of Anesthesiology. During this time, I was introduced to airway biology, thanks to collaborations between Gary, Jeff Fredberg (Harvard), and anesthesiology colleagues Kai Rehder, David Warner, and Tony Jones. It was thus a timely and fortuitous arrival of Mathur Kannan from the University of Minnesota for a sabbatical to explore mechanisms of calcium regulation in airway smooth muscle. With my imaging experience, it was not long before Kannan and I were spending evenings and nights doing high-speed real-time confocal imaging of calcium sparks and oscillations in airway cells, establishing the importance of influx/efflux versus sarcoplasmic reticulum

pathways, and how they are affected by bronchoconstrictors versus relaxants such as beta-agonists, nitric oxide, or anesthetics. What I lost in sleep, I gained in crystallizing my now longstanding interests in the airway and meeting my wife along the way when she joined us in these experiments as a German clinician/research fellow “down the hall.”

It was obviously not enough to have shifted from neuromotor control to the airways. Deciding to complicate things (but as much to develop my own niche), I wrote my first R01 grant on mechanisms by which gas anesthetics reduce calcium and contractility of the neonatal heart. But the same environment of anesthesiologists and physiologists at Mayo also reenergized my interests in medical school. As luck would have it, I gained entrance into the University of Minnesota medical school and got my R01 funded. The National Institutes of Health (NIH) was willing to let me keep my R01 while attending medical school 100 miles away, leading to interesting professional and personal times! I came back to Mayo to be a full-time anesthesiology resident but gave up my R01 to focus on clinical training.

By the time I was done with residency, my interests in the lung were much more consolidated, particularly mechanisms of asthma involving airway smooth muscle. Harking back to my graduate school interests on trophic factors, I delved into the idea that neurotrophins such as NGF and BDNF modulate airway contractility and remodeling, and that mesenchymal cells are both sources and targets—concepts that became longstanding grants focused on inflammation and asthma in adults, and neonatal airway reactivity and fibrosis following perinatal insults such as oxygen and CPAP (the latter a longstanding collaboration with Richard Martin at Case). Over the past 15 years, we have focused on several themes (largely in airway smooth muscle) including sex steroids, unexpected mechanisms such as the calcium-sensing receptor or nicotinic receptors, and the roles of aging and senescence in lung disease. Such projects have helped me mentor trainees and develop collaborations in diverse fields including physiology, engineering, anesthesiology, pulmonary medicine, ob/gyn, pediatrics, neonatology, and surgery. I also helped lead a T32 on lung physiology and BME.

Extramurally, I am active in multiple communities, including APS, serving as past Respiration Program Committee chair; associate editor of *American Journal of Physiology—Lung Cellular and Molecular Physiology*, and a past editorial board member of the *Journal of Applied Physiology*. I am also involved

in pulmonary medicine (American Thoracic Society), and anesthesiology (Association of University Anesthesiologists, Foundation for Anesthesia Education and Research and American Society of Anesthesiologists). I am the current chair of the NIH Lung Cellular and Molecular Immunology Study Section. For even more fun, my wife and I like to travel when we can bear to separate ourselves from the many cats that rule our household, and I can indulge in my hobby of photography (yes, I do have a drone!).

As a physiologist and clinician (particularly an anesthesiologist), it is natural for me to state unabashedly that *physiology is medicine!* CPHYS is in a position of strength thanks to its association with APS and importantly *you*: the large APS membership that includes many (if not all) leaders in just about every aspect of physiology. Your continued contributions, and the introduction of your current and former trainees to CPHYS, will greatly help maintain the pipeline of engagement (*today's trainee will be tomorrow's authority*). In that spirit, as editor, I look forward to working with *all* of you to help me realize an overall vision of consolidating and enhancing the reputation of CPHYS as *the* publication hub and resource for interdisciplinary physiology across the translational spectrum: from fundamental discoveries that inform patient care to integrative clinical medicine that informs future discoveries. Thank you. ●

## Y. S. Prakash Biography

Dr. Y. S. Prakash is Professor of Anesthesiology and Physiology, and Chair of the Department of Physiology and Biomedical Engineering at Mayo Clinic, Rochester, Minn. Prakash is a clinician-scientist with training in engineering, physiology, and anesthesiology. He leads a longstanding research program focused on lung diseases across the age spectrum, from airway reactivity and fibrosis in prematurity to lung diseases in aging. He is active in multiple communities: physiology (associate editor of *American Journal of Physiology—Lung Cellular and Molecular Physiology*), pulmonary medicine (American Thoracic Society), and anesthesiology. He currently chairs the NIH Lung Cellular and Molecular Immunology Study Section. Prakash is married to Christina Pabelick, a pediatric anesthesiologist and clinician-scientist.

