

THE Physiologist MAGAZINE

MARCH 2021

CULTIVATING A BRAND
TO MAKE YOUR SCIENCE
STAND OUT **22**

HOW THE PANDEMIC
CHALLENGES THE
WORK-LIFE BALANCE
FOR MANY WOMEN **28**

BREAKING **AWAY**

Benjamin Miller, PhD, loves cycling and science—
which allow him to challenge his
body and mind.



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experts in the field

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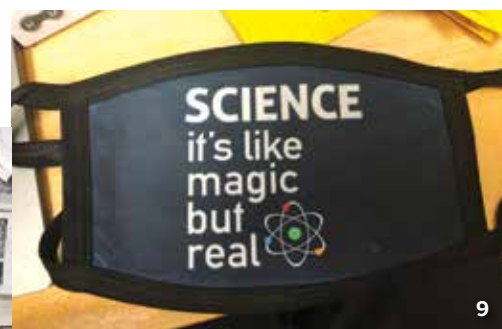
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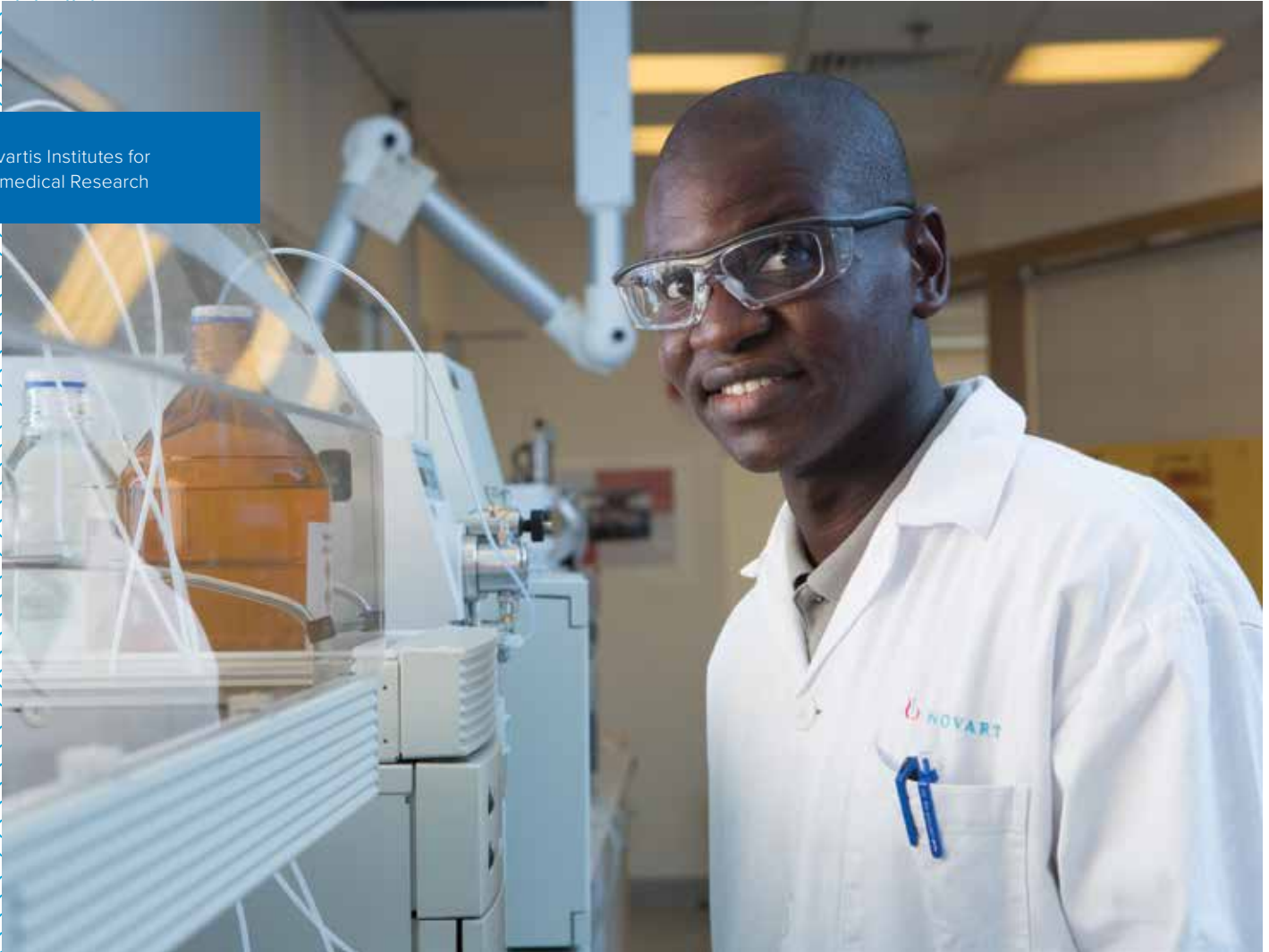
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Patricia E. Molina, MD, PhD, FAPS, shares her optimism for 2021, with U.S. leaders focused on science and a spotlight on women in science.

Novartis Institutes for
Biomedical Research



Featured Careers at Novartis

The American Physiological Society (APS) and Novartis Institutes for Biomedical Research (NIBR) have partnered for a campaign promoting industry career development. APS members will have the opportunity to explore career opportunities for physiologists in the biopharmaceutical industry and receive a unique view of NIBR's physiology-based research areas, postdoctoral fellowships and internship programs.

PHYSIOLOGY 2023 Takes Shape

BY SCOTT STEEN, CAE, FASAE



It's been just over a year since we announced that we are launching a new annual meeting. In that time, APS members and staff have been working diligently to build a world-class meeting that will be a beacon for the physiology community—one that attracts top scientists, provides an exceptional scientific program, presents a “must attend” experience and elevates the brand of physiology globally.

Now with only two years to go, we hosted a town hall meeting to answer your questions about our new annual meeting, PHYSIOLOGY 2023. Here are some of the most asked questions and their answers:

When and where will the meeting be? Will there be options to attend virtually?

The site selection process will begin later this spring. We will be searching for a location that is convenient, affordable and an attractive

destination. PHYSIOLOGY 2023 will take place over three days in a similar late-March to early-May timeframe as Experimental Biology (EB). The format will be Thursday to Sunday. The meeting

will also include significant virtual programming, allowing us to welcome more international attendees and extend the meeting experience for all attendees beyond the confines of the live event.

Who was involved in the planning?

A dedicated task force of APS members—dubbed Team 2023—led the design process. The 14 team members represent the full scope of APS, including early-career trainees and young professionals, section and committee representatives, and members who have served on the APS Council and in the Executive Cabinet. The group worked with APS staff to completely rethink what a scientific meeting could be, from session programming to invited speakers and

events. Team 2023 has conducted more than 70 member interviews and spent more than 450 hours planning the meeting.

Will APS partner with other scientific societies to increase the breadth of science offered?

While our new meeting will not be a joint annual meeting like EB, we realize that many members valued the opportunity to hear content from partner organizations. We will look for partners who will broaden and strengthen our content offerings, as well as add to the prestige of the meeting and the discipline. Our new annual meeting will also allow us to partner with other types of prestigious scientific institutions.

How does APS plan to involve international scientists in the meeting?

Scientific discovery does not stop at national borders, so we believe that attracting more international participation in PHYSIOLOGY 2023 and beyond will make for a richer experience for all. To accomplish this, we will explore new international partnerships and offer an expansive virtual meeting experience.

How will the scientific program be decided?

In line with the Team 2023 mandate to find new ways to elevate the scientific content, we will establish a new Program Working Group (PWG) that will be charged with bringing top scientists to the meeting to present talks at both general and “game changer” sessions. The PWG—composed of section representatives and similar to our current Joint Program Committee—will be responsible for the bulk of the scientific programming, including presentations of oral abstracts and posters. The PWG will also be charged with safeguarding scientific quality at the meeting, promoting cross-sectional content and ensuring enough diverse content to attract the entire physiology community.

While Team 2023 has completed its task of developing a new meeting framework, the work of creating PHYSIOLOGY 2023 has just begun. There are many details yet to be decided and many questions left to explore. As always, I want to hear from you. Visit www.physiology.org/PHYS23 to leave your questions and suggestions and to learn more about what's in store. ☎

Scott Steen, CAE, FASAE, is executive director of the American Physiological Society.

physiology
2023



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Your personalized My APS Dashboard contains new APS section and interest group Hubs. Stay up to date on award deadlines, upcoming events, topics related to your field at the APS annual meeting at Experimental Biology and so much more!

Check out your Hubs today at
physiology.org/MyHubs.



As the pandemic continues, researchers across disciplines remain committed to their work. Here's a glimpse of what scientists were talking about in early 2021.

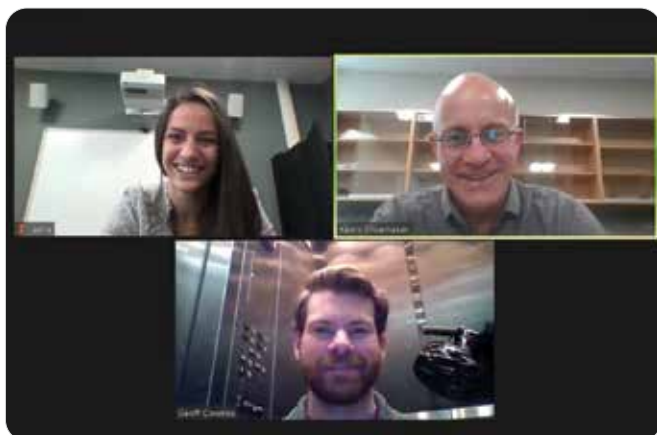
What are you most looking forward to in 2021? Share your story with us and it may appear in the next issue of *The Physiologist Magazine*. Email your thoughts—and links to your tweets and posts—to tphysmag@physiology.org.



