

117th ACD Considers Wide Range of ‘Thorny Topics’

BY CARLA GARNETT

If the 117th meeting of the advisory committee to the NIH director (ACD) featured a theme, then it reinforced the core quest of the agency: What concrete actions can NIH take to promote biomedical research and how to protect that effort at home and abroad from threats, now and decades into the future? If those queries seem broad, complex and wide-ranging, then they precisely describe the ACD deliberations on Dec. 13 and 14.

“It’s been an intense 6 months since we last met,” said NIH director Dr. Francis Collins, in opening remarks. “Many of the



NIH director Dr. Francis Collins speaks at the recent ACD meeting.

major issues that we’ve been wrestling with are going to be discussed in the course of this meeting...I can’t recall an ACD meeting that had as many really important thorny topics, all on the agenda in a day and a half.”

More than a dozen items crammed the docket, not counting the traditional briefing Collins provided to begin the meeting that

included several topics from the headlines as well as overviews of NIH’s current and potential outlook regarding budget and legislation, in light of last fall’s election.

Leading off the first day were discussions on shielding research from undue influences by both international and domestic entities. The ACD heard a report from its working group on foreign influence on research integrity. Next they considered the follow-up steps NIH enacted in the wake of ending the Moderate Alcohol and Cardiovascular Health (MACH) trial after discovering improprieties in study design and implementation.

ACD member and working group cochair Dr. M. Roy Wilson walked the assembly through the former topic, outlining the scope of a problem that involves intramural as well as extramural intellectual property potentially targeted for misappropriation

SEE ACD MEETING, PAGE 6

Town Hall Meeting Clarifies New Anti-Harassment Effort

BY RICH MCMANUS

At a Dec. 7 town hall meeting in Masur Auditorium that offered an overview of NIH’s new anti-harassment plan, NIH director Dr. Francis Collins called the event “one of the most important conversations our community has ever had...Harassment of any kind goes against the very core of what NIH represents.

“We’re done worrying about whether this conversation is uncomfortable,” he continued. “Our priority is to deter



Dr. Hannah Valantine

SEE TOWN HALL, PAGE 4

UMBC President Advocates for Inclusive Excellence in Science

BY DANA TALESNIK

Getting through an advanced degree program in science is a bit like a long marriage:

It takes commitment, the resolve to work through complex problems and sometimes help from outside sources. In America, only about a third of all students who start college as science majors will graduate with a science degree. What will it take to inspire smart students to pursue science,



Dr. Freeman Hrabowski

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Santa visits and the CRC fills with music, p. 12.

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Webinar on Suicide Prevention, Jan. 24

The Office of Disease Prevention will hold a Methods: Mind the Gap webinar with Dr. Colin G. Walsh on suicide prevention enabled by data science. It will take place on Thursday, Jan. 24 at 1 p.m.



Dr. Colin G. Walsh

Walsh will present preventive strategies that integrate clinical data science, informatics and mental health expertise in an attempt to prevent suicidal thoughts and behaviors. He will explain basic concepts in applied predictive modeling and share examples of efforts in civilian and active-duty military environments.

Walsh is assistant professor of biomedical informatics, medicine and psychiatry at Vanderbilt University Medical Center and is a practicing internist. His research has been featured in *Newsweek*, *Wired*, *Quartz*, *NBC News*, *ACM Tech News*, *Reuters* and more.

Register for the webinar at <https://prevention.nih.gov/education-training/methods-mind-gap/suicide-prevention-enabled-data-science>.

Ioannidis To Give Gordon Lecture

Mar. 13

Dr. John Ioannidis will give the Robert S. Gordon, Jr. Lecture in Epidemiology titled “In Scientific Method We Don’t Just Trust: or Why Replication Has More Value Than Discovery,” on Mar. 13 at 3 p.m. in Masur Auditorium, Bldg. 10.



Dr. John Ioannidis

Ioannidis will explain the current challenges of balancing discovery and replication in science at large, describe different forms of replication and explain why reproducibility is important. He will present the strengths

and weaknesses of some proposed solutions for improving research practices towards making research more reproducible and useful.

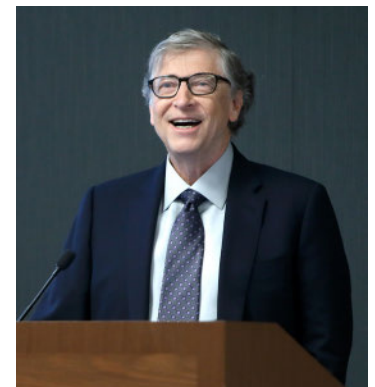
Ioannidis holds the C.F. Rehnberg chair in disease prevention at Stanford University and is professor of medicine, of health research and policy and of biomedical data science in the School of Medicine, as well as professor of statistics at the School of Humanities and Sciences and co-director of the Meta-Research Innovation Center. He is the leading researcher worldwide on meta-research,



Gates Visits NIH for Global Health Discussion

Philanthropist Bill Gates visited NIH Dec. 11 as part of the Bill & Melinda Gates Foundation-NIH fifth annual consultative workshop. He attended two vaccine panel sessions—one on universal influenza and the other on tuberculosis. Ten working groups also met during the day-long session to discuss collaboration in areas including HIV/AIDS; malaria and neglected tropical diseases; tuberculosis; maternal, neonatal and child health; and epidemic preparedness. Above, Gates (c) walks toward the meeting at the John Edward Porter Neuroscience Research Center with NIAID director Dr. Anthony Fauci (l) and NIH director Dr. Francis Collins. At right, Gates addresses the audience.

PHOTOS: CHIA-CHI CHARLIE CHANG



the systematic evaluation of research practices and how they can be optimized. Ioannidis’s current research at Stanford includes meta-research, large-scale evidence, population health sciences and predictive medicine and health.

