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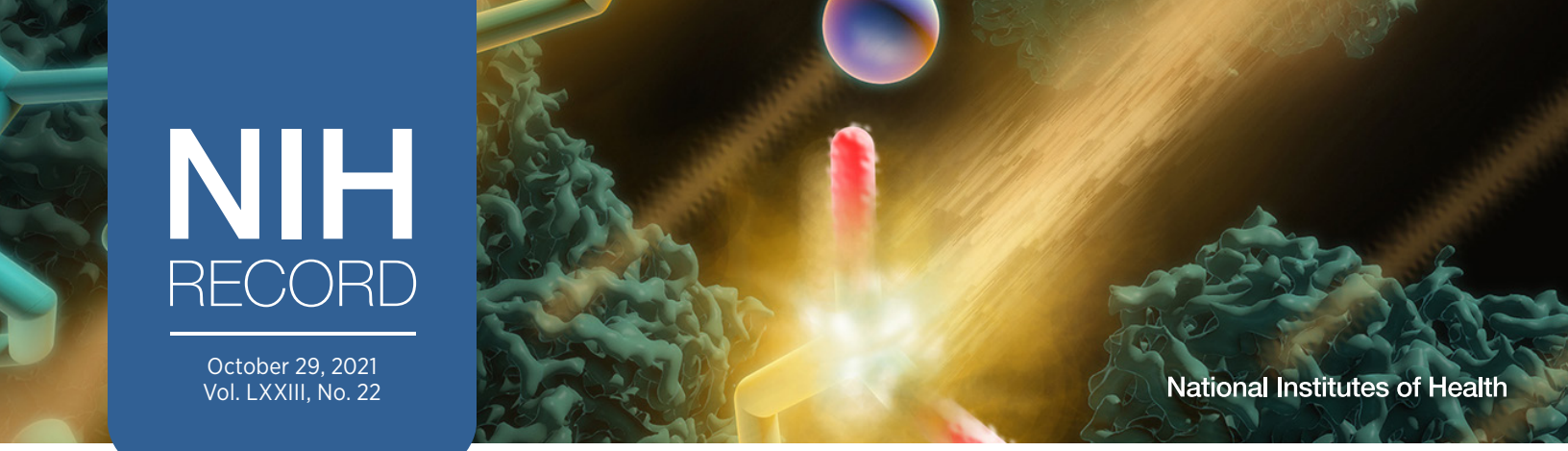


FIGHTING MISINFORMATION

Covid-19 Pandemic Is More Than a Scientific Problem, Says Jha

BY ERIC BOCK

The Covid-19 pandemic is more than a public health challenge. It's also a societal and economic challenge, said Dr. Ashish Jha, during a Contemporary Clinical Medicine: Great Teachers Grand Rounds lecture on Sept. 8.

"Science and facts certainly matter a lot," said Jha, dean of the Brown University School of Public Health. "If we want to reach people, change behavior and provoke people to act in certain ways, it requires a lot more than sharing knowledge, data and facts. It actually requires understanding what people value and find meaningful."


Dr. Ashish Jha

Since SARS-CoV-2 was first discovered in late 2019, scientists have made extraordinary progress against the virus that causes Covid-19. Three safe and effective Covid-19 vaccines are available in the U.S. and several more are available around the world.

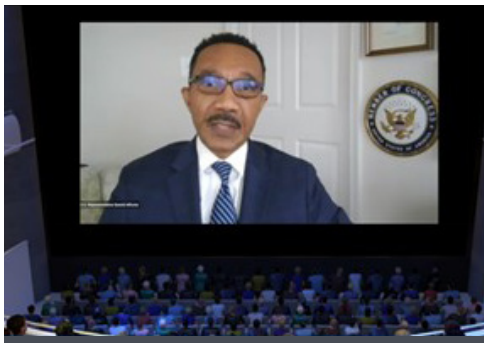
By the end of the year, Jha estimated more than 9.5 billion vaccine doses will be administered. By the middle of 2022, 14 billion doses will be administered.

Researchers also have learned how to treat patients who have the virus. They've studied the effectiveness of masks, learned how to improve indoor air quality and developed accurate and fast diagnostic tests. Scientists have also made progress on the development of therapeutics, although it's been slower than in other areas.

"This is extraordinary progress in 18 months," he noted. "What the global scientific community has done is nothing short of breathtaking."

Experts from outside the traditional biomedical research community have contributed to the effort, Jha said. Computer scientists, for example, modeled the disease. Economists weighed the pros and cons of

SEE **JHA**, PAGE 8


Congressman speaks about NIH initiative. See story p. 3.

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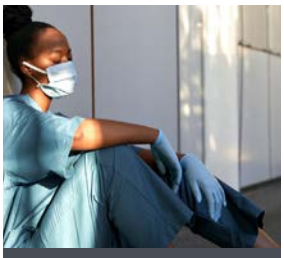
'CORONASOMNIA'

Pandemic Has Interrupted Our Slumber

BY DANA TALESNIK


INSTA_PHOTOS/SHUTTERSTOCK

Feeling extra tired lately? These days, more people are chronically sleep deprived, a phenomenon heightened by the Covid-19 pandemic.

Studies and surveys around the world over the past 18 months show increased insomnia, daytime sleepiness and nightmares and lower quality of sleep—what investigators have come to call "coronasomnia."

"Stress is the single most important factor to trigger sleep problems," said Dr. Charles

SEE **SLEEP**, PAGE 6

RESEARCHER, PROFESSOR, EDUCATOR

Triple Threat: How One Woman Does It All

BY AMBER SNYDER


Dr. Sarah White

There are plenty of researchers, clinicians and professors out there, and many juggle some or all of these roles. And then there are powerhouses who perform all three roles to the utmost degree. Sarah White, M.D., MS, FSIR, FCIRSE, is one of them.

Self-described as a "triple threat," White is an interventional radiologist and a professor of radiology and surgical oncology at the

SEE **WHITE** , PAGE 4

'Child Opportunity Index' Is Topic of NIMHD Health Equity Seminar, Nov. 4

On Thursday, Nov. 4 at 2 p.m. ET, the NIMHD Director's Seminar Series will feature Dr. Dolores Acevedo-Garcia of the Heller School for Social Policy and Management at Brandeis University. She will present "The Child Opportunity Index: Health Equity Applications."

Dr. Dolores Acevedo-Garcia of Brandeis University will present the next lecture in the NIMHD Director's Seminar Series.

Acevedo-Garcia is an expert on social determinants of health and racial and ethnic health equity, especially for children. She is project director for diversitydatakids.org, a comprehensive research program and indicator database of well-being and opportunity for children in the U.S. with a focus on equity. Her talk will introduce the Child Opportunity Index, a measure of children's neighborhood environment, and discuss its applications to measure neighborhood social determinants of health and racial/ethnic equity.

For reasonable accommodation, call (301) 402-1366. The talk will be videocast at https://videocast.nih.gov/watch=42689.

Learn about the NIMHD Director's Seminar Series at https://nimhd.nih.gov/news-events/conferences-events/directors-seminar-series/.