NVRL/LBHH

@LbhhNvrl

With Zoom, Geoff Coombs being trapped in an elevator for 90 min cannot stop a research meeting anymore.



8:00 PM · Dec 6, 2020



Summer Blanco

@summer_blanco

I know this is out there, but hear me out: Nominate marginalized students for competitive academic fellowships. Not just diversity fellowships.

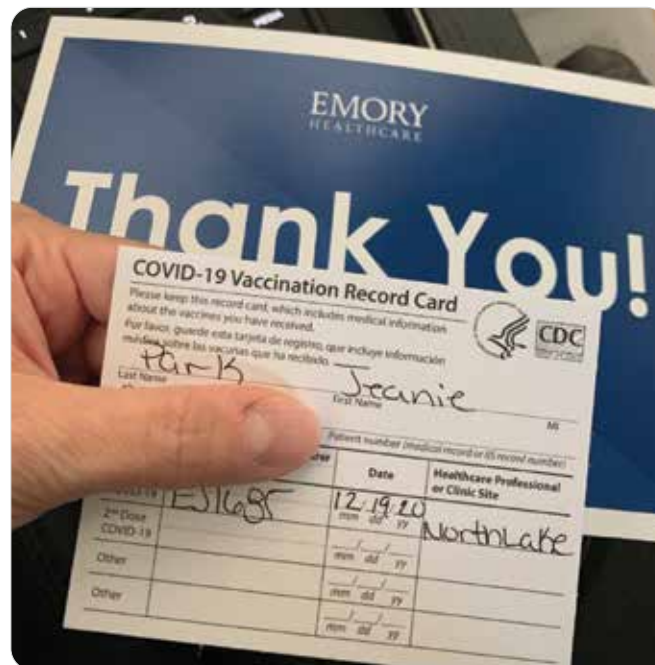
6:04 PM · Jan 25, 2021



Jeanie Park

@JeanieParkMDMS

Dose #2 in my arm. Feeling grateful [#Science](#)



3:11 PM · Jan 9, 2021



Ellen Gillis

@eegillis

Excited to work with [@AJPRenal](#) and [@jenpluznick](#) as part of their new Early Career Reviewer Program!



12:21 PM · Jan 15, 2021



Amanda R Merner

@armerner_psych

Me getting a rejection letter for something in first year of grad school:



Me getting a rejection letter in my 4th year of grad school: 🤔😞😭

The most important skill I've learned in grad school is how to take rejection without feeling like a failure. It's so great.

8:47 AM · Jan 23, 2021



Katie Wilkinson

@DrK_Wilkinson

The first [@APSPHysiology](#) DEI session was a really nice overview of the need to enroll diverse participants in clinical trials and how history makes this tough to do by LaShell Robinson. Thanks to moderating a good Q&A session [@AdrienneLeste19](#).

11:43 AM · Jan 21, 2021



Stephanie W Watts

@DrStephWatts

If there is EVER a time Science needs to be recognized as the glorious, incredible and life-saving thing it is, now is the time.



7:10 AM · Dec 23, 2020



akp

@akpneuro

One of the best questions to ask older grad students during Grad School Interviews™ this season is how their program has supported them through the pandemic. Did they offer funding extensions? More resources?.. etc.

8:48 PM · Jan 26, 2021

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[@APSPHysiology](#) [@SciPolAPS](#) [@APSPublications](#)

RESEARCH FIZZ



Dysregulation of endocytic machinery and ACE2 in small airways of smokers and COPD patients can augment their susceptibility to SARS-CoV-2 (COVID-19) infections

Compromised airways of people who smoke and have chronic obstructive pulmonary disease (COPD) can increase their susceptibility to COVID-19 infection.

American Journal of Physiology-Lung Cellular and Molecular Physiology, November 2020
<https://doi.org/10.1152/ajplung.00437.2020>

STATS & FACTS

15.7

The percentage point drop of papers with female first authors deposited in medRxiv between December 2019 and April 2020.

Nature Index



MENTORING Q&A | NEW NETWORKING

Relationship Building

How to make the most of networking as a graduate student.

Each issue we ask a trainee to pose their career questions to an established investigator and mentor. Here, Yemi Semola, a graduate teaching assistant in veterinary and biomedical sciences at Oklahoma State University in Stillwater, asks Craig A. Emter, PhD, an associate professor at the University of Missouri in Columbia, about networking as a graduate student, particularly in a virtual world.

Q: How do you actually go about networking and holding conversation with someone from a different field of research?

A: Get them talking. I introduce myself and then get my colleague to discuss their area of expertise. It facilitates

“Trouble-shoot your normal ways of networking to adapt and ensure the experiences and interactions you normally expect at an in-person meeting happen during the virtual meeting or at a later time after the conference has ended.”

the identification of areas where our research expertise overlaps or is complementary. Be an engaged listener and the new collaboration will take care of itself!

Q: In what ways can I as a graduate student promote physiology and present at Experimental Biology (EB) to fellow graduate students who are not in the same field as me?

A: Know the societies well. Then, when you are casually having a conversation with a fellow graduate student from another research area you can say, “You know, I bet the Gastrointestinal

& Liver Section (or insert appropriate society or section here) of the American Physiological Society would be really interested in your project. Have you ever considered submitting your work to Experimental Biology?”

Q: With the cancellation of physical conferences because of the pandemic, in what ways can I obtain the same benefits from a virtual conference? What is APS doing to ensure this?

A: APS is doing a great job of providing as interactive an experience for EB 2021 online as they possibly can. I encourage trainees

to attend the live featured topics and symposia and ask questions during the sessions.

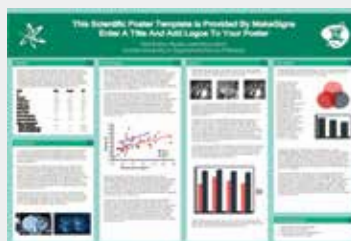
Attendees can also leave notes and comments at the posters on message boards. Don’t be afraid to go a step further; if your question does not get answered during specific live sessions, write it down and contact the presenter in a personal email to set up a phone call or online meeting. Trouble-shoot your normal ways of networking to adapt and ensure the experiences and interactions you normally expect at an in-person meeting happen during the virtual meeting or at a later time after the conference has ended. 📧

Got a career question you’d like to submit? Email it to education@physiology.org. We may use it in an upcoming Mentoring Q&A.

4 Quick Tips to Enhance Your Virtual Poster Presentation at Experimental Biology

1. Upload your poster PDF and a short audio narration of your findings.
2. Attend sessions, visit other posters and network while attendees watch your prerecorded poster presentation. You are free to move about the conference!
3. Check in periodically to respond to comments or questions attendees have posted.
4. Enjoy the satisfaction of knowing that more people have had the opportunity to engage with your work.

Check your email for more info from the Cadmium platform on uploading your poster.



STATS & FACTS

47%

The portion of members of the American Association for the Advancement of Science who use social media to discuss or follow science.

Pew Research Center

RESEARCH FIZZ



A ketogenic diet combined with exercise alters mitochondrial function in human skeletal muscle while improving metabolic health

Researchers found a ketogenic diet combined with exercise led to weight loss and changes in muscle mitochondrial function and efficiency that could especially benefit people with insulin resistance.

American Journal of Physiology-Endocrinology and Metabolism, December 2020

<https://doi.org/10.1152/ajpendo.00305.2020>

STATS & FACTS

38.6%

The portion of scientists on Twitter who are female, a greater representation than is seen in published academic papers.

PLOS ONE

STATS & FACTS

17%

The percent larger decline in time devoted to research reported by scientists with at least one child five years old or younger, compared to other scientists during the pandemic.

Nature Human Behaviour

RESEARCH FIZZ



Heat-not-burn tobacco products: an emerging threat to cardiovascular health

Some people may explore alternatives to traditional cigarettes and vaping products such as “heat-not-burn” tobacco devices, which may threaten cardiovascular health.

American Journal of Physiology-Heart and Circulatory Physiology, December 2020

<https://doi.org/10.1152/ajpheart.00708.2020>

STATS & FACTS

8.5

The greater number of hours per week spent on domestic duties by female physician-researchers relative to those spent by comparable male physician-researchers.

Annals of Internal Medicine

POLICY IQ | U.S. CONGRESS

Changes Abound to Congressional Makeup

This year brought both changes and challenges to the nation’s capital. On January 6, a violent mob briefly seized the Capitol in a failed attempt to block the formal congressional counting of the electoral vote. This led to heightened security for the January 20 inauguration of President Joe Biden on top of the expected coronavirus precautions. The pandemic remained out of control even before the arrival of more contagious variants first detected in the United Kingdom and South Africa.

Meanwhile, there was confusion and many problems with distributing and administering the newly approved vaccines. As a result, the nation continues to face widespread disruptions to schools and businesses—including research institutions. The question remains whether the Biden administration and a sharply divided Congress will see eye-to-eye on how to address the nation’s pressing problems, particularly when the Senate was conducting President Trump’s impeachment trial in mid-February.

CONGRESSIONAL POWER

When the 117th Congress convened in January, neither party had firm control in either chamber. Despite Biden’s compelling win, Democrats lost a dozen seats in the House of Representatives, leaving

them with a razor-thin majority: 222–214. With three Democratic representatives expecting to take appointments in the new administration, the Democrats’ majority may be further reduced until their replacements are seated.