The 2019 Gordon Lecture is part of the NIH Director’s Wednesday Afternoon Lecture Series. Though attendance is encouraged, the talk will also be available at <https://videocast.nih.gov/>. For more information, email prevention@mail.nih.gov.

Galea To Give NIMHD Seminar, Jan. 22

Dr. Sandro Galea will be the guest speaker for the NIMHD Director’s Seminar Series on Tuesday, Jan.



Dr. Sandro Galea

22 from 3 to 4:30 p.m. in Lipsett Amphitheater, Bldg. 10. The title of his talk is “Health, Not Healthcare: What We Need to Talk About When We Talk About Health.”

Galea, dean and Robert A. Knox professor at Boston University School of Public Health, is a renowned physician, epidemiologist and author. He has been named one of *Time* magazine’s epidemiology innovators and listed as one of the “World’s Most Influential Scientific Minds.” His latest book, *Healthier: Fifty Thoughts on the Foundations of Population Health*, has been called “the book everyone interested in health must read.”

A recipient of numerous awards and honors, Galea holds a medical degree from the University of Toronto and graduate degrees from Harvard University and Columbia University.

Sign language interpreters will be provided. Individuals with disabilities who need reasonable accommodation should call Edgar Dews at (301) 402-1366 or the Federal Relay at 1-800-877-8339.

CDC Fights Opioid Crisis, Infectious Disease Outbreaks

BY ERIC BOCK

The opioid epidemic is the most serious public health crisis of our time, said Dr. Robert Redfield, director of the Centers for Disease Control and Prevention.

“I have seen the pain this epidemic has caused in many, many lives,” Redfield said at the recent NIAID Kinyoun Lecture in Lipsett Amphitheater.

Since 2000, more than 600,000 people have died from a drug overdose, he added. Most involved opioids. Others were from cocaine and methamphetamine. Many of these drugs are now contaminated with fentanyl, a synthetic opioid that’s 50 to 100 times more potent than morphine. Redfield predicted synthetic opioids will only get more potent.

There is a stigma associated with drug addiction and with relapse after treatment. Stigma—“the enemy of public health”—prevents people from coming forward and admitting they have a problem. Addiction is a medical condition, not a moral failure, he said.

Under Redfield’s leadership, the CDC has invested in opioid overdose surveillance programs. Previously, the CDC received data from state and local health departments. Usually, that data was a year or two old. Now, the agency gets overdose data directly from state medical records within 48 hours. One of the hardest hit areas in the country is West Virginia.

“We can see where the drug overdoses are in real-time and that’s really important in trying to respond to the outbreak,” he explained. “The medical records themselves become the surveillance tool.”

The agency has also funded prescription drug monitoring programs to identify opioid prescription misuse and developed guidelines for prescribing opioids for chronic pain.



NIAID director Dr. Anthony Fauci greets Redfield at the lecture.

PHOTOS: ANDREW PROPP



Delivering the recent Kinyoun Lecture, CDC director Dr. Robert Redfield discusses topics of mutual concern for his agency and NIH.

“It is probably one of the most serious medical decisions we make when we prescribe opioids to a patient,” Redfield said. “We don’t have an understanding the way we should about the long-term potential consequences to that pain management system.”

He recalled when he was an AIDS researcher in the 1980s; scientists didn’t see a path to success. At first, they saw people dying in the prime of their

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“I have seen the pain this epidemic has caused in many, many lives.”

-DR. ROBERT REDFIELD

• • •

lives. But researchers followed the science. They learned about the life cycle of the virus, developed an arsenal of drugs to suppress it and slowed its spread with tools of prevention.

“HIV is a highly treatable disease where you can live a natural lifetime,” Redfield said. “I am confident that science will do the same for addiction.”

While the CDC battles the opioid epidemic, it must also confront an increasing number of infectious disease outbreaks in the country. Intravenous drug use can “have significant impact when it comes to transmitting infectious diseases such as HIV and hepatitis C.”

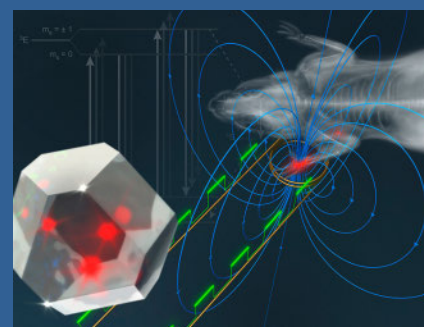
Over a 3-year period in Scott County, Indiana, more than 233 people who injected drugs were diagnosed with HIV. Redfield said there are 220

other counties “where injection drug use could lead to substantial infectious disease outbreaks.”

Many of the counties at risk for disease outbreaks are the same counties where opioid use is highest, he explained. These parts of the country are working with health professionals and law enforcement agencies to develop a community-wide response before an outbreak happens.

What frustrates Redfield is “science on the shelf,” meaning that, while safe and effective drugs are available today, they aren’t getting to the people who need them. Doctors can, for example, treat patients with hepatitis C. But while treatments are available, hepatitis C infections are on the rise, particularly among populations who inject drugs.

Redfield encouraged the audience to never give up on the power of science. “As we confront the epidemics of HIV, hepatitis C and opioids, we have to see the possible, use the power of science and lead the nation to act,” he concluded. **R**



ON THE COVER: Background-free imaging of magnetically modulated fluorescent nanodiamonds in the lymph node of a mouse.

IMAGE: KEIR NEUMAN, NHLBI

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Town Hall

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harassment...and to foster a culture of respect at all facilities and among all staff, including fellows, trainees and contractors.”

Quoting from a recent report on sexual and gender harassment of women written by the National Academies of Sciences, Engineering and Medicine (NASEM), Collins called such harassment “fundamentally a problem of culture...We need to redefine our NIH culture to say that such actions are unacceptable.”