NIH to Celebrate Veterans Day — Nov. 10

The 10th annual Veterans Day Celebration is coming. In response to Covid-19 restrictions, the NIH Human Resources' corporate recruitment unit created a video *Honoring Our Heroes: Hiring Veterans and Military Spouses* that showcases the importance of hiring veterans and military spouses.

On Nov. 10 at 11 a.m. ET, it will be broadcast live on the OHR's YouTube channel (www.youtube.com/channel/UC8C4hFAU9GLUU1ydnCXjE5Q).

The video features executives, hiring managers, veterans and military spouses currently employed at the NIH, championing the military community. View the teaser trailer at: www.youtube.com/watch?v=LTlmUYelRiM.

Virtual Seminar on Grants Administration Set, Nov. 1-4

Participate in NIH's Virtual Seminar on Grants Administration and Program Funding, which is scheduled for Monday, Nov. 1 to Thursday, Nov. 4. The annual event is intended to help demystify the application and review process, clarify federal regulations and policies and highlight current areas of special interest or concern.

If you are an administrator, researcher, early-stage investigator, graduate student or anyone new to working with the NIH grants process, then this seminar is designed specifically for you. Visit https://grants.nih.gov/2021-nih-virtual-seminar.htm#registration for details and to register.

Email questions about the seminar to NIHRegionalSeminars@nih.gov.

BENEFITS OPEN SEASON COMING

2021 Virtual Fair, Live Chat Days Set

The Federal Benefits Open Season runs from Nov. 8 through Dec. 13, 2021. Review health, dental, vision and Flexible Spending Account options to decide on plans for the upcoming year.

This year, various health, dental and vision carriers have come together to provide a virtual benefits fair and several live chat sessions. Closed captioning available. Attend any time during Open Season. Register on the 2021 Virtual Benefits Fair website (https://ve.on24.com/vshow/FVBF21/registration/20180) to attend, and get the information you need.

Live chat days are available. Representatives from all participating carriers will be available to take questions during live chat days from 10 a.m. to 5 p.m. (ET). The live chat schedule is:

Friday, Nov. 12

Friday, Nov. 19

Wednesday, Dec. 1

Wednesday, Dec. 8

The Art of Coping?

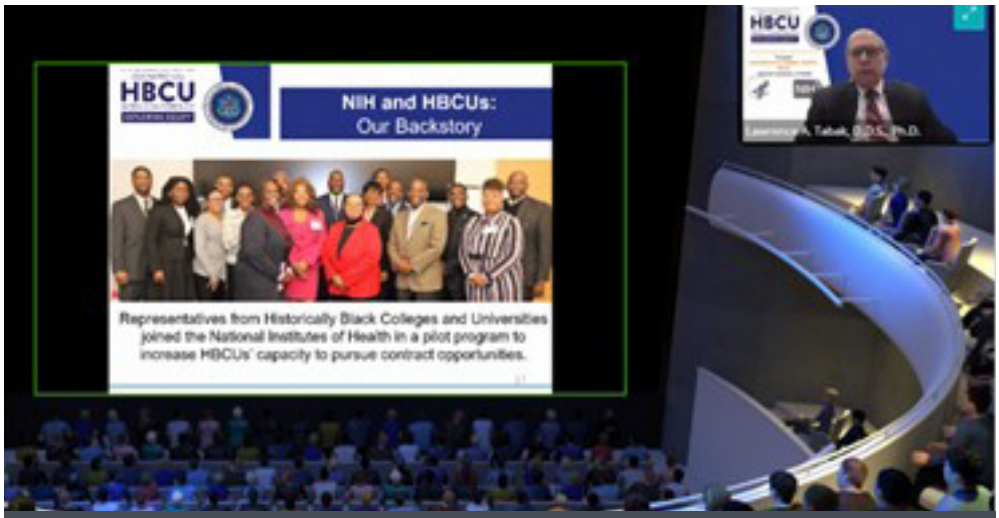
Readers, tell us how you're coping, and give it some flair. The *NIH Record* wants your best poetry or haiku about how you're handling life at the moment. Send us a haiku (Haiku is composed of only 3 lines. Every first line has 5 syllables, the second line has 7 syllables and the third has 5 syllables) or short verse (25 words or fewer). If you prefer to show us how you're coping, submit your original drawing, painting, photo or graphic. Send us a selfie to go with, too. We'll publish the best we get over the next few issues. Send email to nihrecord@nih.gov.

Blood Bank in Critical Need of Donors

The NIH Blood Bank is currently experiencing low blood product inventory, in the context of nationwide shortages. The ongoing Covid-19 pandemic has negatively affected blood drives and donor recruitment.

Unfortunately, the need for blood transfusion at the Clinical Center has remained constant to support patients with cancer, surgeries and emergencies. Currently there is a critical need for O-positive and O-negative blood donors.

To make an appointment, visit www.cc.nih.gov/blooddonor or call the NIH Blood Bank in Bldg. 10 at (301) 496-1048 or the Platelet Center at Fishers Lane at (301) 496-4321.



Dr. Lawrence Tabak, NIH principal deputy director, gave the keynote address during the Federal HBCU Industry Day.

NODS TO 'PATH TO EXCELLENCE AND INNOVATION'

Tabak, Mfume Highlight PEI Initiative at White House Conference

An NIH leader recently highlighted a small business program office initiative as a vehicle that is successfully enabling historically Black colleges and universities (HBCUs) to pursue federal funding opportunities.

NIH principal deputy director Dr. Lawrence Tabak delivered a keynote address, "Achieving Equity Through the Path to Excellence and Innovation (PEI) Initiative," during the 2021 Federal HBCU Industry Day on Sept. 10. The event was part of the annual HBCU Week Conference hosted by the White House Initiative on HBCUs.

Equity was the overall theme for the conference. In his remarks, Tabak said ensuring that NIH promotes equity is a responsibility he "doesn't take lightly." He added that the PEI Initiative promotes equity in revenue opportunities for HBCU students and faculty, as well as equity in resolving health disparities.

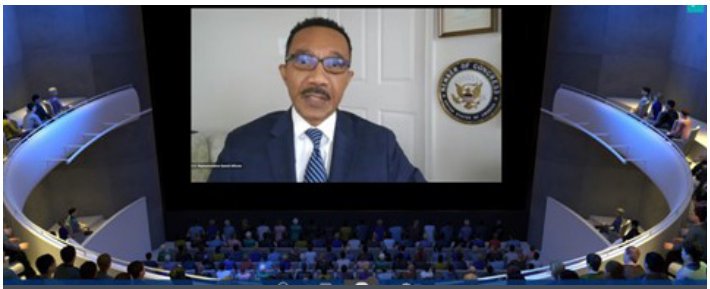
"The PEI Initiative was created to provide outreach, training and technical assistance to HBCUs interested in pursuing contracts at NIH and other federal agencies," Tabak said, explaining that PEI's mission is to empower these academic institutions with the "knowledge, resources and skills they need to effectively compete for contracts and win partnership opportunities within the National Institutes of Health."