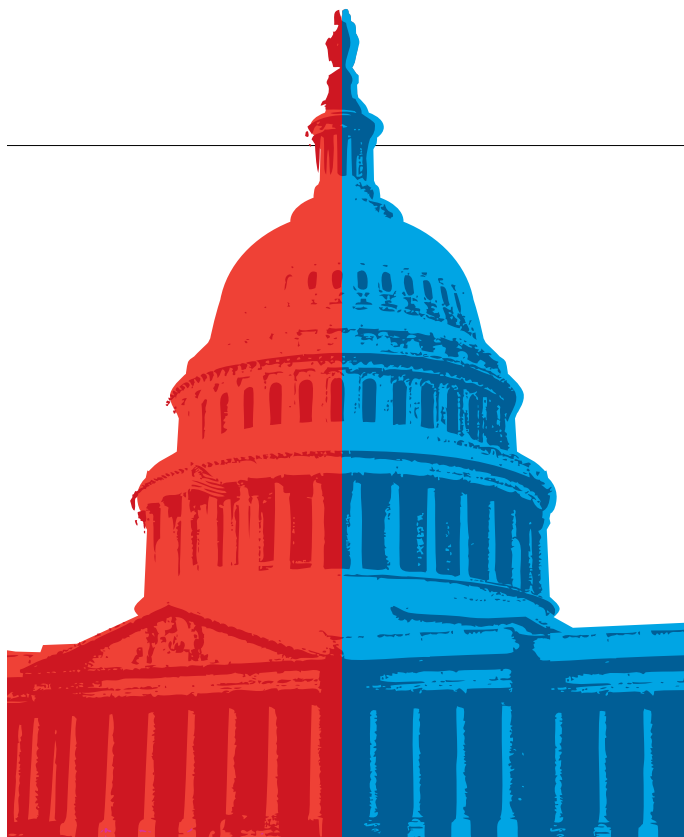
Democrats picked up one Senate seat on election night, but which party would control the chamber was left undecided until two run-off elections in Georgia in January. Democrats Raphael Warnock and Jon Ossoff ultimately won both Georgia Senate seats, resulting in a 50–50 split between Democrats and Republicans. Meanwhile, California Gov. Gavin Newsom appointed California Secretary of State Alex Padilla to replace Sen. Kamala Harris. After Harris was inaugurated as vice president, she swore in Warnock, Ossoff and

Padilla. This gave Democrats nominal control, but the power-sharing rules that would govern the Senate remained a bone of contention between Majority Leader Chuck Schumer (D-NY) and Minority Leader Mitch McConnell (R-KY) well into January. The deadlock severely limited Senate operations because, without this agreement, Democrats could not take over as committee chairs and a single senator could block Senate consideration of bills or the confirmations of Biden’s cabinet secretaries.

COMMITTEE LEADERSHIP

Several committees responsible for providing oversight or funding for research agencies got new leaders in the 117th Congress. On the House side, the Democratic and Republican caucuses chose new committee leaders in late November and early December.

The situation was more complicated on the Senate side. Typically, the party in the majority not only wields the committee gavel but also has more members on the committee itself, in proportion to the size of its majority. The last time there was a 50–50 split in the Senate, the parties had the same number of members on the committee. In that case, a Republican vice president had the tie-breaking vote so committee chairs were Republicans and the ranking members



were Democrats. It is expected that a comparable arrangement will be put into place this time. Even though the Democrats will hold the gavel, on contentious issues it may be very difficult to approve bills in committee so that they can go to the Senate floor.

HOUSE DEMOCRATS

The House Democratic Caucus chose Rep. Rosa DeLauro (D-CT) as the new chair of the House Appropriations Committee. DeLauro also retained the gavel of the Labor, Health and Human Services, Education and Related Agencies Subcommittee, which provides funding for the National Institutes of Health (NIH). DeLauro's interests include mental health, health disparities and women's health. She is also an ovarian cancer survivor.

Rep. David Scott (D-GA) will be the new chair

of the House Agriculture Committee. This is the panel responsible for the Animal Welfare Act (AWA), which is administered by the Department of Agriculture.

HOUSE REPUBLICANS

The House Republican Caucus chose Rep. Glenn Thompson (R-PA) as the new ranking or senior minority party member of the House Agriculture Committee.

Rep. Cathy McMorris Rogers (R-WA) was selected as the new ranking member of the House Committee on Energy and Commerce. This panel has oversight responsibility for NIH. McMorris Rogers' health interests include pediatric conditions, particularly Down syndrome.

SENATE REPUBLICANS

Several senior Republicans retired at the end of the 116th Congress, leaving

vacancies in committee leadership positions. With the Senate under Democratic control, their successors will become ranking members.

Sen. Richard Burr (R-NC) became the ranking member and senior Republican on the Senate Health, Education, Labor and Pensions Committee. This panel has oversight responsibility for NIH. Burr is interested in biodefense and sponsored legislation that created the National Institute of Biomedical Imaging and Bioengineering.

Sen. John Boozman (R-AR) became the ranking member of the Senate Agriculture Committee, the Senate panel with AWA oversight.

DEMOGRAPHIC CHANGES

This Congress is the most diverse in history. Across both chambers, 141 women were elected. However, if Marcia Fudge (D-OH)—nominated by Biden to be housing and urban development secretary—and Deb Haaland (D-NM)—nominated to be interior secretary—are confirmed and resign from their House seats, the number of women will decline slightly.

The 117th Congress also includes 62 legislators who identify as Black; 46 Hispanics; 17 Asian Americans; five American Indians or Alaska Native; and one Native Hawaiian. These numbers may also change depending on which

representatives are tapped for Biden's cabinet or other administrative posts.

NEW MEMBERS WITH SCIENCE BACKGROUNDS

Sen. Mark Kelly, MS (D-AZ), is a former NASA astronaut and naval aviator. He has a bachelor of science in marine engineering and a master of science in aeronautical engineering. Because Kelly ran in a special election, he was sworn in on Dec. 2, 2020.

Sen. Roger Marshall, MD (R-KS), had been serving in the House before his election to the Senate. He is an obstetrician-gynecologist and had been a member of the House Science, Space and Technology Subcommittee on Research and Technology.

Rep. Ronny Jackson, MD (R-TX), is a political newcomer who was elected to represent the 13th district of Texas. Jackson is board-certified in emergency medicine and previously served as White House physician to then-President Trump.

Rep. Mariannette Miller-Meeks, MD (R-IA), served in the U.S. Army and was trained first as a nurse and then as an ophthalmologist. Although she was sworn in, her opponent continued to contest the election in February, which Miller-Meeks won by only six votes.

Rep. Diana Harshberger (R-TN) is a pharmacist, and Rep. Cori Bush (D-MO) is a registered nurse. ☎

RESEARCH FIZZ



Spatial locations of certain enzymes and transporters within pre-invasive ductal epithelial cells predict human breast cancer recurrences

Studying features of breast cancer recurrence may lead to new testing techniques to measure risk factors.

American Journal of Physiology-Cell Physiology, November 2020

<https://doi.org/10.1152/ajpcell.00280.2020>

STATS & FACTS

10.7

The greater number of disease-free life expectancy years at age 50 in women who adopt at least four healthy lifestyle habits compared to women who adopt none.

The BMJ

RESEARCH FIZZ



Diet during early life defines testicular lipid content and sperm quality in adulthood

Research in mice suggests that a high-fat diet early in life may impair male fertility in adulthood.

American Journal of Physiology-Endocrinology and Metabolism, December 2020

<https://doi.org/10.1152/ajpendo.00235.2020>

UNDER THE MICROSCOPE

Rapid Fire Q&A

Lisa Leon, PhD, FAPS, shares her favorite lab mishap story, her guilty pleasures and how she's spending her free time in quarantine.

Q: "Old school" technique you're most proud of mastering?

A: My staff would laugh at my insistence in using an old school shaver on mice (the big ones like they use at the barber shop) even though the sleek, smaller ones have been around for decades. My saying was always "It works great, so why change it?" Once I transitioned into management, I'm pretty sure they purchased the smaller ones the very next day!

Q: Most challenging laboratory technique you've learned to use?

A: I love to perform mouse surgeries and was able to implement a suture closure technique that prevented opening of the laparotomy incision. Game changer!

Q: Favorite lab mishap story that you can share without incriminating the innocent?

A: My lab tech forgot to put the mouse cage lid on in a heating chamber. He was

baffled when the telemetry signal all of sudden dropped off. It turns out he discovered the critical temperature that induces escape behavior in heated mice! Serendipity is an important educational tool when openly embraced.

Q: Best "MacGyver" moment in the lab?

A: I transitioned a large animal anesthesia machine for use in mice—a lot of PE tubing and surgical gloves cut off to make a nose cone saved the day during a time when we didn't have the funds to buy a rodent machine.

Q: If you could meet any scientist (living or dead) who would it be and why?

A: Jane Goodall. I have a bachelor of arts degree in anthropology-zoology and always thought I would study primate behavior for a living.

Q: If you were a model organism, which model organism would you be?

A: *Drosophila*—genetics is a fascinating field.

Q: What do you wish the general public understood about science or research?

A: Translation from laboratory species to humans is a tough road that doesn't always succeed. But that doesn't mean it is not informative. Rather, I would argue the opposite. You can learn as much from failures, and perhaps more, than constant successes.

Q: Favorite book about science?

A: "Why We Get Sick: The New Science of Darwinian Medicine" by Randolph Nesse, MD.



Leon takes up archery as a new sport at a local outdoor range.



Leon's first foray into gardening while volunteering at a local organic vegetable farm created a love of home gardening.

Q: What do people call you?

A: “Leese” is the most common nickname, although my friends in high school used to call me “Leroy” for some unknown reason.

Q: No. 1 guilty pleasure?

A: Homemade vanilla ice cream with Justin's peanut butter cups—killer!

Q: Most influential scientist on your career?

A: Matt Kluger, PhD. He influenced my scientific career as well as how I approach scientific management.

Q: Favorite science-related TV show (fictional or factual)?