NIH’s new approach to a problem that has roiled society in general over the past few years grew out of a meeting held in December 2017 by NIH’s women scientist advisors (WSA) committee, explained Dr. Kelly Ten Hagen, the NIDCR representative to the committee.

★ ★ ★

“Our overall goal is to ensure that human beings are treated like human beings, so that we can all achieve our potential in a harassment-free environment.”

—DR. KELLY TEN HAGEN

★ ★ ★

Although WSA was formed in 1993 to address the continuing problem of the underrepresentation of women in science, the meeting in late 2017 gave birth to a new entity at NIH: the anti-harassment steering committee, chaired by NIH principal deputy director Dr. Lawrence Tabak.

“Our overall goal is to ensure that human beings are treated like human beings,” said Ten Hagen, “so that we can all achieve our potential in a harassment-free environment. It’s got to be a community effort.”

To that end, all who work at NIH—employees, contractors, fellows, trainees—will be asked to take a harassment survey this month, so that the agency can assess its own workplace climate. The survey, developed with the oversight of Dr. Hannah Valentine, chief officer for scientific workforce diversity, is to be taken “whether you have been harassed or not,” said Tabak, who spoke to the crowd via phone; he had been called to a meeting downtown.

Tabak invited all to review the new

anti-harassment policy, located at <https://civilworkplace.nih.gov>.

Prior to the institution of this policy, NIH’ers with concerns about harassment of any kind typically took their issues to their own institutes and centers, said Julie Berko, director of the Office of Human Resources. However, “ICs are no longer managing these allegations,” she said. The NIH Civil Program has been bolstered and is now the first place anyone with a concern can seek help.



Panelists at the town hall meeting included (from l) Dr. Kelly Ten Hagen, Julie Berko and Dr. Carrie Wolinetz.

PHOTOS: CHIA-CHI CHARLIE CHANG

with victims or witnesses the outcome if a disciplinary action results from a report to the Civil Program. “All allegations are taken seriously and will be addressed appropriately,” she noted.

Berko then addressed the new Personal Relationship Policy Statement. “We do not want to be the relationship police,” but she emphasized that any personal relationship between employees in which one exerts career influence over the other must, from now on, be reported to the designated IC official, which is the executive officer in most cases.

Valentine urged a robust response to the Workplace Climate and Assessment Survey, which will be open for 8 weeks and will be confidential and de-identified. “We need a high response rate for meaningful data,” she said. The survey will be administered independently, not by NIH, and will include

The office has a hotline for anonymous reports (833-224-3829) and a new web-based intake form (<https://hr.nih.gov/working-nih/civil/intake-form>).

Berko cautioned that OHR cannot share



NIH director Dr. Francis Collins takes audience questions at the Dec. 6 town hall meeting, along with panelists (from l) Wolinetz, Valentine, Berko and Ten Hagen.

questions about general behaviors, not just sex or gender-related ones.

“I want to assure you, the results [of the survey] will not just sit on the shelf, as with some other surveys,” Valentine said. “This one is all about taking action to prevent sexual harassment...We need everybody’s voice, so we can effect change.”

Dr. Carrie Wolinetz, Collins’ acting chief of staff, noted that the NASEM report is now reverberating throughout science and medicine and is changing the culture. The report demonstrates that sexual harassment is “not just bad for women, but bad for science.”

Wolinetz announced the creation of a new working group on grantee institutions’ policies regarding harassment, which will report to the advisory committee to the NIH director.

“Culture change is a collective responsibility,” she said. “We need to ask ourselves, how can we each do better?”

A Q&A session took up the second half of the hour. Its dozen queries included several seeking clarity about managers’ reporting responsibilities (they are accountable for reporting allegations of harassment made to them by subordinates); the Civil Program as the first contact for all allegations of harassment, regardless of one’s employee/trainee/contractor status, if an issue arises (even in the rare case of a patient abusing a caregiver); and the deliberate inclusion of bullying as a form of inappropriate conduct in the new policy.

The final question of the meeting offered at least a brief chance for levity. Observing that the new Personal Relationship Policy Statement is confusing among the 27 ICs, NHLBI’s Dr. Cindy Dunbar, co-chair of the Assembly of Scientists at NIH, wondered about a rumor that trainee-trainee relationships are now being discouraged. “Is this true?”

“I do not think NIH wants to be in a space of basically implying that all romantic relationships are dangerous and should be stopped, right now,” said Collins, banging the table for comic emphasis. After clarifying that some relationships involving a power differential do carry risk, he concluded, “We are not trying to discourage relationships. We want people to have full and wonderful lives—as long as nobody gets hurt.” **R**

Langevin Takes Reins at NCCIH

Dr. Helene Langevin recently came on board as new director of the National Center for Complementary and Integrative Health.

She comes from the Osher Center for Integrative Medicine, jointly based at Brigham and Women’s Hospital and Harvard Medical School. She was director of the Osher Center and professor-in-residence of medicine at Harvard Medical School starting in 2012, and was a visiting professor of neurological sciences at the University of Vermont Larner College of Medicine. She was also a member of the NCCIH national advisory council, chairing, for example, its working group on training clinician-scientists in integrative medicine.

Langevin’s research interests have centered around the role of connective tissue in low-back pain and the mechanisms of acupuncture, manual and movement-based therapies. She has been the principal investigator on several NCCIH-funded studies. Recently, her work has focused on the effects of stretching on inflammation resolution mechanisms within connective tissue.

“I am thrilled to join the NCCIH team as we continue to explore important research avenues in the field of complementary and integrative health,” said Langevin. “I am eager to continue building on our research successes as we work to understand the usefulness, safety and roles of complementary and integrative health approaches in improving health and health care.”



NIH director Dr. Francis Collins welcomes new NCCIH director Dr. Helene Langevin.

