THE Physiologist MAGAZINE
NOVEMBER 2020

Human Cells, Not Prison Cells

For Stanley Andrisse, PhD, physiology opened the door to a fulfilling life.

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Cover photo by Wesley Law

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Carrying the Torch Forward

BY SCOTT STEEN, CAE, FASAE

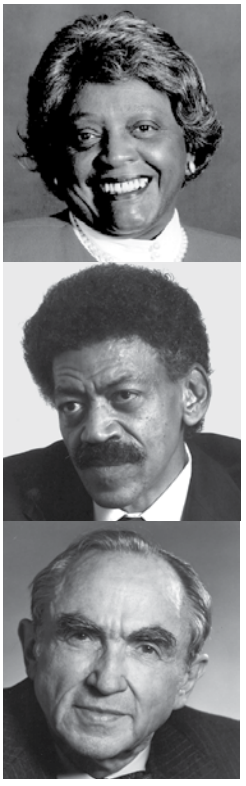
APS offers a tremendous number of awards and fellowships. In fact, we award more than $1.2 million per year. However, to me, one award program stands out as a beacon of the Society's priorities and values.

The Porter Physiology Development Fellowship is one of the Society's signature awards programs. The Fellowship, one of the largest awards that APS gives, has more than a 50-year history of recognizing and celebrating underrepresented researchers for their work and potential. This year, eight outstanding new Porter Fellows have been acknowledged for their scientific achievement and promise:

- Cesar Barrabi, *Wayne State University, Detroit*
- Jeanmarie Gonzalez, *University of California, San Francisco*
- Jonathan J. Herrera, *University of Michigan Ann Arbor*
- Michelle Herrera, *University of California, Irvine*
- Cesar Meza, *Florida State University, Tallahassee*
- Lindsey Ramirez, *Medical College of Georgia, Augusta University*
- Luis A. Rivera-Arce, *Ponce Health Sciences University, Puerto Rico*
- Luke Schwerdtfeger, *Colorado State University, Fort Collins*

The Fellowship has a storied history at APS. It was established in 1921 by William Townsend Porter—one of our most prominent members and the founding editor of the *American Journal of Physiology*—to provide support to predoctoral students in physiology. During the civil rights movement in the 1960s, a handful of visionary APS members decided that the Fellowship could be used not only to recognize up-and-coming scientists but also to promote diversity in the discipline.

A. Clifford Barger, PhD, and Edward W. Hawthorne, MD, PhD—one of only eight Black APS members at the time—orchestrated a revamp of the Fellowship. The goal was to increase the diversity of people studying physiology, laying the groundwork for the Fellowship as it is today. The two went on to serve as Porter Committee co-chairs from 1967 to 1986. Along with Eleanor Ison-Franklin, PhD, the Committee's co-chair from 1984 to 1998 (who at times almost single-handedly ran the Porter program from her office at Howard University), they shaped the program to become what it is today.



From top: Eleanor Ison-Franklin, PhD; Edward W. Hawthorne, MD, PhD; A. Clifford Barger, PhD

Since 1967, APS has supported more than 160 Porter Fellows. Each new class joins an esteemed group of past Fellows, many of whom have achieved remarkable things. Our Porter alumni have gone on to lead research labs and hold key administrative positions at the National Institutes of Health, National Science Foundation (NSF) and other scientific and academic institutions. These scientists, administrators and entrepreneurs represent the best of APS.

While the Porter program has been an undoubted success, the goals for the program have not yet been fully realized. Today, Black, Hispanic and Native American people still comprise only 11% of APS members. In 2015, Black and Hispanic scientists made up just 2.5% and 5.9% of life scientists in the STEM workforce, respectively, according to recent NSF data.

As we enter into a new phase of planning and programming initiatives aimed at closing these gaps and increasing meaningful diversity, equity and inclusion in physiology, I think it is important to remember the work of these visionary leaders and continue carrying their torch forward. The Porter Fellowship provides a great tool, but we still have work to do.

GRADUATE PHYSIOLOGY & BIOMEDICAL SCIENCE CATALOG

The American Physiological Society (APS) is pleased to announce our new **Graduate Physiology and Biomedical Science Program Catalog**. The catalog is a resource for your students and mentees as they contemplate graduate school and the next step in their education and careers.

This online directory provides undergraduate biology and life science students and early-career physiologists with graduate program profiles that facilitate their search for the ideal institution. We encourage you to share this catalog with your undergraduate and postbaccalaureate students to help grow the next generation of physiologists.

Check out the catalog today at physiology.org/GraduatePhysiology.

Interested in listing your program?

Contact **Jacob White** for more information.

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WHAT is physiology?

WHERE is physiology?

WHY does it matter to you?

Join us as we follow the path from the lab all the way to the healthy lifestyle recommendations that you receive from your doctor.

Explore how the body works by reading the blog at **ISpyPhysiology.com**.

Interested in contributing?
Email communications@physiology.org.

#ISpyPhysiology

Conversations about diversity and racism in everyday life, academia and science are not new to Twitter. But they seem to have increased this summer, with hashtags #BlackInTheIvory and #BlackAcademia gaining momentum. In addition, Black physiologists created the Twitter handle @BlackInPhysio in August 2020. Here is a snapshot of conversations.

How are you handling 2020? 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.

Keisa Mathis, PhD
@FizzyDoc

Physiology is fundamental! Join this list if you are a student, academician, administrator or other professional who understands the importance of physiology and supports the discipline

7:33 PM · Aug 28, 2020

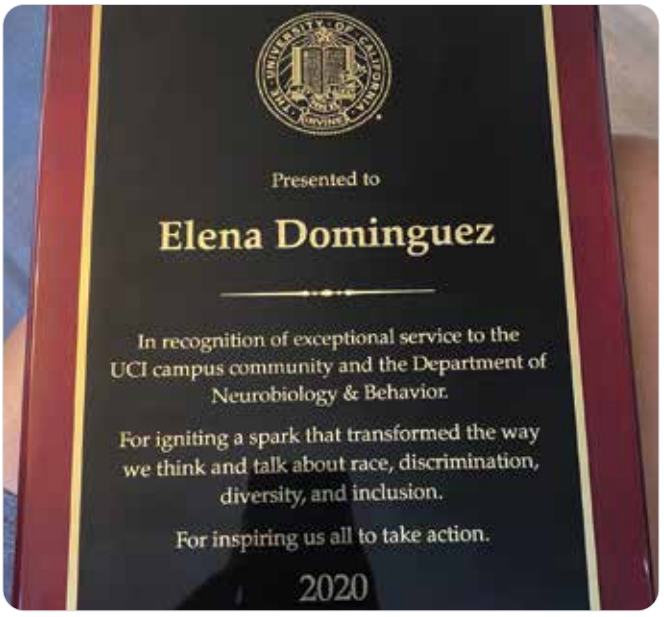
Bald Headed Heaux
@ahandsomequeer

This semester this is the 1st time in years that all my professors are Black and women and it's honestly a sweet, sweet joy. #Blackacademia

2:06 PM · Aug 25, 2020

Elena
@NeuroCurls

I am so grateful to have had the pleasure to work alongside @FutureDrDukes and @AutumnSkyeIvy. A difficult but necessary conversation that started over text turned into a campus-wide discussion about anti-racism, and I couldn't be more proud. Thank you to @UCIrvine ❤️



4:11 PM · Sep 22, 2020

Lisa Ganser, PhD
@fishbrainlab

Who needs 37 pieces of flair when you have these kinds of flairs. Thanks @TwoPhotonArt @BlackInPhysio @APSPhysiology @haack_kkv
It's amazing being a BIPoC physiologist.

2:10 PM · Sep 14, 2020

Ashanti Washington
@byashantib

A fallacy is that science is pure and independent of the trappings of humans and humanity. Storytelling in #scicomm helps break that false wall down. IMO it also helps the audience understand how biases, approaches to research, the PI's passion etc. affect research.

3:02 PM · Sep 21, 2020

CEO Natalie Coleman
@ceonatcoleman

When I was a High School teacher, I was often mistaken for all kinds of positions but never the chemistry teacher...for the record...this is what a science teacher looks like 😉 thanks to @usfsaints for letting me continue to walk in my purpose #blackscientist #changethenarrative

9:55 AM · Sep 10, 2020

Antentor Othrell Hinton, Jr, PhD (BCM), BS (WSSU)
@phdgprotein86

Why do HBCUs have separate rankings? HBCUs should be considered some of the greatest institutions in the world. They have trained the majority of black scientists that went on to be successful at Tier 1 SCH. The system frowns upon HBCUs, but will recruit there. #Blackinthelvory

8:27 AM · Jun 9, 2020·Twitter Web App

Follow APS on Twitter: @APSPhysiology @SciPolAPS @APSPublications

LAB NOTES

STATS & FACTS

0.9%

The percent of experienced investigators awarded a National Institutes of Health Research Project Grant (R01) between 2009 and 2016 who were an underrepresented racial minority.