A: “Gilligan's Island” because of the professor!

Q: The scientific discovery or invention (made by someone else) that you wish you had made?

A: Post-it Notes.

Q: Biggest misconception about physiology/physiologists in five words?

A: We're nerds without interesting hobbies.

Q: Favorite way to spend a free hour in quarantine?

A: Learning to play the guitar.

Q: Tell us a surprising fact about you.

A: I make almost all of my own food from scratch; it makes travel very difficult for me!

Q: Favorite part of your job?

A: Spending time with colleagues in parts of the world that I never thought I would visit as a scientist.

Q: Next book on your reading list?

A: “Everest: The First Ascent” by Harriet Pugh Tuckey.

Q: Go-to snacks that get you through long days working from home?

A: Homemade moon pies! 🍪

Lisa Leon, PhD, FAPS, is chief of the Thermal and Mountain Medicine Division at the U.S. Army Research Institute of Environmental Medicine in Natick, Massachusetts.



Leon and her husband, Chris, went surfing for the first time on his birthday, and they have been hooked on it ever since.

PUBLISH WITH POLISH | EXPANDING KNOWLEDGE

Know How to Navigate APS Journal Websites for New Discoveries

Navigating through vast amounts of information—finding relevant articles, topics and even specific authors—can be key to any research. The APS Publications website at <https://journals.physiology.org> provides numerous tools to help readers find the exact information they're looking for.

Most obvious is the search function. Journal websites actually have two search bars with different scopes. The topmost search bar (“Search all content”) will search for terms across all APS journals. The second search bar (“Search this journal,” lower on the page and located just above the “Current issue” content) is a journal-specific search that only searches the content of the journal website currently being browsed.

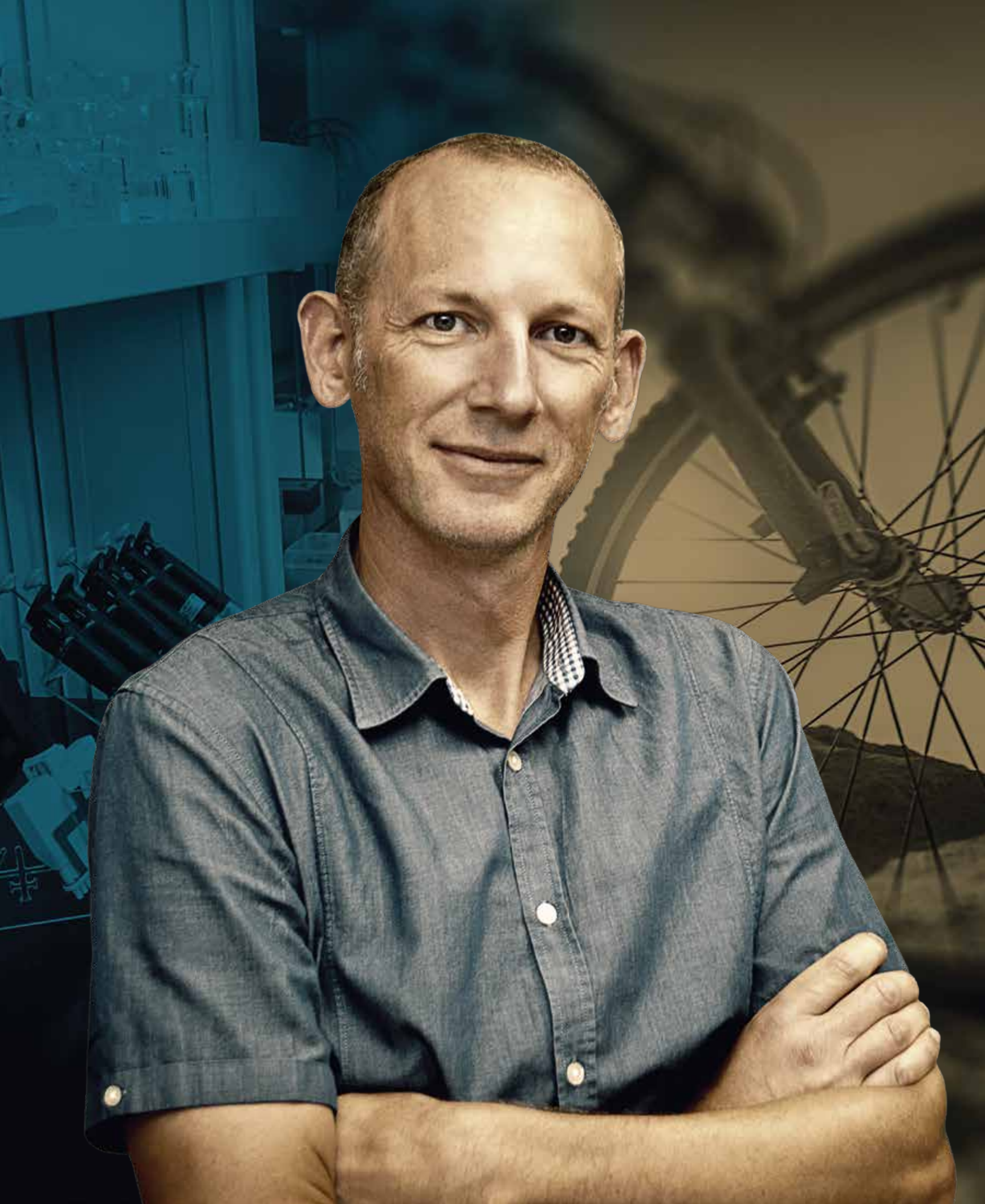
Articles themselves also provide several means of navigation, including:

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BREAKING AWAY

Benjamin Miller, PhD, loves cycling and science—which allow him to challenge his body and mind.

BY KRISTEN DE DEYN KIRK

Benjamin Miller, PhD, was in sixth grade when he first bought a bike, a Schwinn World Sport. The \$200 investment of his own money came after seeing his parents, once avid runners, turn their attention to cycling. He stopped aimlessly gliding through his neighborhood streets in Genesee, Wisconsin, and joined his parents on charity fundraising rides.

He tagged along on the weekends just for the fun of it, he says, until a few years later when varsity practices packed his schedule. He was a starting defender for the Kettle Moraine High School soccer team and, on the basketball team, a starter at every position except center.



Miller at the top of Rollins Pass on the Colorado Trail on the first of a five-day socially distanced mountain bike trip in September 2020.

Miller hopped on a bike again regularly while earning his master's degree in kinesiology—a “bridge year” before he would start working on his MD, he thought. He joined the University of Wisconsin cycling team. He eventually became a category 1 cyclist for mountain biking and a category 2 cyclist for road racing, which is an elite amateur ranking earned by completing numerous races and finishing near the top in most.

Miller still considered cycling a hobby, but his kinesiology grad school colleagues saw him differently—and their vantage point changed the course of his career. In their opinions, and statistically, Miller was fit, the ideal person to study when they needed to compare physically trained human subjects to untrained human subjects. Miller said yes to his colleagues' repeated requests, as his fascination with research—both the results and the

system of questioning, testing and discovering—grew.

“That’s when I knew I wanted to be a physiologist instead of a medical doctor,” says Miller, now a member in the Aging and Metabolism Program at Oklahoma Medical Research Foundation (OMRF). “I found that researching suits the way I think—a lot of ‘big picture,’ lots of moving parts, integrating multiple ideas—and the research process is really how you get to dig into physiology.”

FIGURING OUT HOW TO SLOW AGING

As a postdoc at the Institute of Sports Medicine, part of the Copenhagen Muscle Research Center in Denmark, Miller studied muscle and related protein turnover. He also contemplated problems and solutions he wanted to tackle in his own lab someday. He was drawn to understanding why humans have an inevitable decline in muscle

function and how to prevent that from happening.

“We haven’t figured out why and how to prevent or slow age-related decline of muscle function,” Miller says. “Exercise definitely has a positive effect, but even that is not 100% effective. This is a fascinating problem that impacts everybody.”

Few Americans are willing to exercise one to two hours a day, seven days a week, as Miller does. Most won’t exercise at all, he says. Miller’s goal: Come up with an alternative approach to slow aging in those that cannot exercise to add functional years to people’s lives. He’s not talking about making it possible for someone to live 130 years. “Think health span,” he says, “not lifespan.” Miller wants to help people live healthily and independently during the later 15 to 20 years of their life. For some people, he says, that will only happen by swallowing a pill.

Driving him in every effort is his search for the “right questions” and answering them the right way.

“I found that researching suits the way I think—a lot of ‘big picture,’ lots of moving parts, integrating multiple ideas—and the research process is really how you get to dig into physiology.”

On occasion, Miller sees certain approaches used in science because they’re easy, but they don’t necessarily provide the answers that are needed. “I often ask questions again that we think we already know the answers to,” Miller says. “I don’t do things the easy way in that sense.”

His expertise in using stable isotopes leads him to step beyond transcript data. For example, with polymerase chain reaction (PCR) and RNA-Seq, Miller notes that transcript data show the nucleus of

the cell saying, “This is what should happen.” He instead asks, “What actually happens?”

To find out, Miller and his lab team at OMRF measure the making of proteins and their turnover rate. He’s exploring such factors because, when it comes to aging and muscle, he views a lot of the status quo as contradictory. He aims to resolve those contradictions.

An analogy illustrates Miller’s precision in looking for a solution to aging in muscle: Think of muscle as a smoothie, he says. Take a sample, and you get a mishmash mix, which isn’t helpful when you’re wondering about the possible power of the individual “ingredients.” Miller wants to understand the individual contributions of the blueberries, the bananas and the strawberries, so to speak. So, he has started extracting the individual cell types from muscle to study their protein turnover. He’s doing similar work with brain cells.

