

RALL LECTURE

Fleming Discusses Healing Powers of Music

BY MOHOR SENGUPTA

The debate over whether music is a product of cultural invention, like writing, or of biological evolution, like speech, has divided scientists and other thinkers since Darwin's time. Everyone must have experienced the mood-uplifting and optimism-inducing effects of music at some point in their lives, but few of us know of the extraordinary healing powers that music can have on diseases and disabilities.

To explore these powers, NIH invited renowned opera singer and Grammy and National Medal of Arts winner Renée



NIH director Dr. Francis Collins sings a duet with Renée Fleming at this year's J. Edward Rall Cultural Lecture.

Fleming to give the annual J. Edward Rall Cultural Lecture on May 13. As a musician and participant in NIH research on the relationship of music to brain activity, Fleming shared her perspectives on how music influences well-being.

The "Sound Health: Music and the Mind" initiative, a partnership of the John F. Kennedy Center for the Performing Arts and NIH, in association with the National Endowment for the Arts, was born during a fortuitous meeting of Fleming and NIH director Dr. Francis Collins at a dinner party in 2015. At the time, Fleming had just begun serving as artistic advisor

to the Kennedy Center. Familiar with the underpinnings of mind-body connection, she subsequently proposed the idea of studying the interaction of music and neuroscience to Collins, who enthusiastically

SEE FLEMING, PAGE 4



Ready to walk & roll. Participants head out on 5K course for Minority Health Month. See p. 12.

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Eric Dishman speaks at 'All of Us' anniversary.

NEAR BOUNDLESS POTENTIAL Improving Inclusion, Data Access for 'All of Us'

BY DANA TALESNIK

It began as an ambitious idea: create a program to collect and analyze health data on a massive scale, ultimately enrolling a diverse group of 1 million U.S. volunteers in what would be the biggest national research cohort of its kind. There would be hurdles, of

SEE ALL OF US, PAGE 8



NIH director Dr. Francis Collins takes BTWD selfie with his wife Diane Baker and daughter Dr. Margaret Collins.

CYCLE TIME NIH'ers Celebrate Bike to Work Day

BY DANA TALESNIK

It was a gorgeous morning for a bike ride. Under sunny skies, hundreds of NIH'ers pedaled to work for NIH's annual Bike to Work Day on May 17. For many, the event helps kickstart their bike commuting season.

"This is my kickoff event; then I bike to

SEE BIKE, PAGE 6

Safety, Health & Wellness Day, June 26

NIH Safety, Health and Wellness Day will be held Wednesday, June 26, rain or shine, at the Clinical Center south complex from 10:30 a.m. to 1:30 p.m. Everyone is welcome to come and enjoy the activities and learn about safety, health and wellness opportunities at NIH. The Office of Research Services, Office of Research Facilities, NIH occupational safety and health committee and the laboratory sustainability group are combining efforts to increase workplace health awareness and promotion. The National Institute on Aging is cosponsor of the event.

The focus this year is to enhance employee nutrition, wellness, physical fitness, safety awareness and prevent or reduce work-related injuries and illnesses. A wide range of activities and exhibits will be presented including health screenings, safety and health promotion exhibits, nutrition demonstrations and tastings, physical fitness activities and NIH IC exhibits.

Plan to stay for lunch and choose from menu items prepared by food trucks or shop for a variety of fresh foods at the farmer's market. For more information, visit <http://go.usa.gov/xXnfe>.

Individuals who need reasonable accommodation to participate should contact Linda Kiefer at (301) 402-8180 and/or the Federal Relay at 877-709-5798.

Cashion Discusses Patient Care at St. Jude

Nursing science is rooted in answering research questions that arise from caring for patients. This fact makes it fitting that the keynote speaker at this year's St. Jude Children's Research Hospital's Patient Care Services Symposium was NINR acting director and scientific director Dr. Ann Cashion. During her recent presentation, "Nursing Science: Harnessing Innovation for Patient Care," she discussed NINR-supported scientific advances.

With the audience of nurses, physicians and other health care professionals, Cashion shared research on patient care, including work on measuring and treating symptoms in congenital diseases, advances in self-management strategies for adolescents and caregiving for children with chronic conditions, among others.

She also spoke about genomics, omics and nurse scientists, and NINR and NIH initiatives such as All of Us and the Palliative Care: Conversations Matter campaign. The research and initiatives she discussed demonstrate the pivotal part nurse scientists play in research discoveries that enhance patient care.