# Publications

## Current Calls for Papers

### *Physiological Genomics*

- Physiology of Cell State Transitions  
*Deadline: June 30, 2019*
- Big Data Integration to Understand Complex Disease  
*Deadline: December 31, 2019*
- The Microbiome and Metabolic Health  
*Deadline: December 31, 2019*

### *Journal of Neurophysiology*

- 50 Years of Modeling Neural Activity: Celebrating Jack Cowan's Career  
*Deadline: June 30, 2019*
- International Motoneuron Society  
*Deadline: June 30, 2019*
- Modularity and Compositionality in Motor Control: Acknowledging Emilio Bizzi  
*Submission deadline: June 30, 2019*
- Auditory and Vestibular Efferents  
*Deadline: December 31, 2019*
- Modulation of Dynamic Neural Networks: From Sensory Inputs to Motor Outputs  
*Deadline: December 31, 2019*
- Society for the Neural Control of Movement  
*Deadline: December 31, 2019*

### *Advances in Physiology Education*

- K–12 Outreach
- Curricular Integration of Physiology

### *AJP—Cell Physiology*

- Cell Physiology of Germ Cells  
*NEW deadline: June 30, 2019*
- Channels and Transporters in Cell Signaling  
*NEW deadline: June 30, 2019*
- Metabolism, Oxidative Stress and Cell Signaling  
*Deadline: June 30, 2019*
- Roles of the Cytoskeleton in Striated Muscle  
*Deadline: June 30, 2019*

### *AJP—Gastrointestinal and Liver Physiology*

- The Gut Microbiome: A Virtual Organ  
*Deadline: April 30, 2019*
- Brain-Gut Interactions  
*Deadline: April 30, 2019*
- Translational Human Physiology and Pathophysiology  
*Deadline: April 30, 2019*
- The Physiology of Immune Therapies and Their Application in Treating Gastrointestinal Cancers  
*Deadline: April 30, 2019*

### *AJP—Lung Cellular and Molecular Physiology*

- Electronic Cigarettes: Not All Good News?  
*NEW deadline: December 31, 2019*

### *AJP—Regulatory, Integrative and Comparative Physiology*

- Cardiovascular and Neural Adjustments to Exercise in Chronic Disease States  
*Deadline: April 1, 2019*
- Mechanisms Underlying Greater Propensity for Cardiovascular Disease in High Risk Populations  
*Deadline: June 1, 2019*

### *AJP—Renal Physiology*

- Epigenetics and MicroRNAs in Kidney Physiology and Pathophysiology  
*Deadline: June 30, 2019*
- Circadian Rhythms or Time-of-Day Effects in Renal Physiology, the Urinary System, Blood Pressure or Volume and Electrolyte Regulation  
*Deadline: June 30, 2019*
- Sex and Gender in Renal Health and Function  
*NEW deadline: June 30, 2019*
- Inflammatory Mediators in Kidney/Bladder Diseases, and in Hypertension  
*NEW deadline: June 30, 2019*
- Mechanism and Treatment of Renal Fibrosis  
*NEW deadline: June 30, 2019*
- Renal Hemodynamics  
*Deadline: December 31, 2019*

For a complete list of current Calls for Papers, visit the APS website: <https://www.physiology.org/calls>. ●

# Membership

## New Regular Members

\*transferred from student membership

**Warren Joseph Alilain**

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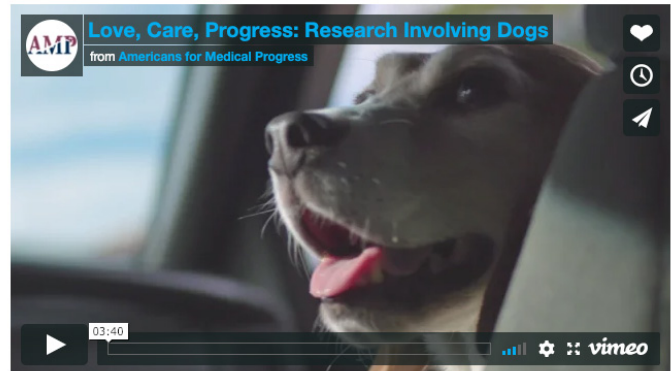
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# Science Policy

## New Video on Nonhuman Primate Research



Americans for Medical Progress (AMP) has a new video that takes viewers inside a nonhuman primate research facility, highlighting the critical role these animals play in health research. The five-minute video is part of a series called *Love, Care, Progress*. It includes interviews with researchers, animal caregivers, and others charged with overseeing the welfare of research animals.