As evidence of the effort's achievements, Tabak shared success stories from each of PEI's six pilot HBCUs, including a $12 million award to Meharry Medical College for outreach and engagement efforts in communities disproportionately affected by the Covid-19 pandemic. PEI's pilot concluded at the end of 2020; a new cohort (PEI 2.0) consisting of 21 HBCUs and 42 small businesses was launched in May 2021.

In a separate presentation during Industry Day, Diane J. Frasier, head of NIH contracting activity and director of the Office of Acquisition and Logistics Management, introduced HBCUs and business partners that will participate in the initiative's next 18-month phase of training and procurement readiness development.

Industry Day speakers also included David Dasher, deputy assistant secretary for acquisitions in the Office of the Assistant Secretary for Financial Resources at HHS; NIH deputy director for management Dr. Alfred Johnson; Bowie State University president Dr. Aminta H. Breaux; and Sedika Franklin, associate director, White House Initiative for HBCUs.

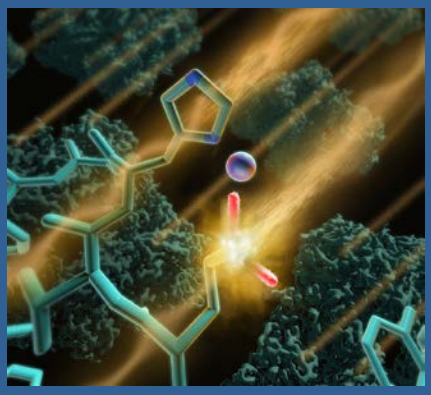
Dasher spoke about the importance of diversity and inclusion and the valuable role that HBCUs fulfill in health services and medical research.



During the conference, U.S. Rep. Kweisi Mfume acknowledged the NIH Path to Excellence and Innovation Initiative in remarks at a workshop on achieving equity.

Johnson discussed the NIH UNITE program, which is a framework to end structural racism across the biomedical research enterprise and spur widescale, systematic changes.

Earlier in the conference, U.S. Rep. Kweisi Mfume (D-MD) also acknowledged the NIH PEI Initiative in remarks during a workshop that advised HBCUs to consider achieving equity through consortium building. Moderated by Dr. Yvonne T. Maddox, president of the TA Thornton Foundation and NIH PEI 2.0 senior strategic advisor, the panel discussion included speakers from three institutes, the NIH SEED office and a PEI HBCU.



ON THE COVER: *This image of beta-galactosidase at 3.2 Å resolution illustrates the differential effect that electron radiation (orange rays) has on different parts of proteins (green) during high-resolution cryo-electron microscopy imaging. Acidic side chains, like glutamate (bottom, red atoms) break down first, before more basic side chains, like histidine (top, blue atoms).*

IMAGE: VERONICA FALCONIERI AND SRIRAM SUBRAMANIAM, NCI

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Editor:
Carla Garnett • *Carla.Garnett@nih.gov*

Associate Editor:
Dana Talesnik • *Dana.Talesnik@nih.gov*

Assistant Editor:
Eric Bock • *Eric.Bock@nih.gov*

Editorial Intern:
Amber Snyder • *Amber.Snyder@nih.gov*

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National Institutes of Health
Turning Discovery Into Health

White

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Medical College of Wisconsin (MCW). She shared her experiences in a lecture titled: "Triple Threat of Teaching, Research and Patient Care: Easy as 1-2-3," part of a new monthly lecture series, "Women Leaders in Academic Research," hosted by NIH's Center for Interventional Oncology.

The series highlights and honors women leaders in academic research, especially related disciplines of interventional radiology (IR), biomedical engineering, radiology, imaging sciences, data science and image-guided oncology. The series was established as a small effort to help counter the under-representation of women in academic research and the impact of gender disparity and implicit bias on role modeling and mentoring.

Can this balancing act of three priorities still be done? White asked her viewers.

"I wanted to do all three," she said, "because I love teaching, research is integral to who I am and I really want to propel the field of interventional radiology forward."

White received her M.D. from New Jersey Medical School and worked with Dr. Brad Wood at NIH one summer, forging a friendship that continues to this day. The IR field is overwhelmingly male (93 percent), and White experienced some of that male-centric bias several decades back, while at NIH as a summer intern.

Dr. Brad Wood, director of NIH's Center for Interventional Oncology, led a discussion about the lack of female representation in the field. Panelists included Dr. Tze Min Wah, senior consultant radiologist in diagnostic and interventional radiology and honorary clinical associate professor, University of Leeds, United Kingdom.

"People kept calling me nurse," she said, and she realized that, as a woman, she was a "different species" in her field. She has never seen herself as different, but she began to realize that others did. She learned to not accept "no" as an answer and used adversity to make herself tougher.

White was the University of Pennsylvania's first DIRECT (Diagnostic and Interventional Radiology Enhanced Clinical Training) pathway resident. At first, she felt ostracized from her coworkers because they were surgeons, and she was an interventional radiologist.

"They tried to kill me [with long working hours]," she recalled. "I said 'bring it on.'" She worked longer hours and made herself indispensable.

"By the end, they wanted me to switch to surgery," she laughed.

White is now a professor of radiology and surgical oncology at MCW, but also considers mentorship to be an integral part of her career.

"The most meaningful way to succeed is to help other people succeed," she shared. Mentors are everywhere, she added, although you may need to work to find them. She also recommended serving on committees, as those leadership roles can help you achieve qualifications for promotion.

She is still a practicing researcher and clinician at MCW in addition to her professorship. How does she make it all work?

Find a clinical niche for yourself, she recommends. Learn a new procedure or treatment strategy and you can become the local expert,

Part of White's lecture was also devoted to the virtual panel presentation and discussion. The full event is archived at https://videocast.nih.gov/watch=42596.

Panelist Jocelyne Rivera is the first Hispanic woman accepted to NIH's Oxford-Cambridge Scholars Program.

which will lead you to be the go-to person for that procedure. White took this approach and made herself the go-to person for Sphenocaths and AngioVac procedures.

Research can be more difficult than clinical work, she concedes, because it has to be funded.

her mentor, Wood, director of NIH's Center for Interventional Oncology.

The main topic of conversation was the lack of female representation in interventional radiology. The number of women IRs is hard to ascertain from current data, but, as of 2019-2020, less than 20 percent of all IR trainees are women who go on to practice in their field.

Dr. Tze Min Wah, a senior consultant radiologist at the University of Leeds, U.K. and one of the panelists, sent out surveys in an effort to understand why IR was "less attractive" to women. She asked participants to share their experiences and theories. She found that the top-ranking concerns were: work-life balance and on-call hours, radiation exposure and concerns about pregnancy and a male-dominated environment.

Wah and the other panelists also hypothesized that the lack of women in the field—and thus a lack of female mentorship and leadership—could also disincentivize women IR trainees.

How can the IR profession be made less prohibitive to women? Jocelyne Rivera, a current Ph.D. NIH OxCam scholar, shared some suggestions. Work/training options that allow family life, and increased female representation on committees and society leaders ranked high on the list, as did radiation training that specifically addressed pregnancy concerns.