The FASEB Journal, Silda Nikaj et al.

RESEARCH FIZZ

SARS-CoV-2 may regulate cellular responses through depletion of specific host miRNAs

This perspective piece discusses the possibility that SARS-CoV-2 may act as an "miRNA sponge" and reduce the amount of miRNA to facilitate viral replication or block immune responses.

***American Journal of Physiology-Lung Cellular and Molecular Physiology*, August 2020**

https://doi.org/10.1152/ajplung.00252.2020

MENTORING Q&A | RESEARCH DEVELOPMENT

Coronavirus Contributions

How to adapt and expand your research during the pandemic.

Each issue we ask a trainee to pose their career questions to an established investigator and mentor. Here, Benard "Ben" O. Ogola, PhD, postdoctoral fellow at Tulane University, New Orleans, asks Margarita Curras-Collazo, PhD, FAPS, associate professor of neuroscience in the Department of Molecular, Cell and Systems Biology at the University of California, Riverside, how to protect unique ideas and adapt and grow during the pandemic.

Q: How do I present my research data and future experiments or goals to colleagues in scientific meetings without feeling like my ideas are taken away?
A: It's always a great opportunity to convey your ideas and enthusiasm to other scientists. This connects you with scientists tackling similar questions. It triggers opportunities for networking with scientists

Illustration by Kagan McLeod

and programs and promotes invitations for seminars and job interviews.

Many scientists worry about getting their ideas scooped, and some actually do. This creates a lot of unneeded stress on a scientist's day-to-day well-being and creativity. However, even if you do get scooped, I would propose that no two studies are actually the same and both will get published. Consider using pre-registered report services like BioRxiv.org and journals with "scoop protection." In the grand scheme of things, it really doesn't matter who published a few months ahead of another.

You stand to lose much more if you don't share. The possibility of collaborations is one of the greatest benefits of being a scientist. Interdisciplinary teams of scientists are an important contributor to success. Let's face it, in order to probe into Mother Nature we need to explore many levels of complexity, and likely from many angles, to further the discipline.

Q: Scientific innovation is important, as is currently evident in the search for COVID-19 treatments, including a vaccine. How should young scientists adapt or contribute during the pandemic?

A: As we learn more about vulnerable patient groups it is clear that there are health disparities associated with COVID-19. We are also learning how the virus infects and how the host immune, respiratory and nervous systems are likely responding. Interested scientists who may be able to contribute because of their unique expertise or career interests and/or access to vulnerable patient groups should investigate new and exciting grant opportunities initiated at the local and national level.

"The possibility of collaborations is one of the greatest benefits of being a scientist. Interdisciplinary teams of scientists are an important contributor to success."

At the University of California, Riverside, for example, there are small grants advertised that even students can apply for as co-principal investigators. In addition, scientists can develop new educational seminars, lectures or even review articles to help the scientific community advance in the scientific "battle" to contain and suppress the adverse effects of coronavirus.

Q: Given that the COVID-19 pandemic has disrupted basic research, how should mentored scientists manage the "publish or perish philosophy" and foster collaboration while training toward independency?

A: One positive aspect of the COVID-19 pandemic is the time afforded to individualized work that can be utilized for creative and scholarly activities. Even trainees with incomplete data sets can benefit by writing parts of their oral qualifying proposals, dissertation or even manuscripts and review articles. One can also use the time to catch up on the scientific literature in emerging areas within your field. Training in these professional skills can come from online webinars, workshops and conferences and/or meetings with your mentors and senior peers.

These are all desirable skills to gain that will help trainees develop independency. We are lucky to live with modern tools that keep us connected remotely by facilitating group activities while keeping us safe from the pandemic. However, some of us have additional elderly or child care and other responsibilities brought on by the need to stay home and may not be able to benefit fully from remote work. It bears reminding that some have fallen ill or are caring for others that have fallen ill or have lost their financial lifeline and are facing real adversity and anxiety.

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STATS & FACTS

7.7%

The portion of scientists and engineers employed full-time who are Black or African American.

National Science Foundation

RESEARCH FIZZ

Improvements in skeletal muscle fiber size with resistance training are age-dependent in older adults: a systematic review and meta-analysis

Resistance training helps build muscle in older adults. However, the beneficial effects decrease with age.

Journal of Applied Physiology, August 2020

https://doi.org/10.1152/japplphysiol.00170.2020

STATS & FACTS

62%

The portion of Black STEM workers who report experiencing racial or ethnic discrimination on the job.

Pew Research Center

POLICY IQ | ANIMAL WELFARE ADVOCACY

Advocating for Animal Research

The APS Office of Science Policy works with the APS Animal Care & Experimentation (ACE) Committee to advocate for research with animal subjects. The focus is to ensure that animals are treated humanely and that researchers are able to work with animals when necessary to answer important scientific questions. Their work revolves around making sure that the concerns of physiologists are heard in the development of laws and policies affecting the conduct of research studies involving animals. In addition to bringing physiologists' concerns to Congress and the U.S. executive branch, the Science Policy staff provides Society members opportunities to share their views with their elected representatives.

Support for the humane and necessary use of animals in research and education has been important for physiologists virtually since the founding of the Society in 1887. (See "Historical Overview of the APS and the Use of Animals in Research" in *The Physiologist*, Vol. 42, No. 5, October 1999, at **http://bit.ly/AnimalUseHistoricalOverview**.)

The Animal Welfare Act (AWA), first passed in 1966 and amended multiple times since then, is intended to ensure that researchers incorporate animal welfare considerations in their work. The Society has its own longstanding commitment to animal welfare, expressed in the "Guiding Principles for the Care and Use of Vertebrate Animals in Research and Training." (See **http://bit.ly/GuidingPrinciplesVertebrateAnimals**.) These principles, first adopted in 1953, prescribe a code of humane standards in physiological research.

As early as 1950, the director of the National Institutes of Health (NIH) issued a set of "Rules Regarding Animals." In 1971, NIH established the policy "Care and Treatment of Laboratory Animals," which was codified into law in the 1985 Health Research Extension Act as the "Public Health Service Policy on the Humane Care and Use of Laboratory Animals" (PHS Policy). From the beginning, there was overlap between the AWA and PHS Policy, which requires institutions to keep track of how to comply with two sets of regulations. In addition, some funding and regulatory agencies also have their own rules.

As the primary laws were amended over the years and other rules were added, duplication and inconsistency have become an increasing problem.

Efforts to address regulatory burden—a side effect of this duplication and inconsistency—have become a major activity for the APS Office of Science Policy and the ACE Committee. They identify problem areas and provide feedback to the agencies. In addition, when new regulations are proposed, the staff and the Committee provide comments on behalf of the Society to the federal agencies.

APS RESOURCES

The Office of Science Policy also provides information about animal research for the public on the APS website at **www.physiology.org/AnimalResearch**. This includes answers to basic questions such as: Why animal research? How is animal research regulated? Are there alternatives to animal research? Additional information for the public is also available on the Finding Cures website at **www.animalresearchcures.org.**

APS members interested in learning more about the Society's science policy activities are invited to subscribe to *Science Policy News* by emailing **sciencepolicy@physiology.org**. This monthly bulletin goes out the third Tuesday of each month and features opportunities to engage in advocacy for research funding and humane animal research.

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POLICY IQ | WORKFORCE PROGRAMS

Initiatives at NIH, NSF Aim to Diversify Scientific Workforce

iStockphoto

Having long recognized the need for diversity in the scientific workforce, both the National Institutes of Health (NIH) and the National Science Foundation (NSF) have programs intended to increase the proportion of scientists from underrepresented populations.

NIH's efforts to improve diversity and inclusion in the scientific workforce are coordinated through its Scientific Workforce Diversity Office. This office is charged with implementing the NIH Scientific Workforce Diversity Strategic Plan. The current plan has five specific goals:

- Expand scientific workforce diversity as a field of inquiry.
- Build and implement evidence related to diversity outcomes.
- Understand the role of sociocultural factors in biomedical recruitment and retention.
- Sustain nationwide workforce diversity with seamless career transitions.
- Promote the value of scientific workforce diversity.

Implementation updates are embedded within the strategic plan document online. With the current plan about to conclude, efforts will soon be underway to develop a new plan for the years 2021–2025. The Scientific Workforce Diversity Office also curates the website **www.diversity.nih.gov**, which is home to a wealth of information and resources for each of these strategic areas.

NSF DIVERSITY EFFORTS

The goals in NSF's agency-wide strategic plan include:

- Preparing a diverse, globally engaged science, technology, engineering and mathematics workforce.
- Integrating research with education and building capacity.
- Expanding efforts to broaden participation from underrepresented groups and diverse institutions across all geographical regions in all NSF activities.
- Improving processes to recruit and select highly qualified reviewers and panelists.