An earlier video in this series highlights the role of dogs in research to advance both human and animal health. Both videos and a factsheet on research with non-human primates are available at <https://www.amprogress.org/love-care-progress-videos/>. ●

## APS JOURNALS

## PHYSIOLOGY.ORG/SUBMIT

APS has eliminated color figure fees in all APS-published journals, and page charges have been replaced by a fixed article fee.

Our members now enjoy a discounted rate on the fixed article fee.



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# Committee Reports

## Joint Program Committee



Robert Hester, Joint Program Committee Chair

### Experimental Biology 2018

The 2018 EB Meeting was held in San Diego, April 21–25, 2018. Participating societies were APS, AAA (anatomy), ASBMB (biochemistry), ASIP (pathology), and ASPET (pharmacology). APS hosted seven guest societies: American College of Sports Medicine (ACSM), American Federation

for Medical Research (AFMR), Brazilian Physiological Society (SBFiS), Biomedical Engineering Society (BMES), the Microcirculatory Society (MCS), the Society for Redox Biology and Medicine (SfRBM), and the Physiology Society (Physoc). Overall paid scientific registration across all societies totaled 9,448, with 1,784 ancillary registrants. APS had 384 sessions in total: 234 poster sessions, 68 symposia, 51 featured topics, 18 lectures, 3 workshops, 1 refresher course, 8 special sessions, and 1 undergraduate poster competition session.

The meeting opened with several unique sessions on Saturday, April 21, including the traditional Refresher Course this year on “GI Physiology: Not Just the Gut Anymore.” APS sponsored two unopposed Techniques and Technology in Physiology Workshops on Saturday, April 21, titled “Sex and Age as Biological Variables in Physiology Research” and “Transformative Technologies Enabling Ecological Assessment of Human and Wildlife Physiology”. The Tang Prize Lecture was scheduled as the first ever EB-wide plenary lecture on Saturday, April 21. It was presented by Feng Zhang from the Broad Institute of MIT and Harvard University titled “Harnessing Nature’s Diversity for Gene Editing and Beyond.” Following the Tang Prize Lecture, attendees enjoyed an opening reception, which featured 57 Science Outreach Activity and 50 Hot Topic posters along with food, games, and networking.

The Physiology in Perspectives—The Walter B. Cannon Memorial Award Lecture was moved to Sunday, April 22, and was presented by Ole Petersen (Cardiff University).

**Table 1. Abstract submissions by society**

		2018 (San Diego)	2017 (Chicago)	2016 (San Diego)	2015 (Boston)	2014 (San Diego)
<b>On-Time Submissions</b>						
	APS	2,145	2,251	2,194	2,385	2,313
	ASMBM	1,746	1,601	1,360	1,420	1,205
	ASPET	801	753	613	672	619
	ASIP	348	369	349	294	358
	ASN	–	1,811	1,759	1,813	1,722
	AAA	515	479	410	494	494
	EB (teaching)		44	31	45	67
	ASBMB (Invited)	124	125	174	189	173
	AAA (Invited)	68	92	89	72	91
	<b>Total</b>	<b>5,747</b>	<b>7,525</b>	<b>6,979</b>	<b>7,384</b>	<b>7,042</b>
<b>Late-Breaking Submissions</b>						
	APS	284	227	225	220	215
	ASMBM	243	222	157	182	217
	ASPET	95	114	87	85	95
	ASIP	41	41	35	49	68
	ASN	–	211	235	187	186
	AAA	57	49	43	52	84
	<b>Total</b>	<b>720</b>	<b>864</b>	<b>782</b>	<b>775</b>	<b>865</b>
<b>GRAND TOTAL Submission Abstracts</b>		<b>6,467</b>	<b>8,389</b>	<b>7,761</b>	<b>8,159</b>	<b>7,907</b>



The Henry Pickering Bowditch Memorial Award Lecture was moved to Monday, April 23, and was presented by Yatrik Shah (University of Michigan).