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"The most meaningful way to succeed is to help other people succeed."

-DR. SARAH WHITE

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"Find something that you love that no one has studied yet," she advised. Serving on committees can help identify areas of research that are worthy of further study.

As much as she tries to balance her commitments, White conceded that there are times where she may devote more time to one area or another.

"You have to be able to give yourself a break," she said. "Realize 'I'm a triple threat, but I'm not it all the time. Not every day.' My whole picture, I am, but certainly not on a day-to-day basis, month-to-month basis. Maybe yearly, but you have to be able to give yourself that break."

Part of White's lecture was also devoted to a panel presentation and discussion led by

Wood also pointed out fellow triple threat Dr. Amy Deipolyi's good work revealing a discrepancy in the amount of industry funding that women researchers received—1 percent of all funding despite making up 13 percent of the field—that "un-levels the playing field from day one."

To conclude the talk, an audience member asked White: "What's the one thing you would ask from men?"

First, she responded with an entreaty to women. "Don't look at men as [your adversaries]," she advised, but as mentors and supporters. "Your mentors don't have to look like you." To men, she asked that they acknowledge that there is a difference between men in IR and women in IR: "When we say there's a disparity, there is a disparity."

The full lecture can be viewed at https://videocast.nih.gov/watch=42596.

For more information, and other archived lectures, see https://www.cc.nih.gov/centerio/women_leaders.html.

BD Veritor System for Rapid Detection of SARS-CoV-2. The lateral flow immunoassay with a reader delivers electronic results intended to be used in point-of-care settings.

PHOTO: BD

RADx Issues New Awards for Covid-19 Test Development

The NIH Rapid Acceleration of Diagnostics (RADx) initiative announced that it has issued new awards for Covid-19 diagnostic testing projects. These projects were selected to address the need for new types of tests. Awards total $77.7 million to develop and manufacture these 12 new rapid diagnostic technologies, which are expected to expand testing options and capacity for the country.

The projects are part of the RADx Tech program, which involves an intensive concept viability "shark-tank"-like assessment conducted by a panel of technical, regulatory and business experts. The awards support the development, validation, scale-up and manufacturing with the goal of bringing needed tests to the market as early as this year.

"These technologies represent important innovations to address the need for ready access to rapid, low-cost tests everywhere in the country, including in every home," said Dr. Bruce Tromberg, director of the National Institute of Biomedical Imaging and Bioengineering and lead for RADx Tech. "The potential to test simultaneously for multiple types of infection at the point-of-care is a new frontier that we hope to advance and could be a major step toward transforming U.S. health care."

Read more about the new awards at www.nibib.nih.gov/news-events/newsroom/nih-radx-initiative-expands-covid-19-testing-innovation-additional-types-rapid-tests.

Sleep

CONTINUED FROM PAGE 1

Morin, a psychology professor at Université Laval in Quebec, Canada, who opened the third annual Sleep 101 symposium. The Sept. 10 event was co-sponsored by NHLBI, the American Academy of Sleep Medicine and the Sleep Research Society.

While sustained stress and anxiety have triggered coronasomnia, other pandemic-specific factors also have impeded regular, quality sleep. Shifting work schedules, disrupted routines and confinement have thrown off circadian rhythms and disturbed sleep, even for people actively trying to rest more.

"For some, it's produced reduced sleep efficiency despite increased time in bed," noted Morin.

In a survey of more than 50,000 people in 44 countries, more than one-third of respondents reported sleep problems, with numbers substantially higher among health care workers and Covid-19 patients. Another telling sign: last year, internet searches for "insomnia" soared and remained high.

Another study with more than 22,000 people across 13 countries—the international collaboration Covid-19 sleep study (ICOSS)—revealed many participants had much greater difficulty falling and staying asleep as well as increased early-morning awakenings, nightmares and daytime fatigue.

"All sleep-wake problems were significantly increased during the first wave of the pandemic," exacerbated by confinement and financial stress, said Morin.

In Canada, a smaller insomnia study that had baseline sleep data from 2018 showed an inordinately high number of new cases of insomnia in 2020 among previously good sleepers.

"For many people who develop insomnia during a major stressful event, some will resume normal sleep patterns," said Morin, "but others will continue suffering sleep disturbances even after the initial triggering event disappears."

In fact, many people who had a prior Covid-19 infection commonly continue to experience fatigue and sleep disturbances, among other lingering symptoms, long after recovering from their initial infection, a condition called Post-Acute Sequelae of SARS-CoV-2 (PASC) or "long Covid."

Whether certain biological pathways lead to fatigue in PASC is currently under study, said panelist Dr. Reena Mehra, staff physician and director of sleep disorders research in the Sleep Center of the Neurological Institute at Cleveland Clinic.

"Sleep and circadian rhythm has key functioning in terms of our immunity, infection susceptibility and also our post-infection recovery," said Mehra. "It's unclear yet whether those with sleep and circadian rhythm disruption are more likely to contract SARS-CoV-2 because of compromises in immunity or perhaps have less resilience and worse outcomes, including PASC."

Four sleep experts discuss the pandemic's effects on our sleep—clockwise (from above) Dr. Charles Morin, Dr. Reena Mehra, Dr. Hans Van Dongen and Dr. Natasha Williams.

Even in normal times, chronic sleep deprivation raises health risks, from mood disorders to cardiovascular issues to inflammation. The pandemic carries additional risks, warned Mehra. For example, sleep-related hypoxia—particularly the amount of time spent below 90 percent oxygen saturation—is associated with worse Covid-19 outcomes. Also, obesity, a major risk factor for obstructive sleep breathing disorders, is a leading risk factor for hospitalization and death from Covid-19.

• • •

"Sleep and circadian rhythm has key functioning in terms of our immunity, infection susceptibility and also our post-infection recovery."

DR. REENA MEHRA

• • •

The Cleveland Clinic established a Covid-19 recovery clinic in February—directed by Dr. Kristin Englund, vice chair of infectious disease—that as of July had enrolled 900 PASC patients, and launched an app to screen for sleep disorders, led by Dr. Nancy Foldvary-Schaefer, director of the Cleveland Clinic's Sleep Disorders Center.

Mehra advocated for leveraging more data from electronic health records and wearable devices to better understand the links among sleep health, viral immunity and Covid-19 recovery. She also urged more studies into sleep health disparities, as certain populations are disproportionately burdened with severe Covid-19.

"There's a strong and growing body of evidence about disparities in sleep quality and sleep duration," said Dr. Natasha Williams, assistant professor, Institute for Excellence in Health Equity at NYU's Langone Health.

NHLBI's Multi-Ethnic Study of Atherosclerosis (MESA) study, for example, has found racial and ethnic differences in sleep-disordered breathing most pronounced in those with shorter sleep duration.

"What's really key is there are also

Sleeping on the job? Morin (second from r) poses with his lab mates.

differential stress exposures," she said, from socio-cultural factors and discrimination to chronic stress and disease, "and these are largely contributing factors to ethnic differences in sleep outcomes."