PHOTO: MEGAN GOETZ

Langevin received her M.D. degree from McGill University, Montreal. She completed her post-doctoral research fellowship in neurochemistry at the MRC neurochemical pharmacology unit in Cambridge, England, and a residency in internal medicine and fellowship in endocrinology and metabolism at Johns Hopkins Hospital. **R**



Eliminating Stigma Through Art

NIDA’s eliminating stigma team recently opened the first installment of their art project. The art, on loan from Art10Baltimore artists, will grace the walls of the Biomedical Research Center in Baltimore until mid-January. Project co-leader Carla Harrison said, “One of the simplest and yet most profound ways of addressing the stigma commonly associated with mental illness and substance use disorders is to have an aesthetically pleasing environment that honors the work of our participants, visitors and employees.” Acting scientific director Dr. Amy Newman added, “I love the idea of intermingling science with art—we can inspire each other. Indeed, we all strive, in our own ways, to give hope to those who suffer from addiction. There is beauty in the world worth living to see.” Shown above are (from l) Dr. Michelle Jobes, Dr. Karran Philips, Claudia Cameron, Myrna Poirier, Jackie Mintz, Shelley Amsel, Harrison, Lauren Brick, Lois Schuster, Janette Lebron, Toni Berger, Newman and Dr. Stephen Heishman.

PHOTO: THOMAS WYNN

ACD Meeting

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by organizations outside the United States. Failure of visiting scientists to report financial conflicts and establishing so-called “shadow labs” that illegally copy U.S. resources are just two types of undue influence that have been documented by recent federal investigations.

After taking a look at his own institution (Wayne State University), Wilson said he found warning flags of a similar threat within the research community there. He cautioned ACD members and NIH leaders to be vigilant about protecting the scientific enterprise from those who would take advantage of its culture of open information-sharing for their own personal gain.

“The main message is that it’s real,” Wilson said. “There are significant breaches that are occurring at our universities...At the same time, when you look at the large number of investigators that are funded by the U.S. government in one way or another, [the problems account for] a relatively small amount. However it’s enough that it’s just not a random occurrence here and there. It seems to be more systematic and in some cases concentrated at certain institutions. It certainly warrants concern and a response.”

Commenting on the challenges this sensitive topic raises, Collins emphasized, “The vast majority of foreign nationals make incredibly important contributions to American science and very few of those individuals have violated NIH systems and processes. As we talk about potential solutions for the instances that have not gone the way they should have, let’s also be sure that we’re moving to protect the incredible value we have in access to talent from all over the world.”

On lessons learned and new standards NIH adopted following the MACH trial shutdown, NIH principal deputy director Dr. Lawrence Tabak talked about the NIH-wide systematic review underway of collaborations with private industry and non-profit organizations. He reiterated the need for a hyper awareness of possible conflicts—and even perception of such—involving potential funding partners. Both overt and negligent harm can occur in research collaborations, and both can tarnish an institution’s reputation and public trust, he said.



NIH principal deputy director Dr. Lawrence Tabak (second from r) addresses the ACD.

PHOTOS: CHIA-CHI CHARLIE CHANG

“No matter how seemingly small [in terms of dollars] the partnerships are, the reputational risk [of deliberate or unintentional missteps] is really costly,” Tabak said. “By insisting on public transparency, by insisting on disclosure early and often and by insisting that institute and center directors take personal responsibility for these things, I think we could have prevented what we experienced [with MACH].”

In the afternoon session, the ACD heard updates on NIH efforts to accelerate research to stem the nation’s opioid crisis and recommendations from the NextGen working group on ways to grow science as a career by encouraging early-stage investigators.

“From a philosophical point, the emphasis now is pivoting from the research project or scientific outcome to the person,” said ACD member and NextGen working group cochair Dr. Jose Florez of Massachusetts General Hospital. “We’re emphasizing a person-based view, that we really care about what happens to that person so that the workforce is sustained long-term...It’s a bet not only on a specific body of science—which is

important—but also it’s a bet on somebody who’s going to produce not just within that one body of science but also within a career, in a lifetime of many more bodies of science.”

NIH recently updated its policies to address and prevent sexual harassment and to change the culture of science to maximize talent. Tabak, NIH chief officer for scientific workforce diversity Dr. Hannah Valentine and NIH associate director for science policy Dr. Carrie

Wolinetz gave insight into understanding the current climate at NIH and opportunities to eliminate any vestiges of harassment going forward.

The final topic of the day continued in the vein of promoting science with a report from the high-risk, high-reward ACD working group.

On day 2, the ACD discussed establishment of an artificial intelligence working group, a report on INCLUDE (INvestigation of Co-occurring conditions across the Lifespan to Understand Down syndrome) and the current status of the BRAIN Initiative, which is already deep into its next phase, dubbed “BRAIN 2.0.”

“Overall, when we looked at what has happened with the BRAIN Initiative from 2014 to 2018, we were extremely impressed,” said Dr. Catherine Dulac of Harvard University. She cochairs the multidisciplinary working group for BRAIN 2.0 that comprehensively assessed progress so far on the ambitious project. “We’re extremely impressed by how faithful, well-crafted and strategic the execution was in terms of the original vision...in an extremely short timeframe. As a result we think the current state of the initiative has not only fulfilled the initial 5-year plan but also in many cases actually surpassed expectations.”

View both days’ deliberations online at <https://videocast.nih.gov/summary.asp?Live=29075&bhcp=1> and <https://videocast.nih.gov/summary.asp?Live=29079&bhcp=1>. Reports and other meeting documents are posted at <https://acd.od.nih.gov/meetings.html>. The ACD meets next in June. **R**



Dr. Catherine Dulac of Harvard gives a report on BRAIN 2.0.



Four illustrations show the progress of yellow fever in *Observations sur la fièvre jaune, faites à Cadix, en 1819*, Etienne Pariset and André Mazet, Paris, 1820. The NLM exhibit on yellow fever starts Jan. 11, the birthday of Alexander Hamilton.