One of the ways that NSF works to implement these goals is through the INCLUDES initiative (Inclusion across the Nation of Communities of Learners and Underrepresented Discoverers in Engineering and Science), which focuses on diversity and inclusion in STEM. An updated overview of programs funded through INCLUDES is detailed in a report at **http://bit.ly/NSFINCLUDESReport**.

POLICY IQ | IMPROVING DIVERSITY

NIH Program Pairs Early-career Peer Reviewers with Experienced Trainers

Federal agencies rely on volunteers from the scientific community to review thousands of grant applications that come in each year. One of the ways that the National Institutes of Health (NIH) seeks to increase the diversity of the pool of reviewers is through the Early Career Reviewer (ECR) program. Investigators selected to serve as early-career reviewers have the opportunity to work with experienced reviewers to learn the peer review process firsthand.

The program is open to assistant professors (or those in an equivalent role) with at least two years of faculty experience, an independent program of research and two senior-authored research publications. Learn more at **www.csr.nih.gov/ecr**.

NIH recruits experienced faculty members to serve as peer reviewers in a variety of ways, including calling on current grant recipients to serve. Investigators can also volunteer to serve as reviewers directly by emailing NIH at **reviewervolunteer@mail.nih.gov**.

RESEARCH FIZZ

Ridinilazole, a narrow spectrum antibiotic for treatment of *Clostridioides difficile* infection, enhances preservation of microbiota-dependent bile acids

This first-of-its-kind study explores the relationships between Clostridioides difficile antibiotic treatment and bile acid metabolism in humans, both during and after treatment.

American Journal of Physiology-Gastrointestinal and Liver Physiology, August 2020

https://doi.org/10.1152/ajpgi.00046.2020

STATS & FACTS

87%

The median annual earnings of Black workers with a STEM college degree as a percentage compared to white workers' earnings.

Pew Research Center

RESEARCH FIZZ

Compensatory eating behaviors in male and female rats in response to exercise training

Sex differences play a large role in the relationship between exercise, appetite and weight loss.

American Journal of Physiology-Regulatory, Integrative and Comparative Physiology, August 2020

https://doi.org/10.1152/ajpregu.00259.2019

UNDER THE MICROSCOPE

Rapid Fire Q&A

Anberitha Matthews, PhD, honors Henrietta Lacks, explains how science affects everyone and shares how she's spending time during the pandemic.

Q: What inspired you to become a scientist?
A: My interest in science originated with the sudden death of a loved one from cardiac arrest. I never intended to study science directly. I guess I was not yet aware that being a medical doctor or a nurse and scientific research were interconnected. To my surprise, after a summer job, biochemical research would be the gateway to my research career as a vascular scientist.

Q: "Old school" technique you're most proud of mastering?
A: Western blot! Once a person learns to troubleshoot a blot they can be sure whether they are on track to finding an answer.

Q: Most challenging laboratory technique you've learned to use?
A: High-pressure liquid chromatography-mass spec! Extracting the compound of interest, setting up the software to run the samples and reading the results—although rewarding, it was not the easiest task to complete. I remember hating chemistry prior to working with these samples, but I learned chemistry was the best way to ask the first question to get started on running the experiments.

Q: Items on your lab bench that you are most possessive of?
A: Pipettes. When running small molecule experiments, it is imperative to get the measurements correct if the results are to be reproducible.

Q: If you could meet any scientist (living or dead) who would it be and why?
A: Kathy Griendling, PhD, from Emory University in Atlanta. I spent years of my life researching oxidative stress and reading her work. Then I read an article about her as a person rather than just a scientist and thought, "she is my (s)hero!" She has done things most people, especially women, never do in their career, all while having a family and hobbies outside of science.

Q: If you were a model organism, which model organism would you be?
A: Henrietta Lacks' HeLa cells. That is the most robust cell line known to research. It has helped to solve countless scientific anomalies, and still today, HeLa is the optimal cell line for research.

Q: Briefly, what do you wish the general public understood about science or research?
A: Science touches the lives of everyone. I have heard people say that conducting research is a waste of money and we do the same thing but we are not changing anything.

Q: How would you describe your job to a child?
A: I study ways to help people live with heart disease.

Matthews and students in Mexico for biology field study.

Above: Matthews with her sister, Lashando Bell, both Mississippi State alumni, ringing the Salvation Army bell. Left: Matthews with her oldest grandson, Kriestyn, and St. Jude friend Shaun Brenen at a parade in Memphis.

Everyone knows someone that has cardiovascular disease, whether that be hypertension, diabetes, renal (kidney) failure or metabolic disease (obesity). Cardiovascular disease has touched a life we know. It is through research that we can get the medication needed to control these diseases. It is through research that we can make and understand the lifestyle changes necessary to improve quality of life. Science is the quest for the knowledge to improve quality of life for the masses.

Q: Favorite book about science (fiction or non-fiction)?
A: "The Immortal Life of Henrietta Lacks" by Rebecca Skloot.

Q: No. 1 guilty pleasure?
A: I love to cook and be in the kitchen. But since diet and exercise are among the "Life's Simple 7" as a way of controlling disease, I have started crafting instead.

Q: Most influential scientist on your career?
A: I have had many, but I would not be in science without my extraordinary three:

1. Nara Gavini, PhD, helped me to see science as a career choice and how it opens up possibilities.
2. Matthew Ross, PhD, taught me to see things for more than they are on the surface and to love the process. I have dyslexia, and I struggled with chemistry. Dr. Ross made it simple enough that I always wondered why I could not have learned it that way earlier. He shaped my understanding of cardiovascular disease by pushing me to learn more and understand more. It is still my desire to have a career that makes him proud.
3. Marijo Kent-First, PhD. Everyone needs someone to keep them motivated and to have someone to have a bad day with. She gave me more support than she will ever understand. She forced me to not quit when my advisers were teaching endurance and how to have tough skin.

PUBLISH WITH POLISH | COVID-19 RESEARCH

APS Journals Open Access to Coronavirus-related Research

As 2020 comes to a close, one scientific issue has dominated the year: COVID-19. The pandemic has affected the lives of almost everyone in the world in some capacity, and researchers have led the charge on understanding and combatting the pandemic. APS recognizes that Society members and authors are working diligently to respond to the COVID-19 pandemic, and the Society has taken several measures to help with the dissemination of research related to COVID-19.

To ensure that COVID-19 research published in APS journals reaches the largest possible audience, APS has made all articles discussing COVID-19, the coronavirus, SARS and other related research freely accessible to all readers. Such articles have their access marked with a green unlocked padlock icon and the "Free Access" identifier on the contents pages of the journals.

In addition, to make finding COVID-19 content easy, we have compiled a cross-journal collection of these freely accessible articles online. This collection will continue to grow as relevant content is identified and new contributions on these topics are accepted. You can find the collection of COVID-19–related content at **https://journals.physiology.org/covid19**.

APS' experienced publishing staff share their tips and know-how to help you improve the polish of your scientific manuscripts. Got a scientific publishing or style question that you want us to weigh in on? Email it to tphysmag@physiology.org.

Q: Favorite science-related TV show (fictional or factual)?
A: "Bones."

Q: Favorite way to spend a free hour in quarantine?
A: Crafting with my grandchildren.

Q: Favorite part of your job?
A: Meeting key opinion leaders and learning about their work. Also, conducting bench work.

Q: Title you'd use on your autobiography?
A: "On My Way to PhD."

Q: One thing every researcher/scientist should try at least once in their life?
A: Visiting other labs to see how they are run and attending conferences.

Anberitha Matthews, PhD, is a vascular scientist, CPR instructor and wellness coach at Redefining Health LLC. She researches vascular injury as it pertains to oxidative stress to help clients improve their quality of life.

HUMAN CELLS, NOT PRISON CELLS

For Stanley Andrisse, PhD, physiology opened the door to a fulfilling life.

BY HEATHER BOERNER

It was at night that Stanley Andrisse, PhD, would pore over scientific articles. He remembers the near calm of it: Late at night, with the building as quiet as it was going to get, he wedged between the thin mattress of his top bunk and the hard concrete of the ceiling. If he bent his legs as he read, his knees nearly touched the ceiling.

But Andrisse blocked out the closeness of the space as he read. Instead, he turned on his nightlight and, sometimes for hours, absorbed scientific terms and imagined the process by which glucose gets absorbed or not.

"I fell in love with science and medicine in my prison cell," says Andrisse, now assistant professor of physiology at Howard University College of Medicine in Washington, DC. "I spent hours and weeks just breathing it."

Photo by Wesley Law

Photo by *The Washington Post*

After Andrisse's father died from uncontrolled diabetes, Andrisse became interested in physiology, immersing himself in review articles on the pathophysiology of diabetes.