The disparities exposed during Covid-19 necessitate rapid studies of the physiological components and structural and social mechanisms at play, she said. "We want to have good structures in place—primary prevention, safety net programs, access to quality health care—so we can better address these unfair and unavoidable differences of health status among groups."

One universal challenge during the pandemic has been dysregulated sleep caused by redistributed work schedules and routines, said Dr. Hans Van Dongen, director, Sleep and Performance Research Center and professor, Elson Floyd College of Medicine, Washington State University.

"There is a cost to not getting enough sleep that accumulates over days of insufficient sleep," he said.

Normally, he explained, the sleep-wake cycle features a balance between the circadian process—which builds pressure for wakefulness during the day and withdraws it during the night—and the homeostatic process, which ensures the body gets enough sleep based on waking hours. For people working the night shift, the process flips and puts circadian rhythms out of sync, an imbalance leading to daytime sleepiness that applies to anyone with altered schedules during the pandemic.

"What we see is a profound interaction between circadian and homeostatic processes that fundamentally changes the way sleepiness builds during the waking period and falls depending on where and when the work period is placed," Van Dongen said.

The question looms: where is the middle ground for optimizing work hours while minimizing sleepiness-related risk? With lessons from the pandemic, suggested Van Dongen, "we have an opportunity to revisit how we manage our working-time arrangements and the way we schedule and conceptualize work."

Morin agreed. "We have to take this [chronic sleep deprivation] seriously because we know a great deal more now about the burden of insomnia on mental and physical health, public safety and occupational health," he said. This is an opportune time to examine the potential of different interventions, based on large-scale studies, toward improving overall sleep health for all.

For more information: www.nhlbi.nih.gov/news/2020/covid-and-sleep-better-slumber-during-pandemic-may-help-protect-your-health.

The AASM/SRS task force published new guiding principles for work-shift duration to help manage fatigue-related risks: https://aasm.org/principles-for-work-shift-duration-published-aasm-srs/.

DEADLINES APPROACHING

Covid-19 Vaccination Mandate Applies to All NIH Staff

"Vaccine protection for all adults is our best hope of putting Covid-19 behind us," said NIH director Dr. Francis Collins in an Oct. 15 email to staff. He highlighted several important deadlines set by the federal Covid-19 vaccination mandate. See more details at www.saferfederalworkforce.gov/overview/. The Safer Federal Workforce Task Force is led by the White House Covid-19 Response Team, the General Services Administration and the Office of Personnel Management.

The Covid-19 vaccination mandate applies to all NIH staff—including employees, contractors, trainees, volunteers and tenants—whether you're working onsite, remotely or on full-time telework. It is important to act soon, as failure to meet the deadlines outlined below may lead to disciplinary action up to and including removal from federal service. If you're not yet vaccinated, don't wait until Nov. 22! That will be too late. Note: Covid-19 boosters are not included as part of the vaccination mandate and need not be reported. Schedule your vaccination at https://clinweb.cc.nih.gov/cct.

Federal Employees. Your last vaccine dose must be received no later than Monday, Nov. 8, 2021 to meet the Nov. 22 deadline for being fully vaccinated. NIH federal employees fully vaccinated at NIH need not take any further action; you're set. Those vaccinated somewhere other than NIH must submit proof of vaccination through the Covid-19 Vaccination Status Form, which can be accessed from personal devices, by Nov. 22.

Contractors. You must be fully vaccinated by Wednesday, Dec. 8. Contractors will be required to report their vaccination or seek a medical or religious exemption directly through their employer. While contractors are encouraged to report their information through the Covid-19 Vaccination Status Form, doing so will not meet the requirement for reporting directly to their employer. For questions, contact your employer or contracting officer.

Other Staff. We continue to await information about requirements for trainees, volunteers and tenants, but we anticipate a similar timeframe as that for contractors, so don't wait. Go ahead and get vaccinated if you haven't already or report your vaccination to NIH, if you received it in the community.

We will continue to update the Vaccination Requirements intranet page, https://employees.nih.gov/pages/coronavirus/vaccination-req, as guidance is finalized.

Jha

CONTINUED FROM PAGE 1

public health policies and sociologists have raised important societal questions.

And yet, still more than a third of Americans are saying "no thanks" to a vaccine that is available in pharmacies across the country. This is happening while 1,500 Americans are dying every day from Covid-19 and hospitals reach capacity.

"The pandemic has created a breeding ground for both misinformation and disinformation," he explained.

While misinformation and disinformation campaigns are not new, they feature new wrinkles in 2021.

Most Americans get their news from television, social media platforms and websites or apps. What first appears as a lie on Twitter or Facebook, for instance, will be featured on television or in the newspaper the next day. Then, people talk about what they saw with their friends or family, who they trust. What results is widely circulated misinformation.

"We all live in information echo chambers," Jha said. "Information we see is amplified and bounced off of other sources and reinforces for us that the information we are seeing is the whole truth and complete picture."

Both foreign agents and homegrown actors run highly coordinated disinformation campaigns. The goal of most campaigns is to make money.

Many public health officials are not good at communicating uncertainty, Jha said. In February and March 2020, many officials advised the public not to wear masks because it was wrongly thought that SARS-CoV-2 couldn't spread asymptomatically.

"We should not overcall things and we've got to be very careful about what we know and don't know," he cautioned. "And we should level with people about what we don't know."

There is a flipside, which can also get officials in trouble.

When the vaccine rollout first began, some scientists said they didn't know whether vaccines would decrease transmission because they didn't have real-world data. Consequently, some people heard that vaccines do not reduce transmission. He advised that scientists should've said something like, "we don't know for sure. But most vaccines do, and I have every reason to believe this one will as well."

Scientists often fail to consider people's lived experiences, he explained. In March and April 2020, public health officials advised people to stay home and physically distance. For many, however, following those guidelines wasn't possible. Essential workers, for example, couldn't stay at home.

"It was a failure in our community to understand what people could and could not do," he said. "We needed to do a better job of explaining that 'if you could stay home, you should try to stay home. But if you can't stay home, here are the things you need to be doing to keep yourself and your family safe.'"

To fight this "infodemic," Jha advised public health officials to get out of their own echo chambers and seek perspectives different from their own. Understanding why people think what they think is important.

Additionally, officials must do a better job of explaining that science is a process. Advice changes as new data emerges.

Recently, someone who received the single-dose Johnson & Johnson vaccine asked Jha whether they needed an additional dose.

"The short answer is, we don't know," he responded. "But here's how we will know, here's when we will, here's why that will be a better time to make a decision."

To fight this "infodemic," Jha advises public health officials to get out of their own echo chambers by seeking perspectives different from their own. Jha gave a recent Great Teachers Grand Rounds virtual lecture.

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"People trust things that they can verify and participate in. We have to do a much, much better job of creating participatory science."

–DR. ASHISH JHA

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A lot of officials still expect the public to trust experts and science. For many Americans, that's enough. Others don't trust expert advice. Those pushing misinformation have created a participatory way of engaging people.