COURTESY: NLM

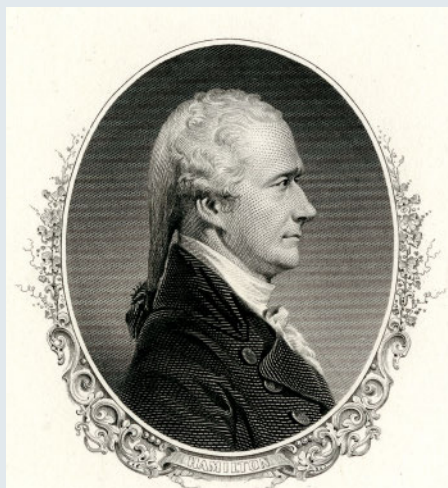
NLM Exhibit on Yellow Fever Debuts

BY KATHRYN MCKAY

The year was 1793.

The place was Philadelphia, which was at that time the nation's capital. The city was thriving. And so was a dangerous disease called yellow fever.

Secretary of the Treasury Alexander Hamilton would get it. As would the prominent physician and founding father Benjamin Rush. George Washington didn't get it. He fled the city.



Engraved portrait of Alexander Hamilton, undated

COURTESY: BUREAU OF ENGRAVING AND PRINTING

Many of the people who were most instrumental in caring for the afflicted and burying the dead in Philadelphia were African Americans.

At the same time Americans have rediscovered Hamilton through a bestselling autobiography and a hit musical, another mosquito-borne illness—Zika—has emerged as a public health crisis. The story of the 1793 yellow fever epidemic in Philadelphia needs retelling. And who better to tell it than the National Library of Medicine?

On Hamilton's birthday Jan. 11, NLM debuted "The Politics of Yellow Fever in Alexander Hamilton's America," with a website and a display in the History of Medicine reading room.

The exhibit explores how the medical community helped shape the response to the 1793 epidemic in Philadelphia, which killed 15 percent of the population.

Yellow fever causes a high fever, black vomit (a result of bleeding in the

stomach) and jaundice (a yellowing of the skin and how the disease gets its name).

When the disease arrived in Philadelphia in 1793, the country faced its first major public health crisis.

But that didn't stop prominent people gathered in Philadelphia from trying to treat the disease and save lives—and from arguing.

"Benjamin Rush, the most prominent physician of the day, published widely on the epidemic," said Dr. Ashley Bowen, a guest curator in the exhibition program at NLM. "Rush's new experimental treatment is bleeding and purging. He thought that bloodletting would lessen your capacity to have yellow fever."

Rush used high doses of mercury to purge his patients.

Hamilton, a prominent political figure, took another approach. "He followed what was called the 'bark and wine cure,' sometimes called the gentle cure or the West Indian treatment. That was quinine bark, which won't help with yellow fever, although it does help with malaria, so I can understand why they made those connections, and diluted Madera wine," said Bowen. "On balance, the treatment plan that Hamilton subscribed to was probably better if for no other reason than that you're not losing blood and ingesting toxic amounts of mercury."

Needless to say, neither treatment was effective.

In 1793, arguments about what caused this epidemic were played out in the public through lengthy newspaper stories.

Both men looked to the wharf as the source of the problem. "Rush points to local causes. He identifies a shipment of rotten coffee beans abandoned at the wharf as the source," said Bowen. "Hamilton thought the disease was imported by white French refugees fleeing the Haitian revolution in the Caribbean." The irony isn't lost on Bowen that Hamilton was himself an immigrant from the Caribbean.

"Hamilton wants to limit immigration and institute a quarantine, which would have impacted commerce," said Bowen. "Rush supports cleaning the city."

To find out what happens next, visit NLM's History of Medicine Division. The onsite display includes historical documents on yellow fever dating from 1793 until U.S. Army Maj. Walter Reed's confirmation of the mosquito theory of transmission, originally hypothesized by Cuban physician Carlos Juan Finlay. Dozens of artifacts help tell the story. As does a visit to <https://www.nlm.nih.gov/exhibition/politicsofyellowfever/index.html>.

Hrabowski

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technology, engineering and math (STEM) and stick with it for the long haul?

Boosting the number of STEM graduates, including historically underrepresented minority populations, will require a change in culture, said Dr. Freeman Hrabowski III, president, University of Maryland-Baltimore County (UMBC). The mathematician and African-American advocate spoke at an NIMH Director's Innovation Speaker Series lecture recently in the Neuroscience Center.

UMBC was a little-known commuter school when Hrabowski took the helm in 1992. In 2018, the university made sports history when it beat a top-ranked team in the NCAA men's basketball tournament. "I was talking for at least a year about how we were the national cyber champions [to apathetic crowds]; then 2 hours of basketball and we became the darlings of America," quipped Hrabowski.

Perhaps a lesser-known victory is UMBC's climb, with Hrabowski's guidance, to become one of the most innovative universities in the country, a model for undergraduate teaching, inclusion and STEM success. In fact, UMBC now produces more African Americans who go on to earn M.D.-Ph.D.s than any other institution in the country.

"We got to this point now where we know for a fact we can produce students of all races who can go on to excel and be excited about science," said Hrabowski.

Some 50 years ago, this feat seemed unimaginable, he said, recollecting the inadequate resources and shoddy textbooks he had in school. "Imagine the psychological effect on children who know they're so undervalued that they only get books from the school system after white children had finished with them," he said. Back then, only the privileged seemed



At NIH recently, Hrabowski discusses ways to boost STEM graduates.

destined for college.

In 1965, only 10 percent of Americans graduated from college, including 11 percent of whites and 3 percent of blacks. Today, slightly more than 30 percent of American

adults have bachelor's degrees, including about 20 percent of blacks. There's been great progress, said Hrabowski, but we have a long way to go.