APS also sponsored four Integrative Symposia Systems:

- Bioartificial Organs: Using Donor and synthetic Scaffolds
- Extracellular Matrix Remodeling in Metabolic Diseases
- Tissue-Distributed Control of Sex Differences in Diabetes and Cardiovascular Disease
- Ischemic and Hypoxic Conditioning: Potential for Protection of Vital Organs

The APS President's Symposium Series, organized by Dennis Brown around the theme of *Exosomes the New Frontier*, included three symposia:

- Cell Biology of Exosomes
- Pathophysiology of Exosomes
- Exosomes in Diagnostics and Therapeutics

The Nobel Prize Award Lecture, presented by Leland Hartwell of Arizona State University, was titled "A Life of Learning" and focused on the importance of science education. The Nobel lecture was followed by a trainee reception where attendees could meet and greet the Nobel lecturer.

**Table 2. Registration breakdown by registrant category**

Registration Type	EB 2018-San Diego		EB 2017-Chicago	
			Total	Percent
Member	3,694	33%	5,011	36%
Retired Member	102	1%	134	1%
Retired Nonmember	22	0%	28	0%
Nonmember	618	6%	817	6%
Postdoc Member	648	6%	656	5%
Postdoc Nonmember	268	2%	390	3%
Grad Student Member	1,475	13%	2,048	15%
Grad Student Nonmember	818	7%	1,313	9%
One Day Member	166	1%	270	2%
One Day Nonmember	67	1%	124	1%
<b>Total Paid Scientific</b>	<b>7,803</b>		<b>10,791</b>	<b>77%</b>
Undergraduate Member	757	7%	621	4%
Undergraduate Nonmember	888	8%	1,115	8%
High School Student	509	5%	416	3%
High School Teacher Member	76	1%	81	1%
High School Teacher Nonmember	65	1%	53	0%
<b>Total Paid Undergrad/High School</b>	<b>2,295</b>		<b>2,286</b>	<b>16%</b>
Exhibitors	831	7%	795	6%
Guest of Exhibitors	141	1%	100	1%
Guest	42	0%	35	0%
Press	17	0%	16	0%
Blogger	5	0%	8	0%
<b>Total Paid Ancillary Registration</b>	<b>1,036</b>		<b>954</b>	<b>7%</b>
<b>Grand Total Registration</b>	<b>11,134</b>		<b>14,031</b>	

A total of 6,467 abstracts were submitted and scheduled for the meeting across all societies, including 5,747 on-time and 720 late-breaking abstracts. Table 1 provides a breakdown of on-time and late-breaking abstracts programmed over the past five years. The meeting experienced a decrease in submissions and attendance due to the departure of the American Society for Nutrition.

## Experimental Biology 2019

The Joint Program Committee (JPC) met at EB 2018 on Saturday, April 21 and Tuesday, April 24, to begin organizing EB 2019, which will be held Saturday, April 6, through Tuesday, April 9 in Orlando, Fla. Of note is that EB 2019 will be a shortened meeting, with the elimination by all societies of Wednesday programming.

The JPC met again on April 25–26, 2018 in Crystal City, Va. to schedule rooms by day and time for the platform sessions, and to minimize scientific overlap. EB 2019 will continue to feature a plenary Tang Lecture on Saturday evening, the Cannon Lecture on Sunday, Bowditch on Monday, and the Nobel Prize Award lecture. In addition, professional development sessions organized by the Trainee Advisory, Women in Physiology, and Career Opportunities committees are scheduled for 7–8 a.m. Sunday through Tuesday.

The JPC discussed survey responses both from EB-wide participants and the APS-specific survey. Many comments pertained to disappointment with the mobile app and with the lack of a dedicated *Publishers Row* on the exhibit floor.

The JPC discussed forming a task force to unify the topic category list, making it easier for submitters to find the appropriate topics for their research. The task force will be chaired by Sean Stocker, chair of the Section Advisory Committee (SAC), and will be comprised of a diverse group from both JPC and SAC.

The former Integrative Physiology Symposium series has been renamed as Experimental Biology Symposium

Series and expanded from the traditional four sessions to six, cross-society and cross-sectional topics cover the following areas:

- Oxidative stress and posttranslational modification of protein thiols in cell signaling.
- Aquaporins—more than water under the bridge.
- Carotid body sensing—more than just an O<sub>2</sub> sensor.
- Metabolism, organ cross talk, microbiome, and mechanisms.
- Brown adipose tissue—the fat that makes you thin.
- Cross talk among myofibers, microvessels, and motor nerves during skeletal muscle regeneration.