Prison is where Andrisse started to plan for a different future for himself. "I'm going to be a doctor when I get out, man," he remembers telling an incarcerated friend.

Today, Andrisse's journey is still rare in academia. But he hopes it won't be for long. As Americans increasingly question police behavior toward Black citizens, Andrisse spends his time building a bridge between his former life and his current one by mentoring both undergraduates and formerly incarcerated people.

FROM FERGUSON TO PHYSIOLOGY

There is a one-mile stretch of road that passes through Ferguson, Missouri, and four other municipalities in St. Louis County, each with its own police department. As a child growing up in that section of St. Louis County, Andrisse said he watched his siblings, his parents and others get pulled over, sometimes in every single town, racking up hundreds of dollars in fines.

Not knowing that the city had a policy of raising money by issuing tickets, and that the law had changed to allow police to search people at will under "stop and frisk" policies, Andrisse says he could only conclude that there were so many police officers in his neighborhood because "the folks here must be criminals."

When he read a 2015 U.S. Department of Justice report on policing in Ferguson, after Michael Brown's murder by police and subsequent protests, he wasn't surprised to see that, actually, police had violated citizens' Constitutional rights.

"Many officers appear to see some residents, especially those who live in Ferguson's predominantly African American neighborhoods, less as constituents to be protected than as potential [offenders] and sources of revenue," the report states.

What it meant for Andrisse is that he can't remember a time when the police didn't try to intimidate him. "I can recall being 8 years old and getting pushed around by cops in my neighborhood," he says. He became an expert at talking the police down because he knew "they were going to come at me, assuming I was guilty of something."

But Andrisse was smart and quick on his feet, mentally and physically. His family joked that he'd be a lawyer one day because he was so good at persuasive speech. His moves on the football field landed him a scholarship to Lindenwood University near St. Louis. There, he made the connection that would lead him to physiology.

From Prison Cells to PhD serves hundreds of people in 22 states, funded through a $5.2 million grant from the National Science Foundation, among others. It has a 97.5% post-secondary education matriculation rate.

PHYSIOLOGY BY NIGHT LIGHT

That connection was Barrie Bode, PhD. When Andrisse met him, Bode was a professor of biology at St. Louis University and Andrisse was a college senior looking for a summer internship so he could "try to figure out what I was going to do with my life after college."

But while he was applying for internships and attending football practice and classes, he was also the subject of a court case for dealing drugs. By the time he entered college, he had already been in the school-to-prison pipeline for years. According to the Justice Policy Institute, the school-to-prison pipeline consists of zero-tolerance policies at school, inviting in police officers who disproportionately target Black and Hispanic children, leading them to enter the juvenile justice system. Andrisse was facing a three-strikes rule that would send him to prison for 10 years to life. No one in his regular life knew, including Bode, who had just written a letter of recommendation for Andrisse to intern in his lab.

Andrisse was afraid to ask Bode directly for a character reference for his court case—he didn't want those two worlds to meet—so he tucked the letter Bode wrote into his court files. That's how Bode received a call from the prosecutor. Bode responded by writing a letter to the court and testifying on Andrisse's behalf. "It felt really good that someone didn't see me as a criminal," Andrisse says.

Despite that reference, Andrisse received the minimum sentence of 10 years. During his sentence, Andrisse's father died from uncontrolled diabetes—first, he lost a foot, then one leg, then the other. Grief-stricken, Andrisse studied photos of diabetic necrosis. He asked Bode to send him review articles on the pathophysiology of diabetes. By phone, Bode translated the language of physiology into lay terms.

Those articles became the primary excitement in Andrisse's life. It was worth the guards shining a light in his face at night to startle him away from his article. It was worth an incarcerated friend shaking his head at Andrisse's post-incarceration plans, saying, "Let's go hit the weights. You're thinking crazy again."

"I knew I was about to be exploring new places in my head that would get me out of prison," he says. "I would

Photo by Free Star Media

Andrisse created the organization From Prison Cells to PhD to mentor and work with formerly incarcerated adults to help them achieve their academic and professional goals.

"I'm not a rare exception. There are many exceptional people in prison, but they lack access and opportunities. Talent is distributed evenly but access and opportunity are not."

—Stanley Andrisse, PhD

be inside that cell—a human cell and not a prison cell."

GAINING CONFIDENCE

As the articles continued to come, and Bode continued to discuss them with him, something else happened. His thinking changed. He was starting to believe in himself.

He took that confidence with him when he was released from prison a few years later. Quickly, he earned a master's degree in business administration from Lindenwood University and immediately started his PhD in physiology at St. Louis University. But it almost didn't happen. When he was applying for the PhD program, he was asked: Had he ever been convicted of a felony?

Suddenly, that old feeling was back—of being pushed around by cops as a kid, of being pulled over one block after the next, of being talked about by the district attorney as a criminal mastermind. He felt like he would only ever be a person in a cell in most people's eyes. "It's a gut-wrenching feeling of 'this place doesn't want me.' All the places I applied to asked that question, and all of them rejected me, except St. Louis University," he says. "I had someone advocating for me."

Bode was now on the acceptance committee at the university. He vouched for Andrisse, paving the way for his research into medications that might mimic the physiological benefit of exercise for people with type 2 diabetes. In four years, Andrisse completed his PhD and went on to Johns Hopkins University as a postdoc—Johns Hopkins doesn't ask about applicants' criminal history. After that, he served as an adjunct assistant professor of physiology at the university.

"Considering that I completed my PhD at the top of my class and in much less time than my peers, I was probably good enough to get in to all those other programs," Andrisse says. "It's a pretty safe assumption to say that it was probably because of me checking that [felony conviction] box that I didn't get in and the fact that I was seen as a criminal."

That's why Andrisse testified before Maryland legislators in 2017, advocating for the state to ban the question on initial applications for college admissions. The ban went into effect in 2018, after the Legislature overroad the governor's veto. In 2020, the Legislature banned asking about a criminal record on job applications before the the first in-person interview for businesses with 15 or more full-time employees.

MENTORING OTHERS

Today, Andrisse continues to study the physiology of insulin resistance. But now, he's doing something else he's passionate about: mentoring. He and his friend Jerry Moore III—the one who had told him to stop "thinking crazy" about being a doctor after prison—started From Prison Cells to PhD (**www.fromprisoncellstophd.org**), where they mentor and work with formerly incarcerated adults to help them achieve their academic and professional goals.

The organization serves hundreds of people in 22 states, funded through a $5.2 million grant from the National Science Foundation, among others. It has a 97.5% post-secondary education matriculation rate. All of the organization's mentors are formerly incarcerated. Andrisse still opens every new cohort of participants by telling his story.

"The system" is why there are not more like Andrisse. "I'm not a rare exception," he explains. "There are many exceptional people in prison, but they lack access and opportunities. Talent is distributed evenly but access and opportunity are not."

At Howard University, he counsels his students on the importance of the different kinds of mentors in their lives, such as the principal investigators who are coaches, showing you how to do better science through experience, and the sponsors, who can make connections for you and champion your work.

What he knows now is that he may have fallen in love with science in that prison cell, but he found his calling in mentoring. "What I want to do is help build the next generation of Black and Brown scientists."

Read the comparative physiology blog

Life Lines

by

Dr. Dolittle

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An Eye on Diversity

Universities share their diversity and inclusion initiatives that others can learn from.

BY CANDACE Y.A. MONTAGUE

When Keren Herrán was 16, she attended the Hispanic Heritage Youth Awards in support of her older brother, Zuriel. The keynote speaker was physiologist Teresa Ramírez, PhD, a then-postdoctoral fellow at the National Institute on Alcohol Abuse and Alcoholism. (Ramírez is a member of the American Physiological Society and is now the Society's member communities manager.) Herrán was impressed and inspired by her speech. She told her aunt sitting next to her that she wanted to meet this Latina who was the first face in science she ever saw that looked like her.

"Hearing her express her experience as a first-generation Latina and her passion for giving back to the community and how she enjoys being in science as a minority inspired me," Herrán says. Her aunt insisted she approach Ramírez after the ceremony. From there, a mentor relationship was formed. Herrán credits Ramírez with helping her with many things, including completing college applications. "She has been like a big sister to me. She is a very big part of my life."

Illustration by Daniel Hertzberg

Herrán is now a senior at University of Maryland, Baltimore County (UMBC), studying public health. She's excited about where she has landed after high school but admits it can be daunting to be a minority in a field where Hispanic students are few and far between. "You must work double hard to prove that your upbringing and background is not something that makes you less of a scientist. I am proud of my background, upbringing and culture, recognizing the value they add to my intelligence and skill sets, thus enhancing my professional pursuits."

The need for diversity in science has never been greater. But decades of racism and discrimination have created a divide that will not be easy to close. It will take more than a few book club readings to make a real impact on education and the workforce. What are the best practices for bridging the gap and getting everyone to truly buy into equity? During this moment of racial reckoning, when more academic institutions are turning their attention to diversity, equity and inclusion, we asked several institutions with successful diversity programs how they are succeeding and what their tips are for other institutions to follow.