"People of color—blacks, Hispanics, Native Americans—are terribly underrepresented," he said. There's an appallingly low percentage of Americans in general who have degrees in natural sciences or engineering, he added, and it's even lower for minorities. "In 2018, there's not one national agency in America that can tell me even 1 percent of the scientists are black."

So how do we continue producing future generations of innovators from all backgrounds? It starts with changing culture and attitudes.

"We have to get away from the kind of approach that's more cutthroat, [where] the first year of science is weed-out courses," said Hrabowski. "Yes, we need rigor in academic standards, but you also need to talk about high levels of support.

"I would even argue, if I can be

provocative, that it's immoral to admit students in science to our institutions if they don't have a reasonable chance of succeeding in science," said Hrabowski. "The most stunning of all counterintuitive points is this: the higher the SATs, the larger the number of AP credits in science, the more prestigious the university the person attends, often the greater the probability the student will leave science in the first 2 years."

Hrabowski has long touted four pillars of college success in science: high expectations for students, faculty, universities and national agencies; fostering a supportive community; researchers producing researchers by getting students into labs; and rigorous evaluation.

UMBC is busy putting these pillars into action, redesigning courses to make the teaching and learning process more engaging and fostering faculty-student connections.

"It's great when we have faculty who care deeply about undergrad and grad students," Hrabowski said, nodding to his colleague Dr. Jason Schiffman, a UMBC professor who works on mental illness research, "who will go with me into the residence halls and pull students into the work...When students see faculty as caring role models, they become excited about the possibilities for themselves."

Hrabowski cited such programs as the Meyerhoff Scholars Program, created 30 years ago at UMBC, and HHMI [Howard Hughes Medical Institute] that offer resources to foster diversity among future STEM leaders. UMBC also recently started a program to help transition more postdocs of color into faculty positions.

"I challenge NIH to learn from the HHMI approach and partner with places that have shown demonstrated and inclusive excellence," he said, encouraging leadership to create incentives and focus resources toward increasing minority representation in science.

"I challenge you, as I did [when I first spoke here] 10 years ago...to set some goals to take this to the next level." With brainpower, creativity and staunch commitment, it can be done, Hrabowski said.

"I would argue as a proud American: We are better than this and we know we can do better than this for all kinds of people." **B**



"[In high school] I had a tutor... and that really got me interested in science and learning," said NEI postbac Olanike Awotunde, a recent UMBC graduate in biochemistry and Meyerhoff scholar, during the Q&A. "I want to attest to the fact that support at an early stage really goes a long way."

PHOTOS: ANDREW PROPP

Recruitment Effort Targets Virginia Colleges, Universities

In an effort to support NIH's goal to attract high-performing candidates and to promote an inclusive and diverse workforce, the NIAID Office of Workforce Effectiveness and Resources (OWER) employment outreach team coordinated a number of outreach events throughout 2018. In a collaborative effort within the NIH inclusive recruitment initiative subcommittee led by the NIH Office of Human Resources corporate recruitment unit, NIAID was able to partner with the Office of Research Facilities (ORF) last fall for a 5-day Virginia College Road Trip Tour. The trip included a visit to seven central and northeastern Virginia colleges and universities.

The purpose was to provide outreach to students, including those from underrepresented backgrounds, by providing an overview of NIH and the many career opportunities available here. During discussions with students, the NIH ambassadors found that few were aware that NIH is a U.S. federal agency responsible for broad biomedical and public health research. Many participants were also unaware that NIH has a research hospital—the Clinical Center.

The tour included the University of Richmond, Virginia Commonwealth University, Virginia State University, Norfolk State University, Old Dominion University, Christopher Newport University, Hampton University and the College of William and Mary.

Overall, the outreach road trip was successful. Each institution had well-qualified students who showed an interest in NIH and NIAID programs. The college tour served as an opportunity for the NIAID team to re-connect with existing partnerships as well as to establish new collaborations. Highlights included meeting more than 150 STEM and non-STEM students interested in applying to NIH training programs, in addition to forming new connections and collaborations between VCU and ORF.

If your department or branch would like to partner with OWER or ORF, contact Frances Garcia at garciazquezf@nih.gov.



The OWER team included (from l) Judy Wongsam, JR Smith, Renetta Washington and Frances Garcia.



Four NIH'ers are new fellows of the American Association for the Advancement of Science. They are (from l) Dr. Robert Angerer, Dr. Andreas Baxevanis, Dr. Mary Dasso and Dr. Judith Richmond Walter.

AAAS Honors Four NIH'ers

Four NIH scientists are among 416 newly elected fellows of the American Association for the Advancement of Science. They were recognized for their extraordinary achievements in advancing science.

From the section on biological sciences: Dr. Andreas Baxevanis, deputy scientific director, NHGRI; Dr. Mary Dasso, head of the section on cell cycle regulation, NICHD.

From the section on dentistry and oral health sciences: Dr. Robert Angerer, scientific director, NIDCR.

From the section on neuroscience: Dr. Judith Richmond Walters, senior investigator in the neurophysiological pharmacology section, NINDS.

The fellows will be recognized at the 2019 AAAS annual meeting in Washington, D.C. During a fellows forum on Feb. 16, they will be presented with an official certificate and the AAAS fellows' gold and blue rosette pin, the colors of which represent the fields of science and engineering, respectively.

AAAS's annual tradition of recognizing leading scientists as fellows dates to 1874. Since then, AAAS has honored distinguished scientists such as astronomer Maria Mitchell, elected a fellow in 1875; inventor Thomas Edison (1878); chemist Linus Pauling (1939); and computer scientist Grace Hopper (1963).