Proteins are important because they accumulate damage and can’t be fixed, Miller explains. To keep the body young, you have to turn over proteins and make new ones repeatedly. That is why exercise is important—you adapt to that exercise by making proteins that help you. Understanding the protein



Miller and his team are looking for an alternative approach to slow aging to add functional years to people’s lives.

Miller's goal: Come up with an alternative approach to slow aging in those that cannot exercise to add functional years to people's lives.

remodeling process could point to aging remedies beyond exercise.

Miller's published work with metformin has attracted attention recently, he says, thanks to an upcoming clinical trial investigating the anti-diabetic drug's ability to slow aging. No drug has yet been proven to do so. One would think that with metformin's positive effect and exercise's positive effect, a combination of the two would produce enhanced positive outcomes. Under some conditions, this may not be true, according to Miller's investigations. In fact, the two positives could be a negative. His earlier data show that some people have negative outcomes taking metformin and exercising. He and his team now have an ongoing clinical trial further addressing the combination.

"If a drug has no effect in some people, that's OK. But if it actually has an inhibitory effect, that is not OK, and we need to know," Miller says.

MENTORING OTHERS

Being a mentor has been important to Miller over the years. He has mentored undergraduates through junior faculty, and his lab has a steady state of four to seven trainees at any given time. He also serves as a mentor on many training awards and career development awards for young scientists outside his lab, and he has started junior faculty mentoring

programs at both his previous and current institutions.

"It is hard to say why this is so important to me. I think part of it has to do with the mentoring I received along the way. I benefited so much from my PhD mentor, George Brooks, and I want to do for others what he did for me," Miller says. "I want to help the trainees be the best they can, which is often greater than what they think is possible."

A CLEAR HEAD FOR THE SCIENCE

When he arrived at the Aging and Metabolism program at OMRF, Miller

took a pause of sorts. It was September 2018, and he had moved his lab from Colorado State University, where he was a professor of health and exercise science. He looked back over his career and education and mulled past and present projects with an eye toward translational research.

"The time allowed me to sit down and say, 'OK, what is my focus?' What is it that I want to do, and how are we going to do that in ways we've never done before?" Miller says. Having the time to do that was "liberating," he says.

Cycling sparks a similar freedom. Miller rarely competes in standard sanctioned bike races, instead challenging himself with endurance races such as a 24-hour mountain bike race. He cycles 10 to 15 hours a week. "On the rides, I just get in my head and think things through," he says. "You have to make time for things—biking, cooking, other things you enjoy—as a counterbalance to have a clear head for the science." 🚴



Miller and his team at Oklahoma Medical Research Foundation.

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BRAND YOU

Cultivating a unique, but genuine, professional brand makes your science stand out.

BY SCOTT SLEEK

“Cam squared” might be mistaken for the name of a pop band or movie about a man and his clone. However, it’s actually the label that Camilla F. Wenceslau, PhD, and Cameron G. McCarthy, PhD, have earned as husband-and-wife research collaborators at the University of Toledo in Ohio.

Wenceslau and McCarthy each earned distinct reputations in the field of vascular biology. But with dozens of co-authored papers on their curriculum vitae and the identical first syllable in their names, the couple generated a brand name for their scientific partnership.

“Cameron is about to get his own lab, and I have my own lab, but we still work together,” says Wenceslau, who studies the mechanisms of vascular disease. “We didn’t think of ourselves as a brand, but people just started calling us ‘Cam squared.’ Cameron is my scientific partner, and that has value to me.”

Not every scientist can craft such a catchy label, but that shouldn't discourage them from cultivating a professional brand that distinguishes their work, says STEM career consultant Alaina G. Levine, president of Arizona-based Quantum Success Solutions.

Levine authored the 2015 book “Networking for Nerds: Find, Access and Land Hidden Game-Changing Opportunities Everywhere” and writes the advice column “Your Unicorn Career” for Science magazine. Researchers who dismiss personal branding as a trite tagline or logo miss its real purpose, she argues.

“A rookie mistake is thinking that branding is a negative enterprise or a dishonorable endeavor,” she says. “None of that is true. It's all built on an act of generosity. Whenever you market your value—what you bring to

an organization and indeed to a field—you're creating opportunities for other people to see you as a problem-solver.”

The University of Toledo (UT), Wenceslau says, already recognized her brand—and her husband's role in it—when she interviewed for a faculty position several years ago. While few universities had positions available for both of them, Bina Joe, PhD, the chair of UT's Department of Pharmacology and Physiology, was eager to recruit them together. Joe hired Wenceslau as an assistant professor, while McCarthy landed a unique postdoc-to-faculty position and expects to transition within the year.

“She said, ‘I really want you guys as a couple here,’” Wenceslau says.

Wenceslau and McCarthy offer several elements to their brand. Both hail from abroad—Wenceslau from Brazil and McCarthy from

New Zealand. They met at Augusta University in Georgia, where Wenceslau was a postdoc and McCarthy was pursuing his doctorate. Their work together there served as the seed for some groundbreaking research on the relationship between damage-associated molecular patterns, inflammation and cardiovascular dysfunction in conditions such as hypertension and sepsis.

Most of the students and researchers they worked with came from overseas, which they believe gives them the cultural competence to offer a nurturing environment for training and mentoring new generations of physiological researchers. “We're quite used to working with diversity and promoting that as part of our brand,” McCarthy says.

MERGING SCIENCE WITH PERSONAL PASSIONS

Social media represents another core part of the branding process. McCarthy and Wenceslau each have their own Twitter handles, and label themselves as scientists, avid runners and parents. (They have a four-year-old daughter, Emma.) McCarthy also uses Twitter to promote his interest in teaching and mentoring and to disseminate information and advice about career development.

As a consultant, Levine herself has built a brand that merges her love for science, communications and performing arts—particularly comedy. She began her career in science communications at the University of Arizona, but over the years discovered a need within the scientific community that she was eager to fill. Employers told her that many graduates from the university's STEM programs lacked some critical soft skills, such as networking and career planning. That prompted her to turn her zest for public speaking

How to Get Started with Branding

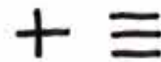
Scientists need to be proactive to develop their personal brand, says STEM career consultant Alaina G. Levine. Here are a few tips to get started:

- **Take a good look at yourself.** Think of yourself as a data scientist, collecting and analyzing data on your accomplishments, goals, passions and talents. “It's important to do self-assessments, to actually download from your brain what your skills are, what problems you've solved, what capabilities you have,” Levine says. “That's all your brand.”
- **Learn to communicate your value.** Once you've identified your key attributes, you have to communicate your value—to market yourself as a dependable problem-solver in your field. When networking or job searching, focus on what you provide rather than what you're seeking. “When you engage in the appropriate self-promotion, you're implanting in others' minds that you have a skill and would be a good person for a collaboration—like writing a paper or applying for a grant together,” Levine explains.
- **Focus on your attitude and reputation.** While your brand itself is a promise of value, your attitude telegraphs other information about your brand, Levine explains. “When you walk into a room, are you smiling? When you're networking at an event, are you making eye contact or are you looking at your phone?” People make decisions about who you are and what you can do for them based on your attitude, she says. And a positive attitude augments your reputation, which you want to maintain to keep a recognizable brand that will lead to hidden opportunities. A good reputation gets you recommendations, job referrals and invitations to collaborate.

3:22



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Physiologist, author, dog lover, and yoga enthusiast.



“A rookie mistake is thinking that branding is a negative enterprise or a dishonorable endeavor.”

—Alaina G. Levine

into an entrepreneurial endeavor. Today, she markets herself as a science journalist, career adviser, international speaker and—because she injects humor into those speaking engagements—a corporate comedian.

“I want my clients to know this is going to be a fun experience, not a boring lecture,” she says.

In fact, making science as entertaining as it is informative is a prevalent branding strategy. Theanne Griffith, PhD, a neuroscientist in the Department of Physiology and Membrane Biology at the University of California, Davis, has taken that approach, primarily with children. Griffith has authored a chapter book series, “The Magnificent Makers,” that takes young readers on scientific adventures. The writing has allowed her to meld her love of science and storytelling. And that’s secured her an image as more than just an academic.

“I didn’t think until very recently about intentionally cultivating a brand,” says Griffith, who studies the cellular and molecular mechanisms of thermal sensations. “Children’s books made me realize that I unintentionally would do that. Now, I’m very much aware of my role as a science communicator and how I’m viewed.”

Griffith’s books, aimed at children ages seven to 10, stand out because most of the characters are people of color. The series revolves around Violet, a third grader who dreams of discovering cures for diseases,

and her best friend, Pablo, who aims to become an astronaut. Their adventures introduce them to everything from physics to sensory processing, and the stories include racially diverse characters like Deepak and Mr. Eng.

Griffith also has partnered with museums and libraries on science outreach events. She delivers scientific talks to students in elementary, middle and high schools, and she’s offering science-writing workshops and presentations that show students scientists from different walks of life.

“When I discuss science, my perspective takes on that larger framework of being a Black woman in science,” she says. “That’s become part of building my brand. I have a unique voice as a woman. And you don’t see too many people who look like me working in this world.”

Griffith doesn’t necessarily view her research work as a big component of her brand, in part because she’s in the early stages of her academic career. But she’s well aware that a brand like hers can weaken if it isn’t backed with a record of solid research.

“You have to do good science,” she says. “You have to have a product that backs up your brand.”