HIGH EXPECTATIONS AND GROUP SUPPORT

Interest in science as a field of study has remained steady among minority students in the past 25 years. According to the National Science Foundation's STEM Education Data, in 1995, 35% of Black college freshmen and 37% of Hispanic college freshmen had plans to major in science and engineering when they entered undergraduate school. By 2012, Black students' intentions rose slightly to 36% while Hispanic students' intentions increased to 41%.

Herrán credits her success to the Meyerhoff Scholars Program, a UMBC program aimed at enrolling

Language Matters

This glossary of terms, defined by various racial equity education centers and resources, can be used when discussing the creation of equitable spaces.

Anti-oppression: Work that dismantles white supremacist forces that marginalize, silence or otherwise subordinate one social group or category. Practicing anti-oppression work in real terms is not only confronting individual examples of bigotry, or confronting societal examples, it is also confronting ourselves and our own roles of power and oppression in our communities.

Anti-racist: An anti-racist is a person who is supporting an anti-racist policy through their actions or expressing anti-racist ideas. This includes the expression or ideas that racial groups are equals and do not need developing, and supporting policies that reduce racial inequity.

Code switching: Moving back and forth between two languages or two dialects or registers of the same language based on who your audience is. Some people in marginalized groups resort to code switching to prove their intelligence. Others use it to identify with the predominant social group. Code switching hides an individual's culture and works against inclusion.

Diversity: Diversity has come to refer to the various backgrounds and races that comprise a community, nation or other group. In many cases, the term not only acknowledges the existence of diversity of background, race, gender, religion, sexual orientation and so on, but implies an appreciation of these differences.

Equity: Promoting justice, impartiality and fairness within the procedures, processes and distribution of resources by institutions or systems. Tackling equity issues requires an understanding of the root causes of outcome disparities within our society.

Implicit bias: When we have attitudes toward people or we associate stereotypes with them without our conscious knowledge. Everyone carries implicit biases in their minds to some extent. In other words, implicit biases are the "thoughts about people you didn't know you had."

Inclusion: This is an outcome to ensure those who are diverse actually feel and/or are welcomed. Inclusion outcomes are met when you, your institution and your program are truly inviting to all—to the degree to which diverse individuals are able to participate fully in the decision-making processes and development opportunities within an organization or group.

Microaggression: The everyday verbal, nonverbal and environmental slights, snubs or insults—whether intentional or unintentional—that communicate hostile, derogatory or negative messages to target persons based solely on their marginalized group membership.

Tone policing: Tone policing is when a person attacks the way someone says something in order to diminish the validity and importance of the statement. When people with privilege feel uncomfortable, they may tone-police in an effort to silence someone belonging to a marginalized group.

DEFINITION SOURCES:

www.ibramxkendi.com
The Aspen Institute
https://dei.extension.org
American Bar Association
Perception Institute
Psychology Today
https://theantioppressionnetwork.com/what-is-anti-oppression

and supporting minority students in STEM studies. As a participant, she was connected with a network dedicated to helping her and her cohort with STEM fields through tutorials, enrichment activities, peer assistance and mentorship. Robert Meyerhoff and Freeman Hrabowski, PhD, began the program in 1988 as a scholarship program for Black men. The following year, women were admitted into the program. Today, the Meyerhoff Program has graduated more than 1,100 minority students who have gone on to attain master's and doctoral degrees.

Hrabowski, UMBC president, explains that high expectations and group support help students in the Meyerhoff Program avoid falling through the cracks. "We put a lot of emphasis on tutorial efforts, group study, use of technology and transparency in the work," he says.

He describes the program as "intrusive." Instead of just asking the students how they're doing, the program keeps track of the students' grades and progress. "And for the students who are not doing well, we look into tutorials to get their grades up," he says.

The program has been so successful at graduating minority students in STEM that it has been replicated at the University of North Carolina at Chapel Hill, Penn State and Howard University.

Earnestine Baker, executive director emerita of the UMBC program, describes some strategies the program uses for student retention: "One part of [retention] is having the students realize the politics with getting advanced degrees in science. The politics are different. And sometimes one will not see it, but they feel it. You become a victim of the results, and the results may be 'I can't do this. I'm going to transfer.' Students also deal with isolation, so we create an environment at the undergraduate level to prepare students to combat all these negative feelings."

"One part of [retention] is having the students realize the politics with getting advanced degrees in science. ... You become a victim of the results, and the results may be, 'I can't do this. I'm going to transfer.'"

—Earnestine Baker

A deeper, more formidable obstacle in enrolling and keeping minority students in science is systemic racism. Black and Hispanic students face pervasive, tough challenges. "You can look at structural racism from several perspectives," Hrabowski says. "One, the schools for Black children receive less funding and are not as strong academically. Many of these schools don't give children strong reading skills. If you give me a child who can read, I can teach her to solve word problems. But if she doesn't read well, I can't teach her word problems or chemistry or physics. Two, there are fewer opportunities for Black and Latinx children to know what's possible in science; they have fewer role models. So, this notion of structural racism and the academic achievement gap is very real."

#BLACKINTHEIVORY

Black and Hispanic students moving into graduate-level education may find themselves in unchartered territory. As undergraduates, they may have felt supported by fellow minority classmates and mentors. But graduate school is different and can often be isolating.

Awareness of systemic racism has been gaining steam over the past decade, and it has become prevalent on social media. Dexter Lee, PhD, associate professor in physiology and biophysics at Howard University College of Medicine in Washington, D.C., explains how the Twitter hashtag #BlackInTheIvory opened a dialogue about racism in science. "After the George Floyd murder, there was this tweet about African American encounters in science. More specifically, they talked about their training in grad schools across the country. Unfortunately, African Americans and other minorities are underrepresented. And oftentimes, there are encounters that are less than desirable. But there isn't always a forum to discuss it," Lee says.

Using the #BlackInTheIvory hashtag, Black researchers are publicly discussing the microaggressions—and sometimes, macroaggressions—they've had to overcome to pursue their dream careers in academia. "'Black in the ivory' brought back experiences that I'm not too fond of sharing," Lee says. "But I think it's important to shine a light on what many African Americans have endured while trying to get advanced degrees in science.

"I received fair, and even favorable, treatment from professors when I was in school some 25 years ago," Lee continues. "As a graduate

UC Merced teaches its staff "specific skill sets that form the choices you make daily and lead to becoming an actively anti-racist institution through the development of transformative practitioners."

—Dania Matos, JD

student and postdoc, I did not receive that same treatment from some students and postdoctoral fellows."

CREATING AN EQUITABLE WORKPLACE

Students in STEM programs eventually become researchers, professors and leaders in the workforce. What challenges will they face that college did not prepare them for? Being Black, Hispanic or from other underrepresented groups in a predominately white workspace carries a level of weight that only minorities can understand. Minority scientists must handle unfair assumptions—such as colleagues assuming they got their jobs because of affirmative action or that they always serve as a spokesperson for their entire race. Researchers of color also have little recourse when a colleague takes credit for their work or ideas.

A 2018 Pew Research Center report shows that workplace diversity is considered important by the majority of employees in STEM and that Black and Hispanic employees considered diversity a high priority. Among those employed, 84% of Blacks, 64% of Asians and 59% of Hispanics said racial and ethnic diversity in the workplace is extremely or very important compared to just 49% of whites.

Black people in STEM reported more race-based discrimination than other groups. According to the report, 62% of Blacks, compared with 44% of Asians and 42% of Hispanics, in STEM jobs said they had experienced discrimination at work.

Experts say creating a diverse and equitable workplace is about implementing continuous opportunities for growth and learning in a safe space where uncomfortable conversations can be had. At the University of California, Davis, equity training is presented in various ways and on a rolling basis. Renetta Garrison Tull, PhD, vice chancellor of diversity, equity and inclusion, says in addition to encouraging staff to examine their own biases, they offer hands-on learning opportunities.

"We have faculty who are looking toward ways to make their climates not just equitable but welcoming," she says. "So, there are groups of faculty members now that are engaging in anti-racism book readings and engaging in opportunities to learn together. They're coming together to formulate their own committees on equity."

The school has also implemented university-wide programs, including a film series for students and faculty, a workshop on transformative justice and a racial trauma website with faculty- and student-focused resources, news and guidance documents. (Visit **https://diversity.ucdavis.edu/resources-racial-trauma**.)

BUILDING ANTI-RACIST LEADERSHIP

At the University of California (UC) Merced, efforts to increase diversity include developing positions and training leaders to find and address racial inequities. Dania Matos, JD, associate chancellor of equity, diversity and inclusion, recommends that other college campuses develop a faculty equity adviser program. These advisers work with search committees to create a diverse candidate pool for hiring. They also work with hiring units to ensure that newly hired staff get acquainted with groups such as the critical race and ethnic studies faculty at UC Merced or women in STEM groups.