Four of the 2018 Nobel Prize laureates—James Allison, Arthur Ashkin, Frances Arnold and George Smith—are AAAS fellows. [R](#)



NIGMS Hosts B-CC High School Students

On Dec. 6, NIGMS hosted a group of students from Bethesda-Chevy Chase High School who were visiting NIH as part of the school's career day. Above, Seth Dickey (r), a fellow in the Postdoctoral Research Associate Training Program, gives the students a lab tour that included a discussion of research and career paths. As part of the event, the National Library of Medicine's Tara Mowery and Krista Stracka led the students on a tour of NLM, providing overviews of NIH, the library and its History of Medicine Division.

PHOTO: ABHIGNYA SUBEDI

NIH-Developed Test Detects Protein Associated with Alzheimer's, CTE

An ultrasensitive test has been developed that detects a corrupted protein associated with Alzheimer's disease and chronic traumatic encephalopathy (CTE), a condition found in athletes, military veterans and others with a history of repetitive brain trauma. This advance could lead to early diagnosis of these conditions and open new research into how they originate, according to NIH scientists and their colleagues.

In their new study, published in *Acta Neuropathologica*, the researchers explain how they adapted a diagnostic test originally developed for prion diseases to detect abnormal clusters of tau protein. Like other proteins involved in neurological diseases, tau protein clusters can seed themselves and contribute substantially to the disease processes of Alzheimer's and CTE. The study involved brain samples from 16 Alzheimer's patients, 2 boxers with CTE and numerous control cases involving other brain diseases.

The test is extremely sensitive. For example, if a pinhead-sized sample of brain tissue from an Alzheimer's patient were pulverized and diluted into a thousand gallons of liquid, the test still could detect tau seeds in a pinhead-sized volume of that dilution. The test is called AD RT-QuIC: Alzheimer's disease real-time quaking induced conversion.

Scientists at NIAID developed RT-QuIC about a decade ago to detect Creutzfeldt-Jakob (CJD) and other prion diseases. Since then, they have repeatedly improved and adapted it to detect other neurological diseases such as Parkinson's and dementia with Lewy bodies. The test, which already is used in clinical settings to diagnose sporadic CJD, is noted for its rapid and accurate results.



A first-time mother's risk of pelvic floor disorders is strongly associated with how her baby is delivered, according to an NIH-funded study.

IMAGE: IZUSEK/ISTOCK

Pelvic Floor Disorders Linked to Mode of Delivery Among First-Time Moms

A first-time mother's risk of pelvic floor disorders is strongly associated with how her baby is delivered, according to a study funded by NIH. Pelvic floor disorders are thought to result from weakening or injury of the muscles, ligaments and connective tissue in the lowest part of the pelvis. The study, funded by NICHD, was led by Dr. Victoria Handa of Johns Hopkins Bayview Medical Center and appears in the *Journal of the American Medical Association*.

Researchers enrolled more than 1,500 women into the study after their first birth; 778 of the women delivered by cesarean, 565 by spontaneous vaginal

delivery and 185 by operative vaginal birth (delivery assisted by forceps or other devices to extract the fetus). After up to 9 years of observation, researchers found that women who delivered by cesarean were at approximately half the risk of developing stress urinary incontinence (incontinence resulting after a cough, sneeze or other activity) and overactive bladder, compared to women who had a spontaneous vaginal birth.



Risk screening could help address the rising rate of youth suicide in the U.S., where more than 6,000 youth died by suicide in 2016.

IMAGE: FATCAMERA/ISTOCK

New Guidance for Universal Suicide Risk Screening in Health Care Settings

A new report, authored in part by researchers at NIMH, provides guidance on how to implement universal suicide risk screening of youth in medical settings. The report describes a way for hospitals to address the rising suicide rate in a way that is flexible and mindful of limited resources.

In 2016 alone, more than 6,000 youth in the United States under the age of 25 died by suicide, according to the Centers for Disease Control and Prevention. Studies have found that a majority of youth who died by suicide visited a health care provider or medical setting in the month prior to killing themselves. The interactions of these youth with the health care system make medical settings an ideal place for positioning suicide intervention efforts.

"Suicide is a major public health concern and early detection is a critical prevention strategy," said NIMH director Dr. Joshua Gordon. "Part of NIMH's suicide prevention research portfolio focuses primarily on testing and implementing effective strategies for identifying individuals at risk of suicide. Results from these research efforts are poised to make a real difference and help save lives."

In 2007, The Joint Commission (TJC) released a National Patient Safety Goal requiring that all behavioral health patients who present to psychiatric and general hospitals be screened for suicide risk. However, upon examining their data, they discovered that over a quarter of hospital suicides occur on non-behavioral health units, and at-risk patients were passing through emergency departments, inpatient medical units and outpatient clinics undetected. This realization led TJC, in 2016, to recommend that all patients presenting to medical settings be screened for suicide risk.

While good practice, universal screening can present a strain on the resources of hospitals and other health care facilities. The report, published in *Psychosomatics*, presents a new three-tiered clinical pathway system as a flexible and resource-conscious way to implement universal suicide risk screening within pediatric health care settings.



Dr. Karyl Swartz

CSR Associate Director Swartz Retires to Ohio

BY PAULA T. WHITACRE

Dr. Karyl Swartz grew up in Wooster, Ohio, where she returned after her recent retirement from the Center for Scientific Review. She attributes her varied career to “different paths that opened at just the right time.” One common thread was her commitment to advancing her own research while working to involve more underrepresented minorities and women in biomedical and behavioral sciences.

“Karyl came to CSR [in 2011] as director of the Division of AIDS, Behavioral and Population Sciences,” said Dr. Richard Nakamura, former CSR director. “But from my perspective, her major mission was to help the underserved within the health arena.”