Jazmine I. Benjamin, a fourth-year PhD student in cell, molecular and developmental biology at the University of Alabama at

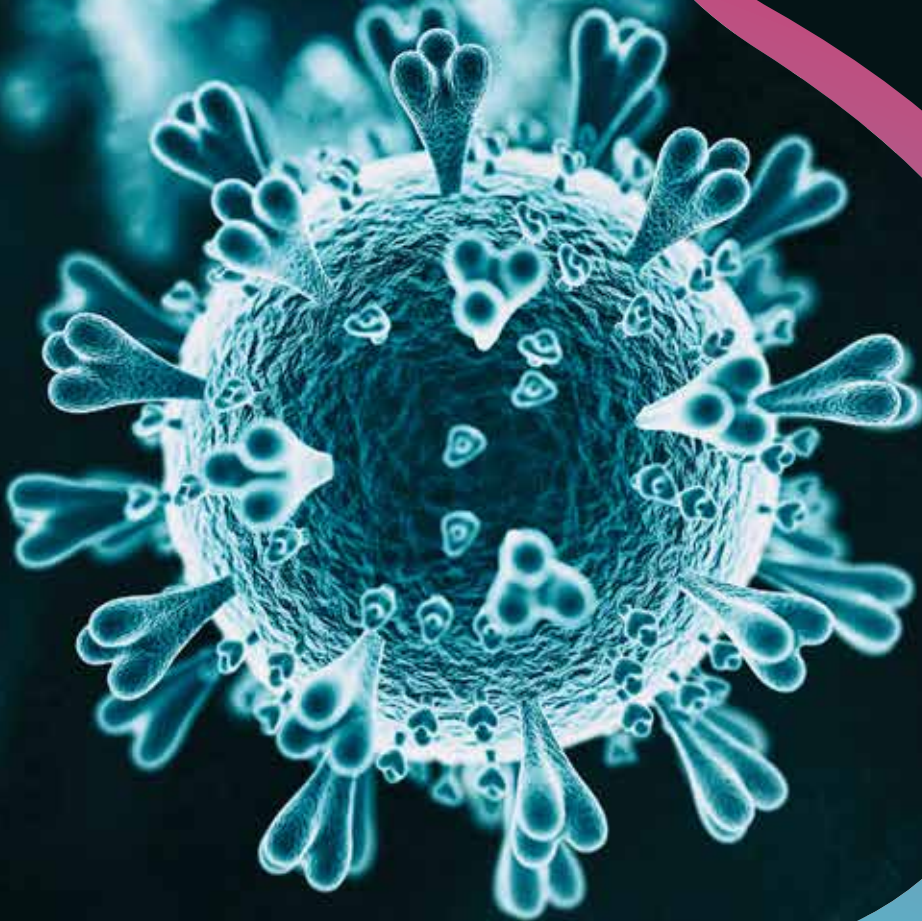
Birmingham, is also crafting a brand around scientific communication, largely in the political arena. Benjamin investigates the role of feeding behavior on risk factors for diabetes-related kidney disease. But she also serves as president of the university’s Graduate Student Government and aspires to a career in public policy.

Benjamin is particularly interested in policies related to STEM education, research funding and prescription drug pricing. She’s co-founder of the Science Policy & Advocacy Initiative and is pursuing the Science and Technology Policy Fellowship at the American Association for the Advancement of Science. She’s visited congressional offices in Washington, D.C., to impress upon lawmakers the importance of robust research funding.

Benjamin, who plans to eventually run for public office, views her ability to talk with politicians as a major component of her brand. “I think a lot of my policy and communications work is intertwined with my research,” she says. “I get my credibility from being a scientist. In the same way that I can’t do my communications work without my research, I can’t do my research without my communications work. Being able to talk with students and get them to understand my research means I can explain it to many other audiences.”

Levine asserts that physiologists, many of whom are conducting critical studies, possess a particularly strong foundation for branding among scientists.

“As a physiologist, your responsibility is to the science, to the understanding of disease, and ultimately to the patients who will benefit from your research,” she says. “So, by championing your own brand, saying ‘I can solve this,’ you are also improving patient outcomes.”



COVID-19 Resources

APS has collected journal articles, resources, news articles and other information to keep you informed and help you work smarter and more efficiently from home. Check out our compilation of government agency resources, advice on how to stay healthy and ways to get involved around your community.

Find out how your fellow physiologists are faring through the pandemic. See the results of the COVID-19 survey at **physiology.org/covid19survey**.

physiology.org/covid-19



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WOMEN OVERWORKING

The work day for many women already stretched beyond 9–5. And then the pandemic hit.

BY CHRISTINE YU

When Gina Mantica returned to her lab at Tufts University in Boston in September 2020, it felt like a ghost town. Normally, there are always people around—postdocs, students, faculty—so she expected to see a

few others in the building. Instead, during the COVID-19 pandemic, she heard and saw no one.

The more Mantica was in the lab, the more isolated she felt. Some days, she'd see one or two people from a safe distance in the hallway. When a new postdoc needed to observe her performing surgery on the zebra finches Mantica was studying, she operated in one room while the postdoc watched a video feed in another room and asked questions through the door. There was no longer a sense of community, and working alone compounded the solitude she already experienced from months of working from home.

Mantica was a fifth-year doctoral candidate in biology, studying animal behavior and physiology, and expected to complete her degree in December 2021. But when the pandemic shut down the university in March 2020, her research halted. Without lab access, she made no progress for six months, potentially adding an extra year to her studies.



MENTORING

More than 2 million women dropped out of the labor force between February and October 2020, leaving the lowest percentage of working women in over 30 years.



ZOOM
BIRTHDAY
PARTY



GRANT
WRITING



LAUNDRY

It wasn't just the lack of company. She didn't feel her adviser and research faculty were supportive, nor that her school was providing clear guidelines—especially to students deep into their programs. How would the shutdown impact graduation timelines? Would students still be required to publish a specific number of papers? “It was a very different environment. Trying to figure out a lot of stuff on your own and trying to communicate with people when they're on separate schedules was hard,” she says.

Ultimately, Mantica decided to leave her program and is now the marketing communications specialist at the Rafik B. Hariri Institute for Computing at Boston University. “I love my research. I would have loved to finish it,” she says. “But I didn't want to keep pushing myself if I wasn't receiving the support I needed to succeed.”

One year into the pandemic, scientists continue to feel its effects. Some, like Mantica, have lost valuable research time at critical junctures in their career. For others, work has taken on layers of complexity, from pivoting to online learning to adapting to new workplace protocols.

Women, in particular, have felt the burdens acutely. According to the U.S. Department of Labor, more than 2 million women dropped out of the labor force between February and October 2020, leaving the lowest percentage of working women in over 30 years.

Between August and September alone, 865,000 women left the

workforce—four times higher than the number of men, according to the National Women's Law Center. Researchers have also found a decline in productivity among female scientists. Preliminary studies suggest that women submitted to preprint servers at a lower rate compared to men and experienced a dip in first authorship compared to 2019.

“Our male counterparts are still in the lab, publishing papers and getting grants,” says Adrienne King, PhD, assistant clinical professor in the School of Public Health at Georgia State University. “I've had to step back, be here for my family and take on different responsibilities.” And the long-term impact could be damaging for female scientists.

CHANGING WORKPLACE NORMS

COVID-19 has upended everyone's lives, forcing many to rethink how they work. For Carrie Northcott, PhD, director and research lead for the Digital Medicine and Translational Imaging Group at Pfizer, work responsibilities exploded. Not only is there a greater interest in digital medicine, Pfizer prioritized COVID-19 vaccine development. As people shifted roles, Northcott assumed new responsibilities to cover for those who were redeployed. “While COVID is really important, we don't want other areas to fall behind or be neglected,” she says. She's also losing out on valuable in-person interactions. She can no longer pop

in on collaborators either, instead relying on phone and video calls.

Alyssa Brown rejiggered her schedule so she could continue her research while minimizing the risk of infection. She's a MD/PhD student, currently completing her PhD at Mayo Clinic in Minnesota before returning to the University of Louisville to finish the final year of her medical degree. She works normal business hours at home before heading to the lab in the evening when no one is around. While her hours aren't longer than usual, it takes more mental energy. "Normally, I could just go in whenever. I wouldn't have to think about what time I'm going in, what I need to prep and what I need to do while I'm there," she says.

A UNIQUE SET OF CHALLENGES

On the whole, women face uniquely difficult challenges. Prior to the pandemic, women shouldered the majority of household and caregiving responsibilities, even among couples who claim duties are evenly split. When the pandemic shifted life en masse into the home, and as schools, child care centers and facilities for the sick and elderly shut down, the demands on women's time and labor grew exponentially.

"There's a simultaneous ramping up of the work to be done and a destroying of the support that's necessary for women to do that work," says Jessica Calarco, PhD, associate professor of sociology at Indiana University. Women

tend to perform a disproportionate share of the "care work" at institutions too, like serving as informal mentors and committee members on special initiatives, experts say.

Calarco points to policies that originated in the wake of World War II for differing attitudes toward women's work in the U.S. compared to other countries. "Many Western European countries, especially those hardest hit by the war, put in place policies like universal child care and paid maternity leave that encouraged women to work and allowed women to stay engaged in the workforce," she says. The U.S., on the other hand, didn't need to rebuild or face a worker shortage. "The consequence was that the U.S. actively pushed women back home," she says. The lingering effects of these policies can be treacherous as women juggle their career during unprecedented circumstances like a pandemic.

Take Northcott, for example. Her roles during the pandemic include mom of two, wife, teacher, germ warrior, grocery-order person and cruise director. She's had to problem-solve—a lot—like programming her younger son's schedule into Alexa to remind him to switch classes so she doesn't have to. On a day when he was in tears because he couldn't get into his online classroom, Northcott was on a teleconference. So, she helped her son connect to Zoom while simultaneously answering questions from colleagues. "You're dealing with something that's

really important for work, but you also have your child there and you want to make sure he gets the support he needs as well. It's tough," she says. "There's more stress, more anxiety and more things to get done. I think women don't have a choice but to multitask."