"We build active anti-racist leadership with the understanding of critical race theory (relationship between racial categories and institutional power)," Matos says. "For instance, ensuring they take data courses that equip them with the skills to uncover racial inequities within their institution and a course on facilitating conversations on race, racism, white supremacy and anti-Blackness. These are specific skill sets that form the choices you make daily and lead to becoming an actively anti-racist institution through the development of transformative practitioners."

When it comes to creating an inclusive academic environment, it helps to think collectively. Consider everyone's culture and background as something that will enhance growth, not hinder it. Experts advise not to be afraid to have honest, respectful dialogue to keep the growth going.

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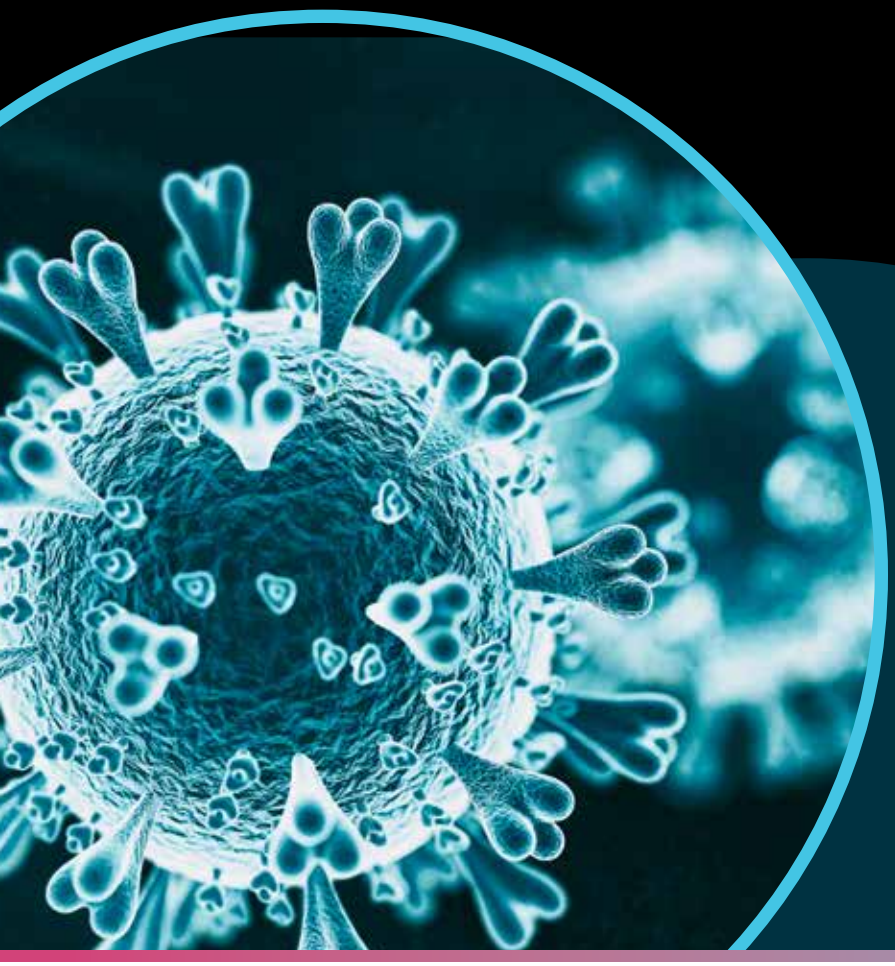

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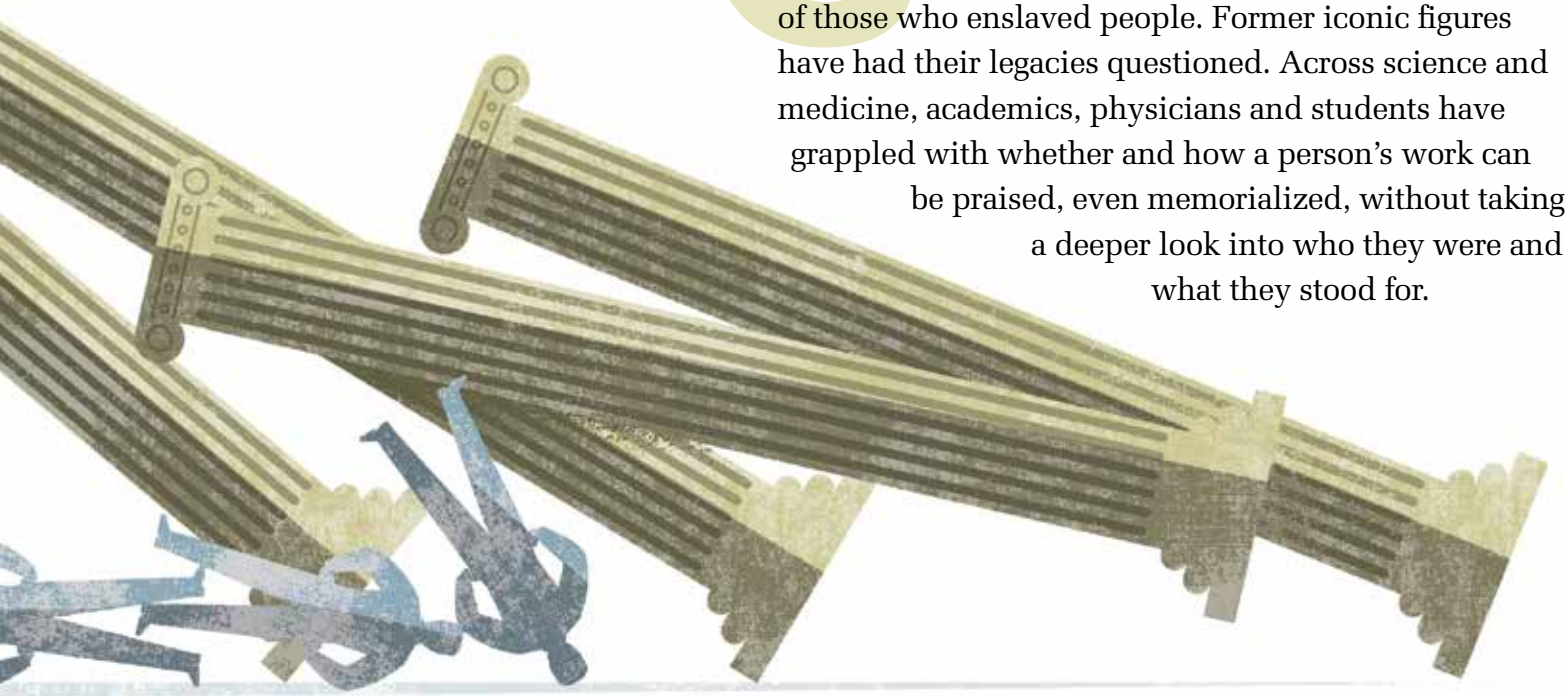
Reconciling Legacy

How academic institutions and science can handle important work by historical figures with complicated lives.

BY BRITTANY KING

Illustration by Michael Austin

Statues of Confederate Army leaders have fallen in the U.S. Academic halls have been stripped of the names of those who enslaved people. Former iconic figures have had their legacies questioned. Across science and medicine, academics, physicians and students have grappled with whether and how a person's work can be praised, even memorialized, without taking a deeper look into who they were and what they stood for.



In an era of movements such as #MeToo and Black Lives Matter, questions have been raised about the best way to address the work of historical figures with complicated pasts. In physiology, this includes the legacy of William Beaumont.

A U.S. Army surgeon known as the "Father of Gastric Physiology," Beaumont performed his landmark gastrointestinal research on Alexis St. Martin, a white fur trapper who was shot in the stomach. The unusual way St. Martin's wound healed—into a fistula that allowed a literal "window" into how digestion worked—led to a relationship between the two men in which Beaumont kept St. Martin as an indentured house servant by day and an experimental subject at night. Today, many recognize Beaumont's work as groundbreaking but also unethical. How can we reconcile that and other similar examples?

The Physiologist Magazine spoke with Joanna Radin, PhD, associate professor of history of medicine at Yale University, New Haven, Connecticut.

TPM: How can the medical field reconcile problematic achievements such as Beaumont's?

JR: It's a really good and relevant question for Yale. One of the main meeting rooms, the heart of the Yale Medical School, is called the Beaumont Room, and there's a painting in there that depicts aspects of this relationship, but in ways that aren't terribly illuminating about St. Martin's life. There are a lot of meetings that happen in the Beaumont Room, from faculty orientation to lectures about race and activism. It would be wonderful for the artwork in that room to be contextualized such that it raises awareness and encourages reflection about the kinds of exploitative relationships that have too often characterized medical experimentation.