Swartz led CSR’s Early Career Reviewer (ECR) program. ECR has developed more than 3,000 qualified scientists without NIH review experience to participate in CSR study sections. “It helps people enter the review process, learn about it and become more able to write successful grant applications to NIH,” she said. “It was very gratifying to be part of it.” Preliminary data show high female and underrepresented minority participation, and that the program does promote careers.

“Karyl’s interest in supporting minorities and women in science made her an excellent match for guiding the ECR program,” said Dr. Noni Byrnes, CSR acting director. “And her enthusiasm certainly contributed to its success.”

Swartz entered the College of Wooster in her home town with a plan to work with people with developmental disabilities. The college is known for its undergraduate independent study program, which exposed her to research.

“Once I entered graduate school, there was a shift in my interests,” she said. “Rather than the educational aspect, I realized I wanted to study cognitive processes in animal models, especially monkeys.” Her interest in behavior, such as mother-infant attachment interactions, led her to study more basic behavioral processes, she explained. She earned her Ph.D. in psychology at Brown University.

Swartz taught and ran a lab at Lehman College of the City University of New York for 25 years. In addition, “Lehman gave me an opportunity to pursue my interest in diversity and promoting underrepresented scientists,” she said, noting that the Bronx college has a large underrepresented minority enrollment. She directed several NIH-funded programs to support minority students and faculty in science, including the NIMH Minority Research Infrastructure Support program and the NIGMS Minority Biomedical Research Support program.

At Lehman and while a scientist with the Great Ape Trust of Iowa from 2004 to 2011, Swartz became a research associate at the Smithsonian National Zoo in Washington. She spent 13 years studying memory organization in orangutans.

“One of the great aspects about working with great apes is that they are not just data, they are individuals. You get to know them and they know you,” she said. Although the research ended when she came to NIH, part of her leave-taking from the Washington area included visiting the orangutans, especially a favorite named Bonnie.

Swartz returned to Wooster with her two large Leonberger dogs. “I’ve come home and it’s a good fit,” she said. After becoming re-acquainted with her home and college town, she plans to do community work and possibly return to primate research in some way.



Rodgers Awarded for Leading Fight Against Kidney Disease

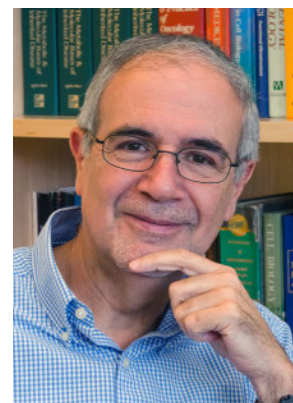
Dr. Griffin Rodgers (r), director of the National Institute of Diabetes and Digestive and Kidney Diseases, received the President’s Medal from the American Society of Nephrology during the ASN Kidney Week meeting in San Diego recently. ASN president Dr. Mark D. Okusa presented Rodgers with the award—the society’s highest civilian honor—for leading the fight against kidney disease by advancing research, educating health professionals, sharing new knowledge and working for high-quality medical care.

PHOTO: AMERICAN SOCIETY OF NEPHROLOGY

Bonifacino Honored as ASCB Fellow

NICHD’s Dr. Juan S. Bonifacino, head of the section on intracellular protein trafficking, was

honored as an American Society for Cell Biology (ASCB) fellow at a meeting on Dec. 8. ASCB fellows are nominated by their peers in recognition of their contributions to cell biology and to the community of cell biologists. Bonifacino’s laboratory investigates how proteins are delivered to different intracellular compartments and the diseases that result from dysfunction of these mechanisms. **R**





At left, Santa Claus, a.k.a. Montgomery County Police Officer Robert “Bobby” Ladany, greets children and families after rolling up in front of the inn on a Harley-Davidson, escorted by 30 motor officer elves. At right, Montgomery County Police Officer M. Hoffman poses with inn resident Cooper, 11, an NCI patient.

Children’s Inn families like Beth (I), her sister, Caroline, 14, an NIAMS patient, and their mom, Stephanie, enjoy posing for a photo with Santa and Mrs. Claus, a.k.a. Jackie Ladany, at the holiday party following the 2018 Santa Ride.

PHOTOS: DEBBIE ACCAME, JEN FORESTER

Holidays Feature Music in CRC Atrium, Santa Visit to Inn

The atrium of the Clinical Research Center commonly hosts musical performances, but never so frequently as the holidays. The period Dec. 6-19 saw six events presented in the towering space for the enjoyment of patients, staff and visitors. Giving free concerts were the NIH Chamber Singers, vocalist Aaron Reeder, the National Symphony Orchestra’s Horn Ensemble “Horns-a-Plenty,” NIH Nerds in Harmony, the Public Health Service Ensemble Chorus and the University of Maryland Jazz Quartet.

On Dec. 12, Santa paid a call on the Children’s Inn at NIH. Thirty Montgomery County Police Department motorcycle officers escorted Santa on his visit. The entourage from the North Pole appeared in photos with the children, did face-painting, created ornaments and shopped for gifts at the inn’s Gingerbread Gift Shop, which was stocked with toys and gifts provided by caring donors.

“It was fun, and the officers were so kind,” said Bella, 10, of Florida.

During the visit, most children asked Santa for toys, phones, books or cosmetics. But Cruz, 9, of California, who has a rare, genetic autoimmune disorder, had a more pressing wish. “I wish I didn’t have this disease,” he said.



At left in the CRC atrium, vocalist Aaron Reeder sings for the season. At right, the NSO horn ensemble “Horns-a-Plenty” also performed during December.



Above (from I): An inn resident paints the face of Montgomery County Police Officer J.R. Howard at the inn holiday party. The Public Health Service Ensemble Chorus and the University of Maryland Jazz Quartet perform in the CRC. Below (from I): The NIH Chamber Singers and NIH Nerds in Harmony give free concerts at the CRC; Montgomery County Police Lt. David McBain chats with Children’s Inn resident and NIAID patient Lucy, 10.