EB 2019 will feature a collaborative presidential symposium series organized by both APS and ASPET on the microbiome. There will be a series of three symposia held from 8:30 to 10:00 a.m. Sunday through Tuesday and a Saturday workshop from 1 to 3 p.m.:

- Workshop on Microbiome Research: What You Need to Know
- APS-ASPET Presidential Symposia Series: Microbiome. Gut Microbiome and Metabolic Disorders
- APS-ASPET Presidential Symposia Series: Microbiome. Gut Microbiota: A Chemical Factory
- APS-ASPET Presidential Symposia Series: Microbiome. Microbiota in Action: The Gut and Beyond

An additional Saturday workshop is scheduled for 3:15–5:15 p.m. titled “Writing Good Multiple Choice Questions: A Hands-on Workshop” and chaired by Dee Silverthorn of the University of Texas at Austin.

The Cannon Lecture will be given by Peter Aronson. The Bowditch Lecture will be given by Jennifer Pluznick. The Nobel Prize Award Lecture will be given by Peter Agre.

*Council accepted the report of the Joint Program Committee.* ●

# Positions Available

**Assistant Professor:** The Department of Biological Sciences at Ohio University in Athens, Ohio invites applications for a full-time, tenure-track position in evolutionary, comparative or functional genomics. We are interested in candidates who combine experimental and computational methods, and applicants who investigate model or non-model organisms, and have expertise in biostatistics, including Bayesian methods, and in analyzing large genomic datasets. The ideal candidate will have postdoctoral experience in genomics or bioinformatics and teaching experience at undergraduate or graduate levels. The assistant professor will be expected to establish a strong, extramurally funded research program and to collaborate with faculty from a broad-based biology department. Faculty members in the department are responsible for teaching and mentoring both undergraduate and graduate students; student advising; conducting scholarly research; and providing service to the university and/or department. Depending on the assistant professor's area of interest, teaching for this position will include the appropriate portion of a second semester introductory class (ecology, evolution, animal body systems) and two upper-division courses based on their research expertise that fill teaching needs in the department. *Minimum qualifications.* PhD in biological sciences or a closely related field (foreign educational equivalent acceptable) at time of application and demonstrated research productivity. Ohio University is committed to creating a respectful and inclusive educational and workplace environment. Ohio University is an equal access/equal opportunity and affirmative action employer with a strong commitment to building and maintaining a diverse workforce. Women, persons of color, persons with disabilities, and veterans are encouraged to apply. Apply at <http://www.ohiouniversityjobs.com/postings/29427>.

**Assistant/Associate Professor:** The Department of Cellular and Integrative Physiology is seeking applications from candidates for a faculty position at the level of assistant or associate professor. Candidates should employ modern genetic, cellular, molecular, electrophysiological and/or integrative approaches to address questions related to physiology or pathophysiology. We are interested in individuals who apply new and innovative state-of-the-art techniques to address and complement the integrative approaches already ongoing in the department. Priority will be given to candidates with an extramurally funded research program. The successful candidate

will also be expected to contribute to teaching medical and graduate students. Outstanding candidates in all areas of physiology will be considered, with special consideration given to investigators who will complement existing strengths of the department, which include cardiovascular, cardiopulmonary and renal physiology. Candidates must have a PhD, MD or other equivalent doctoral degree with relevant postdoctoral experience. Highly competitive salary and startup packages, including new state-of-the-art laboratory space, are available. The Department of Cellular and Integrative Physiology is nationally and internationally recognized in the areas of cardiac physiology, neural control of circulation, renal physiology, and integrative physiology. The department is located in a new building, the Durham Research Center (289,000 sq. ft.), which houses 116 research laboratories. An adjacent second tower (264,000 sq. ft.) with 100 research laboratories further enables multi-departmental and multi-disciplinary research interactions. Omaha boasts a metro area population of over 800,000, with a vibrant downtown area, excellent art and entertainment opportunities, outstanding school system, and low cost of living. For more information about the department, please visit our website at <http://www.unmc.edu/physiology/>. Applications are being accepted online at <http://unmc.peopleadmin.com/postings/41568>. For additional information on the position, please contact: Adam J. Case, PhD, Chair, Search Committee Department of Cellular and Integrative Physiology University of Nebraska Medical Center, 985850 Nebraska Medical Center, Omaha, NE 68198-5850; email: [adam.case@unmc.edu](mailto:adam.case@unmc.edu); phone: 402-559-3078; fax: 402-559-4438; [www.unmc.edu/physiology](http://www.unmc.edu/physiology).