There is a new committee on art in public spaces at the medical school which has been created for precisely this reason. A number of graduate students trained in medical history will be helping the dean to rethink how Yale represents itself and its relationship to uncomfortable aspects of its past.

Personally, I feel it is unacceptable to celebrate accomplishments of physicians without devoting attention to the humans upon whose bodies these accomplishments have been made possible, especially when those accomplishments are the product of coercion or exploitation.

The point is not to say, 'let's cancel all of medicine.' I'm a historian, so I think it matters that people know how they came to know what they know. Too often, there's a temptation to think 'these are things that happened a long time ago when we didn't know better.' But what I've learned from historical research is that someone always knew better; there have always been people who see what is happening around them and attempt to resist or refuse. You don't have to look very hard to find even members of the profession who at the time said, 'this is racist, this is harmful, this is going to come back and haunt us.' The question is why those voices are not, and were not, powerful enough to prevent harm. It's something that I really struggle with and I'm deeply interested in understanding. The challenge of the present is learning how to identify, amplify and listen to those voices.

TPM: Is there harm in naming an award, building, etc. after people who have caused pain to communities?

JR: Yes. I don't see any reason why people who have done violence need to be memorialized—especially without awareness of their actions. The purpose of monuments and statues and memorialization is to force us to reckon with these issues and the ways in which our society has changed or hasn't changed. We need to think hard about what it has meant to have systems of higher education built on racial capital. As a historian, I don't think is antithetical to history to having reckonings around these buildings or to rename them. After all, the goal of history is to reckon with change over time.

TPM: What's the solution to honoring people who have done important work but have a complicated past?

JR: We need to honor more of the story. Only if we understand more fully the circumstances under which knowledge gets made can we make better choices as individuals and as a society.

One thing I really believe strongly is that since science and medicine are human activities, that they are

Joanna Radin, PhD, is associate professor of history of medicine at Yale University, New Haven, Connecticut. She describes herself as "a historian of biomedical futures, with a focus on how people since World War II have imagined life science, genetics and epidemiology would change their lives."

> "You don't have to look very hard to find even members of the profession who at the time said, 'this is racist, this is harmful, this is going to come back and haunt us.' The question is why those voices are not, and were not, powerful enough to prevent harm."
>
> —Joanna Radin, PhD

done by people, it is up to those people to make choices about what they value. The ways in which knowledge is made has profound consequences about who gets to benefit from that knowledge.

TPM: What are you teaching at Yale right now? How has that changed in light of COVID-19, the Black Lives Matter movement and other movements fighting social injustice?
JR: This fall, I'm teaching "historical perspectives on global health," which is very relevant. We examine how ideas about disease, colonialism, race, gender, science, diplomacy, security and economics have shaped and been shaped by the attempts to negotiate problems of health that transcend geopolitical borders. We consider the impact of both successful and unsuccessful attempts to manage health and illness, as well as the lived experience of such attempts in local contexts.

I'm also interested in the history of humanitarianism. That includes asking questions about what it means to help, who gets to decide what counts as a problem for global health and who gets to decide what kind of solutions we come up with.

TPM: How is this moment changing how you approach lectures? Additionally, how can educators allow current events to shape class discussions?
JR: That is a big question. In a lot of ways, even before racism made headlines this spring, I started to shift my pedagogy to create a classroom that was more attentive to diversity. In my teaching in Yale College and its Graduate School of Arts and Sciences, I work with students that come from a variety of backgrounds. I realized that if we don't know where each other are coming from, then we are all going to be setting ourselves up for missed communication and missed opportunity. I try to provide ways for students to articulate what's on their mind and what their questions and concerns are.

For the medical students I teach, I have observed that they have had the benefit of taking classes during their undergraduate careers that were not offered when their professors were going through school, including history of medicine. These students are equipped with intellectual and political resources that many of their professors have not been exposed to. Faculty are increasingly learning from their students—both about the kinds of topics they want to see better represented in the medical curriculum as well as how to address questions of racism, sexism, ableism and other forms of inequality in constructive ways. As faculty, we all benefit from being willing to work with students to figure out how to make our teaching more attentive to a greater variety of lives.

TPM: What can administrations do to help facilitate this?
JR: I've been at Yale for almost a decade, and there are extraordinary people doing health-related work within the community. Unfortunately, many of them are disenfranchised from the resources of the university. Many of the students have pointed out that Yale can do more to better engage with and address the needs of the community upon which the university relies. New Haven is a city that struggles with racial and economic inequality, which is directly tied to health outcomes. When medical students are supported in taking the needs of the community in which they are training seriously, they will be better equipped to serve their patients no matter where their careers take them. It might even encourage them to develop innovative research agendas that situate patients as partners rather than subjects.

ADVOCACY

APS Calls for Study on Racism in Academia

More than 70 organizations and institutions joined APS in signing a letter to Rep. Eddie Bernice Johnson (D-TX) supporting her call for a study to acknowledge and assess systemic racism in academia. Johnson, chair of the U.S. House of Representatives Committee on Science, Space and Technology, wrote to the National Academies of Science, Engineering and Medicine (NASEM) in late July asking NASEM to undertake this study.

The September 1, 2020, coalition letter underscores the importance of an inclusive scientific workforce but acknowledges that past efforts to increase diversity have produced only incremental change. "We are hopeful that a comprehensive study by the NASEM will yield the data and tools that the academic community needs to pursue evidence-based changes leading to more rapid progress," the letter said.

Read the full letter on the APS website at **www.physiology.org/NASEM**.

Boron Named Distinguished University Professor

Walter Boron, MD, PhD, FAPS, of Case Western Reserve University (CWRU) in Cleveland, has been named Distinguished University Professor. He is the David N. and Inez Myers/Antonio Scarpa Professor and chair of the Department of Physiology and Biophysics at CWRU's School of Medicine. The Distinguished University Professor title honors "contributions of full-time tenured faculty with exceptional records of research, scholarship, teaching and service." Boron, an APS member since 1981, is recognized for his seminal research in acid-base balance and pH regulation.

MEET THE EDITOR

Merry L. Lindsey, PhD

American Journal of Physiology-Heart and Circulatory Physiology

Merry L. Lindsey, PhD, will begin her term as editor-in-chief of the *American Journal of Physiology-Heart and Circulatory Physiology* (*AJP-Heart and Circ*) on January 1, 2021.

"I grew up in my research career reading *AJP-Heart and Circ* articles. Over the years, I have transitioned from reader to author to editorial board member to consulting editor to associate editor to deputy editor and now editor-in-chief. My laboratory performs cardiac research that involves developing multidimensional approaches to examine the mechanisms whereby the left ventricle responds to injury, making *AJP-Heart and Circ* and the APS Cardiovascular (CV) Section natural homes for me. Because I have experienced all sides of *AJP-Heart and Circ*, I know what a great journal it is. My past roles as APS councilor and chair of the CV Section, and serving as an instructor for the APS Scientific Writing Workshop in Orlando, Florida, keep me aligned with APS members and give me a preview of our future.

I joined the University of Nebraska Medical Center in February 2019 to become chair of the Department of Cellular and Integrative Physiology and the founding director of the Center for Heart and Vascular Research.

In 1999, I received my PhD in cardiovascular sciences from Baylor College of Medicine, where I worked with Dr. Mark L. Entman. I completed a postdoctoral fellowship in cardiovascular research at Harvard Medical School and Brigham and Women's Hospital under the mentorship of Dr. Richard T. Lee. From there, I served on the faculties of the Medical University of South Carolina from 2002 to 2005, the University of Texas Health Science Center in San Antonio from 2005 to 2013 and the University of Mississippi Medical Center from 2013 to 2019.

I have the privilege to work with Kara Hansell Keehan, executive editor of *AJP-Heart and Circ* and associate publisher, strategic journal development for APS. Combined with an outstanding editorial board, we will be working to improve the impact and diversity of our journal and to promote professional development of early-career investigators. We will continue efforts to establish guidelines for cardiovascular research, create calls for papers centered on trending topics and collaborate extensively with our sister APS journals. I am excited to be taking on this opportunity."