"Science is not a single fact," he said. "People trust things that they can verify and participate in. We have to do a much, much better job of creating participatory science."

Failing to counter misinformation effectively will result in more cases and hospitalizations, he said.

There aren't enough researchers fighting against misinformation. He urged scientists to engage the public using high-quality information.

"Think about the conversations you would have around the dinner table or with your friends," Jha concluded. "You need to have those conversations in the grocery stores, your local community and you need to have those conversations on local TV."

Newly Diagnosed with Covid-19?

NIMHD researchers are recruiting adults newly diagnosed with Covid-19 (within 72 hours) for a remote study. This is a remote study with no in-person visits. The study will collect physical health data using a temperature patch and digital wristband that will be provided to each patient. Collected data will be uploaded to an app using a smartphone that will help researchers gain a better understanding of how Covid-19 progresses in patients and its long-term effects in patient groups with different demographics and risk profiles. To learn more, contact the NIH Clinical Center Office of Patient Recruitment at 866-444-2214 or prpl@cc.nih.gov. Refer to study # 000315-MD. (TTY: 800-877-8339) https://go.usa.gov/x676m

Critical Time Window for Rehab After Stroke

Researchers found that intensive therapy, added to standard rehabilitation, produces the greatest improvement when administered 2-3 months after a stroke. The results could lead to improved rehabilitation programs for stroke patients. NINDS, NICHD and NIDCD supported the study.

Study suggests a critical window after a stroke in which intensive rehab yields optimal results.

PHOTO: IMTMPHOTO/SHUTTERSTOCK

Results appeared in the *Proceedings of the National Academy of Sciences.*

About 750,000 new strokes occur in the U.S. each year. Recovery from stroke-induced brain damage requires networks of nerves to adapt and reorganize. This "neuroplasticity" naturally occurs during early development. But studies in rodents suggest there is a brief period of similarly high neuroplasticity after a stroke, during which intensive motor training can lead to nearly full recovery. But no evidence for a similar recovery window in humans has been found before.

A research team conducted a randomized phase II clinical trial to find out if such a window exists in people. They recruited 72 patients from a rehabilitation hospital in Washington, D.C., who were randomly assigned to 1 of 4 groups. All participants received standard stroke rehabilitation therapy.

Participants in 3 of the 4 groups received an extra 20 hours of intensive motor skills therapy. The extra therapy began in the first group within 30 days of stroke onset, in the second group 2-3 months after onset and in the third group, 6-7 months after onset. The fourth (control group) received no extra therapy.

People in the 2- to 3-month therapy group showed the greatest improvement in arm and hand function 1 year after their strokes. Participants in the 30-day group showed smaller but still significant improvement. By contrast, participants in the 6- to 7-month group showed no significant improvement over controls.

Larger clinical trials are needed to better pin down the timing, duration and optimal dose of therapy during this critical window.—adapted from *NIH Research Matters*

High-Dose Movement Therapy Produces Lasting Benefits for Children with Cerebral Palsy

Children with hemiparetic cerebral palsy, a movement disorder that affects use of one side of the body, showed improved use of the arm and hand after receiving a high dose of Constraint-Induced Movement Therapy (CIMT) in a recent clinical trial.

The study, published in *Pediatrics,* suggests the more intensive level of CIMT—3-hour sessions, 5 days a week for 4 weeks—produced the most noticeable and longer lasting improvements. A moderate dose—2.5-hour sessions, 3 days a week for 4 weeks—did not produce gains significantly greater than the control group, which received a standard combination of physical and occupational therapy.

CIMT involves restricting the better functioning arm and hand with a splint or cast while a trained therapist engages the child in activities that reinforce and shape the movement and functional skills in the impaired arm and hand. While CIMT is widely accepted as more effective than conventional forms of physical and occupational therapy, little was known about effects of different doses of CIMT or whether constraints should be used only during the sessions or continuously throughout treatment.

During this NICHD-funded study, 118 children ages 2 to 8 years old with cerebral palsy were randomly assigned to 1 of 4 treatment groups—30 or 60 total hours of CIMT combined with either a splint or a cast—or to the control group.

Children who received the high dose of 60 hours of CIMT using either constraint had the greatest improvements on a variety of upper extremity skills, such as grasping, moving, manipulating objects and self-care activities, as evaluated after treatment and 6 months later. However, the research team noted that children in the control group also improved more than expected. The authors think this may have resulted from a higher-than-normal dose of conventional therapy, lasting 4 to 5 hours per week. More research is needed to evaluate these differences and long-term benefits of CIMT.

Meth Overdose Deaths Surge

Overdose deaths involving methamphetamine nearly tripled from 2015 to 2019 among people ages 18-64 in the U.S., according to a NIDA study published in *JAMA Psychiatry.*

However, the number of meth users during this time did not increase as steeply. The new study suggests higher-risk patterns of methamphetamine use may be contributing to the rise in overdose deaths.

In 2020, more than 93,000 Americans died from drug overdoses, marking the largest 1-year increase in overdose deaths ever recorded, according to provisional CDC data. This increase has largely been driven by rising overdoses

Meth overdose deaths nearly tripled from 2015 to 2019.

PHOTO: HIKRCN/SHUTTERSTOCK

involving synthetic opioids, primarily the highly potent fentanyl. However, questions remain on how trends in methamphetamine use—which is becoming more dangerous due to contamination with fentanyl, multiple substance use and regular use—contribute to greater risk for overdose deaths.

The study authors analyzed data on overdose deaths involving psychostimulants other than cocaine from cause-of-death files in the National Vital Statistics System from 2015 to 2019. They also assessed the methamphetamine use patterns of U.S. adults ages 18 to 64—the age group at highest risk of substance use and overdose deaths—from the National Survey on Drug Use and Health.

The researchers found that from 2015 to 2019 the number of overdose deaths involving psychostimulants other than cocaine (largely methamphetamine), rose from 5,526 to 15,489, a 180 percent increase. However, methamphetamine use only increased by 43 percent over the same period.

In addition, the data show steep rises in frequent meth use between 2015 and 2019, as well as use of meth and cocaine together during this period.

The populations with methamphetamine use disorder (MUD) have also become more diverse. Historically, MUD has been most prevalent among middle-age White people, but this analysis found American Indians/Alaska Natives had the highest prevalence. The researchers also found a 10-fold increase in MUD without injection among Black people, a much steeper increase than among other racial and ethnic groups.

Yet another troubling trend: MUD quadrupled in young adults ages 18 to 23, of particular concern, as this is a period of continued brain development for young adults, whose drug use could have long-lasting consequences.