**Assistant/Associate Professor:** The School of Dental Medicine at LECOM (Bradenton, FL campus) is seeking candidates for a full-time, non-tenure track, 12-month faculty position at the Assistant/Associate Professor of Physiology level. Successful candidates will have a desire to teach and mentor students at the graduate/professional level, including facilitation of problem-based learning (PBL) groups and the delivery of traditional lectures. In addition, faculty members are expected to develop an active and independent program of scholarship. All areas of expertise will be considered. The successful applicant will have a doctorate level of achievement (PhD, DO, MD, or EdD) and prior experience of 2–5 years teaching physiology to medical or dental students. Preference will be given to individuals with a progressive and innovative teaching philosophy and previous

experience in a small-group teaching or facilitating environment. Additional qualifications to strengthen the applicant include a strong desire to foster learning in an innovative curriculum, advisement and mentorship of dental students, a progressive teaching philosophy, and the ability to contribute to the development of the college through research and service. Faculty rank and salary are dependent on qualifications and experience. *About the LECOM School of Dental Medicine.* The School of Dental Medicine provides investigators and teacher-scholars an exciting environment to develop collaborative and innovative research projects. We value diversity in our faculty, staff and students. The SDM is located in Bradenton, FL, only minutes from beautiful beaches to the west and less than 1 hour from the Tampa-St. Petersburg metropolitan area. *To apply.* Complete an online application at [www.lecom.edu/jobs](http://www.lecom.edu/jobs). At the time of application, please be prepared to submit the following: 1) cover letter, 2) current CV, 3) teaching/mentoring philosophy, and 4) contact information for three professional references. The applicant must also email [hr@lecom.edu](mailto:hr@lecom.edu) the following: a cover letter outlining how he/she would enhance the LECOM family, a statement of teaching philosophy, and contact information for three professional references. EEO/AA/M/F/Vets/Disabled.

**Postdoctoral Fellow:** The Robarts Research Institute, Department of Physiology & Pharmacology at the Schulich School of Medicine, has a position for a postdoctoral scholar to work in the laboratory of Donald G. Welsh, the Rorabeck Chair in Vascular Biology and Neuroscience. We seek a motivated scientist interested in pursuing vascular biology research from the cell to the whole organism. Our research focuses on ion channels (CaV3.1/3.2 and KIR2.1/2.2) and electro-mechanical coupling in cerebral arterial resistance arteries from normal and diseased tissue. We rationalize concepts with computer modeling, then test them on cerebral arteries harvested from humans and genetically modified mice. Key techniques include myography, electrophysiology, biochemistry and magnetic resonance imaging, transgenics and genomics. We seek individuals who recently completed their PhD (within the past 2 years) and with experience in vascular biology and or molecular biology. All applicants with a strong command of English are encouraged to apply. The successful candidate will possess: a PhD degree in physiology, medical

biophysics, or neuroscience obtained within the past 2 years, with a strong background in live tissue handling; a strong understanding of research design, research methodology and data analysis; evidence of experience in preparation and publication of manuscripts; excellent oral communication and technical writing skills; excellent computer skills (Microsoft Office, EndNote, CorelDraw, SigmaPlot); ability to take guided initiative and to work in an organized fashion with flexibility in shifting between independent and collaborative work; ability to assist in the training of undergraduate and graduate students; and demonstrated collegiality, professionalism and interpersonal skills. The postdoctoral scholar duties will include but are not limited to organizing/implementing a focused research agenda, developing new methods and approaches, data collection and interpretation, writing scientific articles, and mentoring graduate/undergraduate students. Candidates are expected to be effective communicators and to present their research findings to peers at local, national and international meetings. The successful candidate will be integrated into a postdoctoral training program and given opportunities to develop teaching experience. Competitive salary and benefits including universal healthcare and a health spending account are provided. Postdoctoral scholars are expected to apply for scholarships as applicable. An initial 2-year term will be offered with opportunity for an extension. Applications will be reviewed as received until the position is filled. Please send a letter of application including a 1-page description of research experience and interests, an updated curriculum vitae, and names and contact information of three references to [dwelsh@robarts.ca](mailto:dwelsh@robarts.ca). Positions are subject to funding availability. Applicants should have fluent written and oral communication skills in English. The university invites applications from all qualified individuals. Western is committed to employment equity and diversity in the workplace and welcomes applications from women, members of racialized groups/visible minorities, aboriginal persons, persons with disabilities, and persons of any gender identity or gender expression. In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents. Non-Canadian citizens or non-permanent residents will require a valid work visa prior to employment. ●