BURNING THE CANDLE AT BOTH ENDS

Lourdes Alarcón Fortepiani, MD, PhD, says she's exhausted. When classes transitioned to remote learning in the spring, the professor at the University of the Incarnate Word in San Antonio scrambled to adapt her three courses to the new online environment.

It was overwhelming, and her workload more than doubled. She'd record classes at 3 a.m. while her family slept. During the summer, she typically teaches 60-plus students in a laboratory session. Due to COVID-19 restrictions, she had to host multiple small-group Zoom sessions at the beginning of summer. When labs reopened, she separated her typical two 30-student sections into six 10-student groups.

Working moms, in particular, have carried the heaviest burdens, often putting their own health and well-being on the line to remain engaged workers. With her husband working outside the home, Fortepiani's the de facto caregiver and teacher while managing her full-time job. Often, she could not dedicate enough time to her kids. "It's draining psychologically because I want to be there for them

"There's a simultaneous ramping up of the work to be done and a destroying of the support that's necessary for women to do that work."

—Jessica Calarco, PhD

“I don’t really have a work-life balance right now.”

—Adrienne King, PhD

during the school day and I couldn’t,” she says. She continually readjusted her schedule to make time.

Calarco witnessed a similar tension in her research with mothers in southern Indiana. “When they feel like they’re failing both as workers and mothers, they internalize that sense of failure. They feel it as guilt that they’re not able to be the kind of mother they know their kids need right now and as frustration that they’re not able to be the kind of worker that their boss expects them to be or that their colleagues are able to be during the pandemic,” she says. “That’s not the case in other countries, especially those with less individualistic cultures and stronger social safety nets.”

With a three-year-old son at home, King, the Georgia State University professor, also feels she is burning the candle at both ends. “I don’t really have a work-life balance right now,” she says.

Overhauling and preparing her three classes for remote learning required considerably more time than normal, and King logged many early mornings and late evenings. “And these are undergrad classes so I’m the sole person teaching,” she says. King’s research has mostly been placed on hold since the summer. “It’s nowhere near the level of production prior to COVID,” she says. While she’s not at the bench, she’s still writing grants and analyzing data.

King also worried about how she would replace the education and interaction her son received outside the home. While schools provided learning materials to older children, King was

left on her own. “I spent hours finding curriculums similar to what he would have been exposed to in school. I wanted to make sure he will be ready for pre-K in the fall of 2021,” she says.

Luckily for King, since August, she’s had help around the home. Twice a week, her mother takes over child care duties for a few hours so King can work. That additional help can be crucial, Calarco says. Her research found that women who have access to child care support—no matter their race, ethnicity or social class—seem to fare better than women who don’t have help.

INFORMAL WORK AND STRESS

It’s not just formal work responsibilities that are demanding women’s time. The scientists we spoke with also described taking on more informal roles. Fortepiani and King say students are equally stressed and require more check-ins and support, in addition to their regular advisory roles. “I try to convey to them that we’re all in this together; I’m not going to leave you hanging,” Fortepiani says.

For MD/PhD student Brown, most of her medical school friends are now second-year residents. “I worry about them getting sick and burnt out. I worry about new grad students because they’re not having the normal experience of making friends and having a group to hang out with during the long Minnesota winters,” she says. “I’m trying to check up on people and see if they are doing OK because you don’t get that visual, in-person check-in as often.”

Brown, who lives alone and describes herself as an extrovert, says the lack of social interaction has been hard at times. She’s coped with socially distanced walks and lunches with colleagues during the summer and virtual coffee dates with friends. Still, she worries. “I had anxiety and depression before the pandemic, and it’s made it worse,” she says. “I always wonder when we will shut down again. When will we have work-from-home orders? Will they try to move our animal facility again? Will they continue to let us use animals?”

THE UPSIDE

Despite the difficulties, scientists see glimmers of light in their experience. Northcott of Pfizer has marveled at the way the scientific field has pulled together. “We’re seeing collaboration across lines, both academic and industry, like never before,” she says. “The fact that we have a vaccine in a year is incredible.”

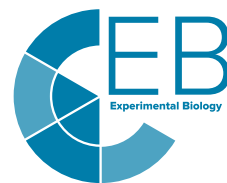
King and Fortepiani both noted that their relationships with students have improved as they’ve leaned on each other more. Several others pointed to new habits like daily walks and embroidery to help cope with the stressful times.

And despite leaving her PhD program, Mantica loves her new job in science communications, something she’s always wanted to do. She hopes that the pandemic will lead employers to rethink how they support employees so “there isn’t this exclusionary aspect to working if you’re a mom, trying to start a family or have more household responsibilities.”

Without efforts to support female scientists at all levels—from the research community to academia to employers—the future of science could look very different. 🐾



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Cellular and molecular mechanisms have physiological consequences of altered adult cell identity *in vivo*.

Cellular Cross-talk to Orchestrate Tissue Repair

April 29, 2021 | 2–3:30 p.m. EDT

The body has numerous strategies to orchestrate healing in response to injury, including key cells and signals that drive the process of *in vivo* tissue repair.

APS Nobel Lecture

Mario R. Capecchi, PhD

April 30, 2021 | 2–3:30 p.m. EDT

With an average of 12,000 attendees, 5,000 scientific posters, 900 speakers and 65 countries represented, Experimental Biology (EB) 2021 strives to make cutting-edge science accessible to everyone.

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April 27, 2021

Physiology of the 70kg (Wo)man

Physiology in Perspective: The Walter B. Cannon Award

10–11:30 a.m. EDT Virginia Miller, PhD, FAPS, Mayo Clinic College of Medicine, Rochester, Minnesota

It's More Than Skin Deep: Thermoregulatory and Cardiovascular Consequences of Severe Burn Injuries in Humans

Edward F. Adolph Distinguished Lectureship

2–3:30 p.m. EDT Craig Crandell, PhD, University of Texas Southwestern Medical Center

Control of Breathing: In the Extreme

Julius H. Comroe Jr. Distinguished Lectureship

2–3:30 p.m. EDT William K. Milsom, PhD, University of British Columbia, Canada

Robley Dunglison: Jefferson's Doctor and the Father of American Physiology History of Physiology Lecture

2–3:30 p.m. EDT Marion J. Siegman, PhD, Thomas Jefferson University, Philadelphia

Energy Metabolism Design of Striated Muscle

Solomon A. Berson Distinguished Lectureship

4–5:30 p.m. EDT Robert Balaban, PhD, National Institutes of Health's National Heart, Lung, and Blood Institute, Bethesda, Maryland

A Circuitous Journey from Hagfish to Hydrogen Sulfide, Oxygen Sensing and Redox Signaling: It's More than Just Passing Gas

August Krogh Distinguished Lectureship

4–5:30 p.m. EDT Kenneth R. Olson, PhD, Indiana University School of Medicine



April 28, 2021

Obesity-associated Cardiovascular Disease: The Exposed Secret of the Sexes
Henry Pickering Bowditch Award

10–11:30 a.m. EDT Eric Belin de Chantemèle, PhD, Augusta University, Georgia

The Neuroscience of Rhythms: From the First to the Last Breath

Joseph Erlanger Distinguished Lectureship

10–11:30 a.m. EDT Jan Marino Ramirez, PhD, University of Washington

Molecular Basis of Cardiomyopathy

Robert M. Berne Distinguished Lectureship

10–11:30 a.m. EDT Ju Chen, PhD, University of California, San Diego

Toll-like Receptor 4 in the Regulation of Renal Microvascular Function

Carl W. Gottschalk Distinguished Lectureship

2–3:30 p.m. EDT Edward W. Inscho, PhD, FAHA, FAPS, University of Alabama at Birmingham

Unsympathetic Autonomic Regulation in Heart Failure: Patient-Inspired Insights

Carl Ludwig Distinguished Lectureship

2–3:30 p.m. EDT John S. Floras, MD, Dphil, University of Toronto, Canada; Mount Sinai Hospital, New York

Life and Science: Career Path of a Physiologist

Claude Bernard Distinguished Lectureship

4–5:30 p.m. EDT Shu Chien, MD, PhD, FAPS, University of California, San Diego

The Bacteria and the Host: A Story for Purinergic Signaling in Urinary Tract Infections

Hugh Davson Distinguished Lectureship

4–5:30 p.m. EDT Helle Prætorius Øhrwald, MD, PhD, Aarhus University, Denmark

April 29, 2021

The Process of Becoming a Good Mentor

Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientist Award

2–3:30 p.m. EDT Scott K. Powers, PhD, FAPS, University of Florida

Renal Hypoxia and Acute Kidney Injury

Ernest H. Starling Distinguished Lectureship

2–3:30 p.m. EDT Roger George Evans, PhD, Monash University, Australia

Myosin Myopathies: Mechanisms of Pathogenesis and Potential Therapeutics

2021 Annual Marion J. Siegman Lectureship Award

2–4:30 p.m. EDT Leslie Leinwand, PhD, University of Colorado, Boulder

Insights from Smooth Muscle Myosin and Actin

2021 Annual Marion J. Siegman Lectureship Award

2–4:30 p.m. EDT Kathleen Trybus, PhD, University of Vermont

April 30, 2021

Intestinal Stem Cells: Tissue Maintenance and Regeneration

Horace W. Davenport Distinguished Lectureship

10–11:30 a.m. EDT Linda Samuelson, PhD, FAPS, FAAAS, University of Michigan



View program information, sign up for email alerts and learn more at apsebmeeting.org.

Early registration deadline: April 12

Gain More For Less At EB 2021

We know budgets are tight. That's why registration rates have been reduced by up to 40%. Even though rates have decreased, you can still expect the same exceptional scientific content.

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With at least 50 exhibitors expected to participate, EB 2021 will remain a convenient "one-stop shop" for information and offerings.