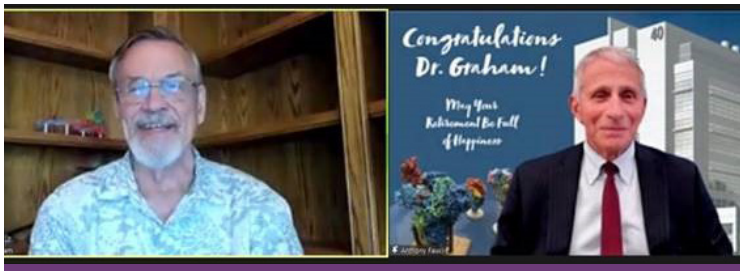
VRC's Graham Retires After More Than 20 Years

BY SHERIDAN MACAULEY AND DEVIN FISHER

Dr. Barney Graham retired after more than 20 years as an investigator at the NIAID Vaccine Research Center (VRC), where he served as VRC deputy director and chief of the Viral Pathogenesis Laboratory. His career has spanned numerous pathogens and disciplines. He is an immunologist, virologist, vaccinologist and clinical trials physician whose work focused on respiratory viral pathogens, pandemic preparedness and emerging viral diseases.

Graham led VRC development efforts for RSV, influenza and Covid-19 vaccines, among many other noteworthy achievements. His work on coronaviruses before and during the Covid-19 pandemic was critical to development of the highly effective vaccines that are in use in the U.S. and worldwide. Countless lives have been saved as a result of his efforts.

In addition, Graham has been a consummate mentor and teacher to many researchers. He earned his M.D. from the University of Kansas School of Medicine in 1979. He completed both his residency and chief residencies in internal medicine and a clinical fellowship in infectious diseases at Vanderbilt University School of Medicine, where he also earned a Ph.D. in microbiology and immunology in 1991, and subsequently became a professor of medicine.



NIAID director Dr. Anthony Fauci (r) speaks on a virtual tribute to VRC deputy director Dr. Barney Graham.

In 2000, Graham was recruited as one of the founding VRC investigators and he has been involved in vaccine design and clinical evaluation of candidate vaccines for more than 30 years.

Graham has been an exemplary investigator and leader not only at the VRC, but also in the global biomedical community, where he has donated much of his time and expertise as an advisor to the World Health Organization and many other organizations. His insightful, inventive and patient approach to research will be greatly missed in the VRC, NIAID and NIH communities.

The VRC honored Graham during a virtual celebration on Sept. 9 to mark his retirement after 20 years as an investigator there. The event was emceed by Dr. Karin Bok, VRC's director of pandemic preparedness and emergency response, and included several speakers from across NIH and NIAID, such as NIH director Dr. Francis Collins, NIAID director Dr. Anthony Fauci and VRC director Dr. John Mascola.

Just a few of the more than 200 well wishers at Graham's virtual retirement gathering

Many of Graham's past colleagues and mentees also spoke, including former fellows Dr. Kizzmekia Corbett, now an assistant professor at Harvard University, and Dr. Jason McLellan, an associate professor at the University of Texas at Austin, as well as Graham's mentor from Vanderbilt University, Dr. Kathryn Edwards, and former VRC director Dr. Gary Nabel.

Many familiar faces could be seen in the audience of over 200. Several attendees used celebratory virtual backgrounds and contributed their thoughts and well wishes in the Zoom chat.

At the conclusion of the event, a word cloud of terms that guests used to describe Graham was presented. After such a brilliant and successful career, it is noteworthy that the most frequently used word by his colleagues was "kind." Those who know Graham will agree that the word resonates throughout his entire being.

The VRC remains committed to basic and translational research and to the research and discovery of novel vaccines and monoclonal antibodies and is organizing VRC laboratories and sections to accommodate for Graham's retirement.

Although he could never be replaced, Graham's legacy of excellence in vaccine research remains, and the VRC continues to honor this by fulfilling its mission of improving human health through the rigorous pursuit of effective vaccines.

OCPL's George Retires

BY DANA TALESNIK

It's said a picture is worth a thousand words. A great image can embody a story and, critical to NIH's mission, help explain the science. To envision and create those vibrant images is a skill honed by Jill George, who retired in October and will be sorely missed, not only for her talent but also for her friendliness, kindness and patience.

For 15 years, George helped develop

visuals and presentations for NIH leadership. As a visual information specialist in the Director's Presentations Branch of OD's Office of Communications and Public Liaison (OCPL), she produced materials for speeches, online and print publications and social media.

"I can't count how many images you inserted into my slide decks to make them less boring," said Dr. Lawrence Tabak, NIH principal deputy director, on a virtual retirement montage. "And you did this with great humor, expertise and speed. No matter what the deadline, somehow you were always able to meet it."

Jill George, with Izzy

George arrived at NIH to assist then-NIH director Dr. Elias Zerhouni and later worked closely with director Dr. Francis Collins, including developing countless images for his Director's Blog.

"Little by little over these 12 years, Jill has gotten into my head and she knows, almost before I do, what kind of a visual approach would work," said Collins. "We thank you for everything you've done for us—for your creativity, for your smile, for your sense of humor, for your ability to take ideas and turn them into pictures that have illuminated everything that NIH is trying to do."

George said the presentations team figuratively goes to Oz. "We'd pretend we're Dorothy in Kansas" to help relate to the curious non-scientist, she said. "My strong point is to understand the top-lying message and bring it home, so science is fun for everybody."

It turns out, George may have been genetically predisposed to working in the field of visual arts. Her older sister enjoys painting, her younger sister, crafting. Her brother is a dental technician who flexes his artistic side creating and color-matching teeth. "We are all artists in our own right," she said.

George graduated with a B.S. in biology from Roanoke College and then spent 6 years working as a marketing assistant and lab tech at Bethesda Research Laboratories (before it became Life Technologies and later Invitrogen). That first job is forever near and dear to her heart, as it's where she met her husband, Jay, who was working on his doctorate and would come lecture at the lab.

Years later, after working various other jobs and raising two children—Jason and Sara—George came to work as an administrative assistant at Palladian Partners, a job that ultimately led her to NIH.

"I always understood the importance of computers and databases, and I wanted to learn as much about computers as possible," recounted George, who asked her husband to teach her how to use PowerPoint. Soon after, a supervisor at Palladian asked if anyone on staff knew PowerPoint; NIH was looking for someone to help with presentations.

At the time, "I knew the basics—not much—but I knew how to get to the Help button," she quipped. "So I went to NIH and met John Burklow and the rest is history. They hired me!" It was a great fit, she said: better salary, easier commute from her home in Gaithersburg and an office with a view, not to mention many beloved colleagues, including Dr. Kim Pelis. They not only worked together creating speeches, but also shared an office and the same birthday.

Pelis recollected, "Jill, you've not only been our goodwill ambassador and logistics queen, you've also been our PowerPoint pro, our constant voice of reason and my speeches' better half."

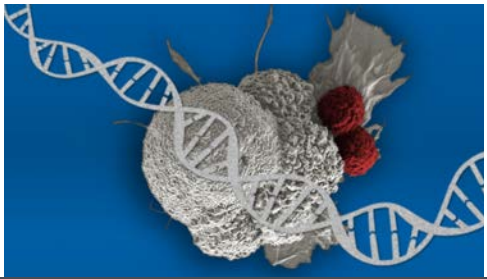
"Talk about a lifesaver," said Burklow of George's technical and design assistance. More than that, though, "It's who you are that we cherish so much—always easy to work with, always quick to laugh, always willing to jump in and help out even on short, or zero, notice," said Burklow, Collins's acting chief of staff. "You're a kind, thoughtful, even-keeled person—such a delight to have as a co-worker."