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Physiological-Omics Groups ADInstruments New Investigator Award (Deadline: December 10)

APS-sponsored AAAS Mass Media Fellowship (Deadline: January 1)

Beverly Petterson Bishop Award for Excellence in Neuroscience (Deadline: January 7)

ADInstruments Macknight Innovative Educator Award (Deadline: January 10)

Dean Franklin Young Investigator Award (Deadline: January 14)

Graduate Student Ambassador (Deadline: January 14)

Lazaro J. Mandel Young Investigator Award (Deadline: January 14)

Shih-Chun Wang Young Investigator Award (Deadline: January 14)

Translational Research Award (Deadline: January 14)

Porter Physiology Development Fellowship (Deadline: January 15)

Dale J. Benos Early Career Professional Service Award (Jan 24)

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More details: www.physiology.org/awards

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- The Chronification and Treatment of Visceral Pain
- Coronavirus Disease (COVID-19) and Digestive System
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American Journal of Physiology-Heart and Circulatory Physiology (December 31, 2020)

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- Extracellular Vesicles in Lung Health, Disease and Therapy
- Joint Call for Papers with *Physiological Reports*: The Pathophysiology of COVID-19 and SARS-CoV-2 Infection

***Journal of Neurophysiology* (*JNP*)** (December 31, 2020)

- Society for the Neural Control of Movement
- Spinal Networks and Spinal Cord Injury: A Tribute to Reggie Edgerton
- Vestibular and Oculomotor Function in Health and Disease: A Tribute to W. Michael King, PhD

Physiological Genomics (December 31, 2020)

- Single Cell Sequencing
- Single Cell Sequencing Bioinformatics Platforms
- Senescence and Aging

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

MEETINGS & EVENTS

CONFERENCES

Integrative Physiology of Exercise
Virtual meeting dates: November 9–13, 2020

- Registration deadline: November 6

More details: www.physiology.org/ipe2020

PHYSIOLOGY EDUCATORS COMMUNITY OF PRACTICE (PECOP) WEBINARS

Educators Town Hall
November 17, 2020

More details: www.physiology.org/PECOPWebinars

ADI/APS JOINT WEBINARS

Data Collection & Analysis in Human Autonomic Research: How to Guide Successful Testing
November 19, 2020

- Speaker: Jackie Limberg, PhD

More details: www.physiology.org/ADIautonomic

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Speakers

Lisa Janicke Hinchliffe, MS
Professor for Information Literacy Services and Instruction, University of Illinois at Urbana-Champaign.

Dennis Brown, PhD, FAPS
APS Chief Science Officer; Professor of Medicine, Harvard Medical School in Boston; and Director, Massachusetts General Hospital Program in Membrane Biology.

Reenvisioning a More Inclusive Discipline

BY KARLA HAACK, PHD

Physiology pop quiz: Who is largely considered the father of modern physiology? Answer: Claude Bernard (that was easy). Who was the first female APS member? Answer: Ida Hyde—maybe you've seen her name around APS.

Who was the first Black physiologist? Who were the first Black APS members? Answers: Julian Herman Lewis, awarded his PhD in physiology from University of Chicago in 1915; Joseph L. Johnson, Walter M. Booker and Daniel Rolfe (elected to join APS in 1934, 1948 and 1950, respectively).

Here is one we all know: America is at a time of political, social and economic unrest in the backdrop of an unrelenting pandemic that is disproportionately affecting communities of color. My personal hope is that this is a tipping point for our nation, forcing us to reconcile systemic inequities that have too long persisted and to reenvision a more inclusive America, including in our scientific community.

One way to create a more inclusive culture in science is through storytelling. I mentioned Claude Bernard because it is the stories about his work that are foundational to our discipline. But whose stories do we not know? Whose stories are being attributed to someone else?

We know Rosalind Franklin, who contributed to the discovery of the DNA structure, isn't the only person who got "left out." We have a few examples from recent media: "Hidden Figures," the 2016 book and film highlighted the previously unrecognized contributions of the Black female workforce to NASA, including the Project Mercury mission. The 2011 book "The Immortal Life of Henrietta Lacks" described how Lacks' cervical cancer cells (HeLa cells) were used without her permission to build a wealth of scientific knowledge that we continue to build upon. We have only begun to scratch the surface of these yet untold scientific stories.

Telling a more complete history of science acknowledges the multifaceted complexities of the challenges inherent to the science as well as those incurred by the scientists themselves. If the field of physiology was a beach, it is not made solely of grains of sand discovered by white males. During the Upper Paleolithic era, the Ishango bone was likely used to track menstrual cycles; Pacific Islander shamans explored the physiological effects of herbs 7,000 years ago; Garrett Morgan hired a white actor to sell the prototype for gas masks in the 1910s because a Black man would not be considered credible as an engineer.

Science history is far richer and more diverse than most of us have been taught. We should teach our students (whether in the classroom or journal clubs) better examples so that they can see themselves reflected in the rich tapestry of science history.

Storytelling is not limited to past events. Part of the APS Strategic Plan, and one of my personal goals during my tenure as chair of the APS Diversity & Inclusion Committee, is to amplify the voices of our members of color and work intentionally to have Society leadership reflect the diversity of our membership. By creating opportunities for our stories to be told now, they can never be hidden.

We can also share the stories of our local communities to chip away at systemic inequities. Highlighting health disparities research in journal clubs and publications and increasing funding opportunities on this topic will bring to light the physiological consequences of systemic inequity with the intention of seeking permanent solutions.

Tell me a story.

Karla Haack, PhD, is a lecturer of anatomy and physiology at Kennesaw State University in Kennesaw, Georgia. She is the chair of the APS Diversity & Inclusion Committee.

Illustration by Brett Affrunti

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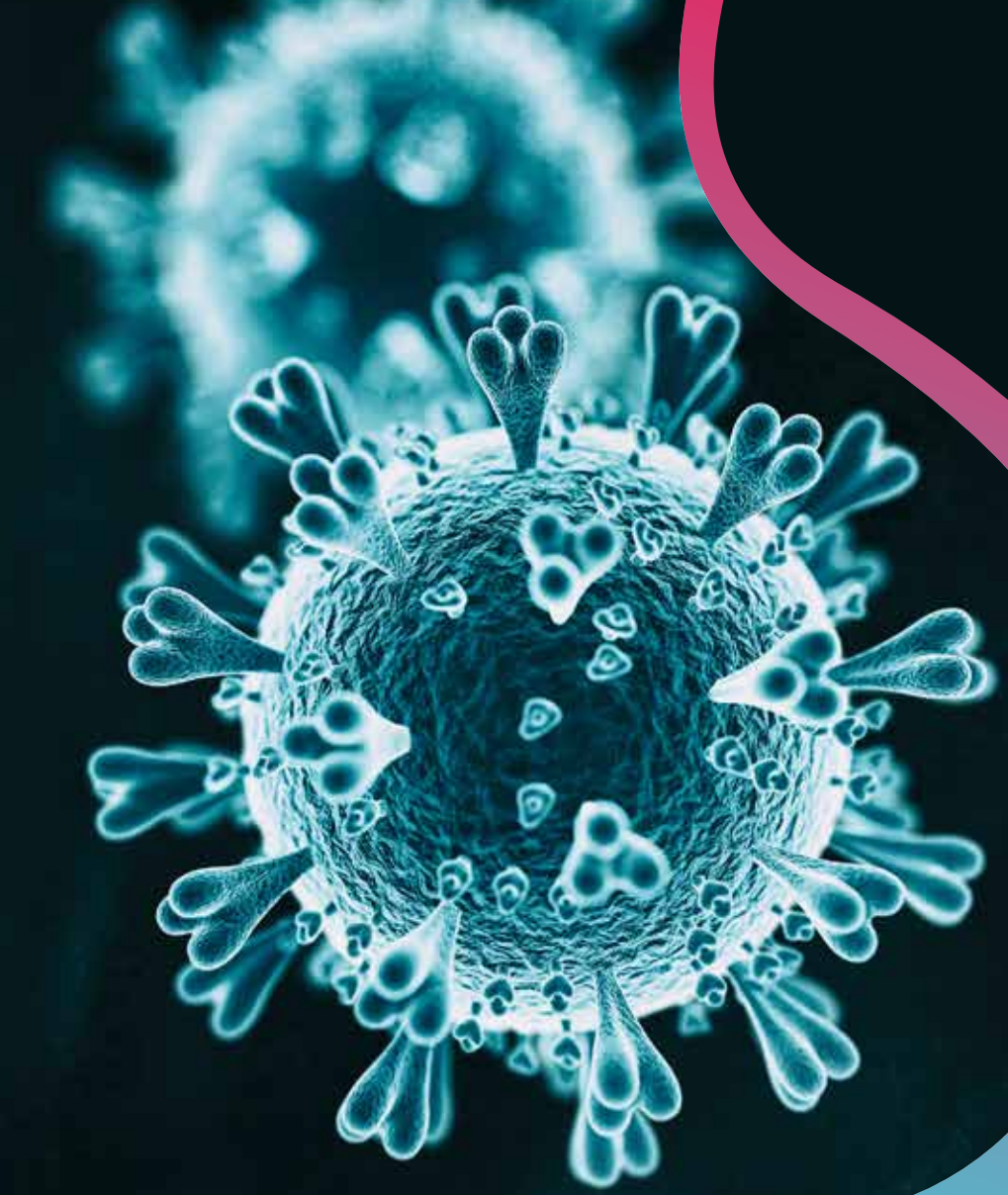

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COVID-19 Resources

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**.

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