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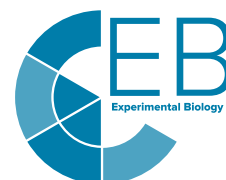
You'll now have more time to access all your favorite content. View select offerings such as the Exhibit Hall and Career Central when it best fits into your schedule. You'll also have the opportunity to go back and view sessions you missed after the event.



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Early registration deadline: April 12

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APS Members Elected to the Class of 2020 AAAS Fellows

The American Association for the Advancement of Science (AAAS) has announced its 2020 Fellows. Since 1874, Fellows are elected to this lifetime distinction by their peers serving on the AAAS Council and include Nobel laureates and other scientists who have engaged in pioneering research, leadership, teaching or mentoring. The following APS members were inducted as AAAS Fellows in a virtual ceremony on February 13.



Carol F. Elias, PhD, professor, Departments of Molecular and Integrative Physiology and Obstetrics and Gynecology; co-director Reproductive Sciences Program, University of Michigan



Eberhard E. Fetz, PhD, professor of physiology and biophysics and DXARTS, University of Washington



Alan L. Goldin, MD, PhD, professor, Departments of Microbiology and Molecular Genetics, Physiology and Biophysics, and Anatomy and Neurobiology, University of California, Irvine



Joseph R. Haywood, PhD, FAPS, professor, pharmacology and toxicology; assistant vice president, Office of Regulatory Affairs, Michigan State University



Mark O. Huising, PhD, professor in neurobiology, physiology and behavior with a joint appointment in physiology and membrane biology at the University of California, Davis



W. Jonathan Lederer, MD, PhD, director, Center for Biomedical Engineering and Technology and professor of physiology, University of Maryland School of Medicine



Stephen G. Lisberger, PhD, professor and chair, Department of Neurobiology, Duke University, Durham, North Carolina



Marsha Lakes Matyas, PhD, CEO of Evaluation for Excellence, Olney, Maryland



Jeff Reese, MD, Mildred T. Stahlman Chair in Perinatal Research; professor of pediatrics, biomedical engineering and cell and developmental biology, Vanderbilt University Medical Center, Nashville



Dee U. Silverthorn, PhD, FAPS, Distinguished Teaching Professor, University of Texas at Austin



Jerrold R. Turner, MD, PhD, professor of pathology and medicine, Brigham and Women's Hospital and Harvard Medical School, Boston

APS ELECTION RESULTS

APS President-elect, Three Councilors Elected

The results of the APS 2021–2022 elections are in. The following winners will begin their terms in April at the conclusion of the APS annual meeting at Experimental Biology 2021.



PRESIDENT-ELECT

Dee Silverthorn, PhD, FAPS

Distinguished Teaching Professor of Physiology, Dell Medical School,

University of Texas at Austin



Margarita Curras-Collazo, PhD, FAPS

Associate professor of neuroscience, University of California, Riverside



Dexter Lee, PhD

Associate professor of physiology, Howard University College of Medicine, Washington, D.C.

COUNCILORS



Lacy Alexander, PhD

Professor of kinesiology, Penn State University, University Park

APS APPOINTMENTS

New APS Editors-in-Chief and eBook Committee Chair Appointed

APS is pleased to announce the following new additions to our journal and committee leadership. They will assume their new roles in July 2021.



Michael J. Caplan, MD, PhD, FAPS, will be editor-in-chief of *Physiology*. He will succeed Gary C. Sieck, PhD, who has

served in the role since 2012.



Hilary A. Collier, PhD, will be editor-in-chief of *Physiological Genomics*. She will succeed Bina Joe, PhD, who has served

in the role since 2015.



Liliana Schaefer, MD, will be editor-in-chief of the *American Journal of Physiology-Cell Physiology*. She will

succeed Josephine C. Adams, PhD, who has served in the role since 2014.



Gary C. Sieck, PhD, FAPS, will serve as chair of the APS eBook Committee. He will succeed Dee U. Silverthorn, PhD, FAPS,

who has served in this role since 2011.



Mark R. Frey, PhD, will be editor-in-chief of the *American Journal of Physiology-Gastrointestinal and Liver Physiology*. He

will succeed Nigel Bunnett, PhD, who has served in the role since 2015.

OPPORTUNITY KNOCKS

Check out these featured job listings. To find your next career opportunity or to list your job announcement with us, visit www.physiology.org/jobs.

FACULTY POSITION FOR PRECLINICAL SCIENCES WILLIAM CAREY UNIVERSITY

The Department of Preclinical Sciences at William Carey University seeks qualified candidates for full-time position of professor of preclinical sciences at Hattiesburg, Mississippi, campus.

Read more at www.physiology.org/WCUCOM.

FEATURED CAREERS AT NOVARTIS

VARIOUS LOCATIONS

APS has partnered with Switzerland-based biopharmaceutical company Novartis to launch the Industry Career Development Initiative. The goal of the initiative is to provide APS members with unique access to job opportunities in Novartis' physiology-based areas of interest, postdoctoral fellowships and internship programs.

Learn more at www.physiology.org/novartiscareers.

AWARDS

Environmental & Exercise Physiology Section Edward F. Adolph Distinguished Lectureship (Deadline: March 1)

Environmental & Exercise Physiology Section Honor Award (Deadline: March 1)

Environmental & Exercise Physiology Section Impact Award (Deadline: March 1)

Julius H. Comroe Jr. Distinguished Lectureship of the Respiration Section (Deadline: March 15)

Carl Ludwig Distinguished Lecture of the APS Neural Control & Autonomic Regulation Section (Deadline: March 19)

John F. Perkins Jr. Research Career Enhancement Awards (Deadline: May 31)

Teaching Career Enhancement Awards (Deadline: May 31)

Local Undergraduate Research Awards in Physiology (Applications accepted on an ongoing, year-round basis)

More details: www.physiology.org/awards

CALLS FOR PAPERS

American Journal of Physiology-Cell Physiology (March 31, 2021)

- Muscle Wasting: Cellular and Molecular Mechanisms

American Journal of Physiology-Lung Cellular and Molecular Physiology (April 1, 2021)

- Circadian Rhythms in the Lung

More details: www.journals.physiology.org/calls

MEETINGS & EVENTS

CONFERENCES

Experimental Biology

Virtual meeting dates: April 27–30, 2021

- Advanced registration deadline: April 12

More details: www.physiology.org/EB

WEBINARS

Physiology Educators Community of Practice (PECOP) Webinar Series—Engaging, Supporting and Assessing Students in a Pandemic-challenged World

March 16, 2021

- Speaker: Julia Choate, PhD
- Speaker: Patricia A. Halpin, PhD

Diversity, Equity and Inclusion (DEI) Webinar Series Implicit Bias and Stereotype Threat

March 31, 2021

- Moderator: Lourdes Fortepiani, MD, PhD
- Speaker: Crystal L. Hoyt, PhD

More details: www.physiology.org/webinars



CALLS FOR PAPERS

Many American Physiological Society journals are looking to publish papers on featured topics. View the open calls for papers and see if there is a fit for your latest research.

journals.physiology.org/calls

Color, Women and Scientists in Vogue!

BY PATRICIA E. MOLINA, MD, PHD, FAPS

At last! It is here! The time to embrace the journey we selected and so fiercely have held on to. Like the awakening of daffodils in spring, the cherry blossoms in D.C. and the first hints of spring, we are at a historic moment that speaks of opportunity, optimism and may I dare say, peace! Like hibernating bears—decreasing energy expenditure to a minimum to keep vital functions going through the winter—we in science have gone through a year of isolation, devastating loss and a reckoning of the inequalities that plague our institutions and affect scientists of color.

“I choose to think of our times as an opportunity to take a deep breath, appreciate how far we’ve come and use that spirit to mentor and support our colleagues and trainees.”

Faith, courage and enthusiasm have been hard to muster throughout this time. Yet, we must not ignore that it is data that could have better guided our response to the pandemic and science that has now given us vaccine options that bring promise of curtailing the severity of COVID-19. And while we were horrified by the events surrounding the storming of the Capitol, I dare you to put on your technicolor glasses, get

your microscope or your telescope, and search for hope to get us through this next phase.

I speak with joy and optimism. Why? We have a newly sworn in administration that has elevated the role of science adviser to the cabinet level. We have a woman of color and daughter

of a scientist mother as vice president. More and more, our peers are actively speaking out to increase representation of people of color in physiology and other STEM disciplines. So, I choose to think of our times as an opportunity to take a deep breath, appreciate how far we’ve come and use that spirit to mentor and support our colleagues and trainees.

Personally, when I read that Vice President Kamala Harris’ mother was a scientist, I could not help but reflect on the many times when I felt insecure and inadequate when leaving my children with their caretaker to go to the lab and start an experiment. I had mentors that tried to assure me that they would be OK even if I was not the one feeding them their bottle each time or helping their teachers supervise recess when they were in school.

I was convinced I was depriving them of my motherly love and that I was jeopardizing their chance for success. Fast forward 30 years, and

here is an accomplished woman who will help lead our country through this pandemic. And I wonder: Did her mother have the same concerns and insecurities? I also wish I could travel back in time and tell Assistant Professor Patricia Molina: “Things will be OK; your kids will do fine; and oh, the places you will go!”

It is that spirit that I want to encourage our early-career scientists to embrace! It is also the message that I ask mentors to convey to their trainees. If your passion is there, if this is your life, if discovery and scientific exploration is what drives you, then roll up your sleeves, sharpen your minds and embrace the challenge. Breathe the excitement of the moment. Who knew you would be in vogue!

Patricia E. Molina, MD, PhD, FAPS, is a proud Brown mother of three. She is also department head of physiology at Louisiana State University Health Sciences Center in New Orleans and past president of APS and the Association of Chairs of Departments of Physiology.



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