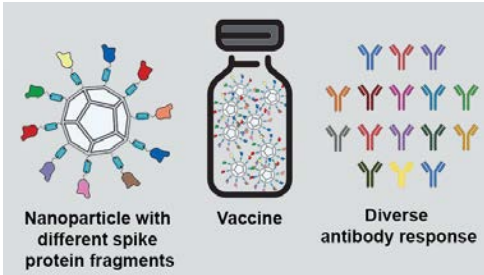
Always a people person, George especially enjoyed volunteering with the Combined Federal Campaign, a great cause that connected her with people across NIH. Working for OCPL and Collins also led her to meet and collaborate with many NIH'ers—as she researched images and sought talking points, data, historical tidbits and other information. "You get to appreciate the resources you have within OCPL," she said. "Everyone is amazing in our group."

Now, in retirement, George said her first order of business is cleaning out her closets. "It's a goal to find out what my house has in it," she said. She also looks forward to traveling more after Covid subsides.

Perhaps her greatest joy in retirement is the chance to spend lots more time with her children and her grandkids—Brayden, 3, and Savannah, 1—who call her "Oma," as well as play "PawMa" to her daughter's dog, Izzy.

"Jill was the always-smiling, ever-friendly face of the NIH Director's speeches team," said Rebecca Kolberg, chief, OCPL Presentations Branch. "She will be greatly missed not only by the NIH director and her co-workers, but by many people all across the NIH community."





"I didn't create anything from whole cloth," said George, "but rather re-envisioned things to offer the optimal context" for the Director's Blog. George illustrations include (from l) suggested summer reading for scientists, precision oncology gene changes predict immunotherapy response and nanoparticle tech holds promise against coronavirus strains.



The 2021 Nobel Prize in Physiology or Medicine was awarded jointly to Dr. David Julius (l) and Dr. Ardem Patapoutian (c). At right, Dr. David W.C. MacMillan shared this year's Nobel in chemistry with Dr. Benjamin List (below).

MACMILLAN PHOTO: PRINCETON UNIVERSITY, OFFICE OF COMMUNICATIONS, DENISE APPLEWHITE

MEDICINE, CHEMISTRY, ECONOMICS

NIH Grantees Awarded 2021 Nobels

The 2021 Nobel Prize in Physiology or Medicine was awarded jointly to two current NIH grantees Dr. David Julius and Dr. Ardem Patapoutian "for their discoveries of receptors for temperature and touch." The 2021 Nobel Prize in Chemistry was awarded jointly to Dr. Benjamin List and current NIH grantee Dr. David W.C. MacMillan "for the development of asymmetric organocatalysis."

Julius, professor and chair of the department of physiology and Morris Herzstein chair in molecular biology and medicine at the University of California, San Francisco, has received continuous NIH funding since 1990, primarily from NINDS and NIGMS.

Patapoutian, professor and Howard Hughes Medical Institute investigator in the department of neuroscience at Scripps Research, La Jolla, Calif., has received continuous funding since 2002, primarily from NINDS, NIDCR, and some funding recently from NHLBI.

MacMillan, the James S. McDonnell distinguished university professor of chemistry at Princeton University, has received continuous funding from NIGMS since 2000.

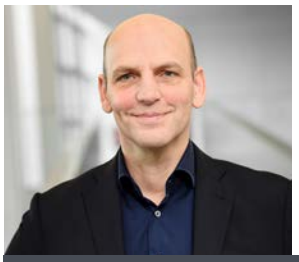
Although not a current grantee, List of the Max-Planck-Institut für Kohlenforschung is not unknown to NIH. He received one grant from NIGMS in 2002 (while at Scripps Research Institute).

"Our ability to sense heat, cold and touch is essential for survival and underpins our interaction with the world around us," said the Nobel Assembly at the Karolinska Institutet, announcing the award in physiology or medicine on Oct. 4. "In our daily lives we take these sensations for granted, but how are nerve impulses initiated so that temperature and pressure can be perceived? This question has been solved by this year's Nobel Prize laureates."

Julius used capsaicin, a pungent compound from chili peppers that induces a burning sensation, to identify a sensor in the nerve endings of the skin that responds to heat, the announcement explained. "Patapoutian used pressure-sensitive cells to discover a novel class of sensors that respond to mechanical stimuli in the skin and internal organs. These breakthrough discoveries launched intense research activities leading to a rapid increase in our understanding of how our nervous system senses heat, cold and mechanical stimuli.

"The laureates identified critical missing links in our understanding of the complex interplay between our senses and the environment."

In the chemistry prize announcement on Oct. 6, the Royal Swedish Academy of Sciences explained "researchers long believed that there were, in principle, just two types of catalysts available: metals and enzymes…[List and MacMillan] are awarded…because in 2000 they, independent of each other, developed a third type of catalysis. It is called asymmetric organocatalysis and builds upon small organic molecules."




2021 Nobelists List (l) and Dr. Joshua Angrist also have ties to NIH.

LIST PHOTO: FRANK VINKEN FÜR MPI FÜR KOHLENFORSCHUNG
ANGRIST PHOTO: MIT DEPARTMENT OF ECONOMICS

"This concept for catalysis is as simple as it is ingenious, and the fact is that many people have wondered why we didn't think of it earlier," said Dr. Johan Åqvist, chair of the Nobel committee for chemistry.

On Oct. 11, Dr. David Card was awarded half of the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel for "empirical contributions to labour economics"; the other half went jointly to Dr. Joshua Angrist and Dr. Guido Imbens "for their methodological contributions to the analysis of causal relationships."

A labor economist and professor of economics at the University of California, Berkley, Card has received funding from NIA and NICHD over the course of nearly three decades from 1995 to 2021. Angrist, a labor economist and the Ford professor of economics at Massachusetts Institute of Technology, received grants awarded by NICHD from 2004 to 2006.

Economics Nobel laureate Dr. David Card

PHOTO: BRITTANY HOSEA-SMALL

The Nobel announcement said, "This year's laureates…have provided us with new insights about the labour market and shown what conclusions about cause and effect can be drawn from natural experiments. Their approach has spread to other fields and revolutionised empirical research."

According to Dr. Peter Fredriksson, chair of the economic sciences prize committee, "Card's studies of core questions for society and Angrist and Imbens' methodological contributions have shown that natural experiments are a rich source of knowledge. Their research has substantially improved our ability to answer key causal questions, which has been of great benefit to society."

Dozens of NIH-supported scientists from around the world have received Nobel Prizes for their groundbreaking achievements in physiology or medicine; chemistry; physics; and economic sciences.

To date, 168 NIH-supported researchers have been sole or shared recipients of 99 Nobel Prizes. Among these are individuals who have served as NIH staff scientists.