Looking toward the future, Cashion stated that "to maintain and expand their roles as leaders in the research community, nurse scientists must keep pace with the latest techniques, initiatives and innovations in science."



Workshop Addresses Maternal Mortality

NICHD director Dr. Diana Bianchi (seated, c) and NICHD scientific director Dr. Constantine Stratakis (seated to her left), along with CDC Division of Reproductive Health director Dr. Wanda Barfield (seated to Bianchi's right) join NICHD scientists, program officials and grantees for a workshop to map the future research agenda to address maternal mortality in the United States.

NIA's Hill Honored by Morehouse

Dr. Carl V. Hill, director of the Office of Special Populations at the National Institute on Aging, has received the 2019 Morehouse School of Medicine Distinguished Alumnus Award. As a member of the inaugural class of the master of public health program at Morehouse, he was honored to receive the award.



Dr. Carl V. Hill

"I'm humbled to be recognized by Morehouse School of Medicine in Atlanta, a champion institution for social justice, health equity and diversity in public health," he said. "This is an honor that I cherish greatly."

At NIA, Hill works to support and strengthen efforts to stimulate health disparities research related to aging. He was instrumental in spearheading the development of the NIA Health Disparities Research Framework, which showcases priorities and investments in areas of research relevant to health disparities and aging. Using the framework as a guide, NIA has distributed more than \$100 million in research awards since 2015 to explore the environmental, sociocultural, behavioral and biological determinants of health disparities related to aging. Hill also directs the popular NIA Butler-Williams Scholars Program for early-career investigators with interests in aging research.



At the opioid crisis meeting were (onstage, from l) Dr. Elinore McCance-Katz, assistant secretary for mental health and substance use, SAMHSA; Dr. Douglas Throckmorton, FDA deputy director for regulatory programs; NINDS director Dr. Walter Koroshetz; NIDA deputy director Dr. Wilson Compton; Dr. Anne Schuchat, CDC principal deputy director; and moderator Dr. Malika Fair, senior director of health equity partnerships and programs, AAMC.

Panel Discusses Opioid Crisis

In an effort to bring together leaders and champions involved in addiction training and pain management, the Association of American Medical Colleges (AAMC) hosted a national workshop on combating the opioid crisis May 9-10 at National Harbor, Md.

NIDA deputy director Dr. Wilson Compton and representatives from SAMHSA, NINDS, CDC and FDA discussed the state of the epidemic and what each of their agencies is doing to address different challenges within the opioid crisis.

Topics included NIH's HEAL Initiative, FDA's emphasis on improved packaging of opioids and the importance of ensuring that the science in this area is implemented by clinicians as much as possible.

New Fellowships Bring African Scientists to Train at NIH

BY SHANA POTASH

Last year, Dr. Idowu Aimola was teaching biochemistry at the largest university in Nigeria. Genomic research is rare there, he said, and applying data science to that research isn't even mentioned in the curriculum. Today, he's learning those skills in the lab of NIH director Dr. Francis Collins.

Aimola is one of 10 researchers participating in a new program called the African Postdoctoral Training Initiative (APTI). Fellows will spend 2 years in the lab of an NIH senior investigator, learning cutting-edge science while working on a research project of mutual interest. The immersion is intended to give the fellows the expertise to become research leaders when they return home and to foster collaborations between NIH scientists and institutions in Africa.

"I feel extremely fortunate. It's a huge deal to me," said Aimola, who has a Ph.D. in biochemistry and previously spent 9 months training in the U.S. through a Fulbright program. Working in Collins' lab, Aimola will be engaged in high-tech single-cell biology. His project will try to understand why some people are predisposed to diabetes and he'll use the techniques he's learning to investigate how insulin-secreting cells in the pancreas are affected by genetic risk factors.

Aimola is familiarizing himself with statistical methods, single-cell library preparation and the software and algorithm tools to analyze genomic data, which he didn't know existed before this experience. "It brings a huge opportunity to open up the minds of my students and research community back home and improve collaborative capacity with the NHGRI," he said.

Senior investigators with seven institutes are hosting the fellows in the inaugural cohort. With diabetes a growing problem in Africa, it's also the focus of a fellow who is working with NIDDK to explore nutritional causes of the disease. Four NIAID investigators have paired with African scientists who are studying the role of *Staphylococcus aureus* bacterium in wound healing, Lassa fever and other emerging viruses, malaria in pregnancy and multidrug-resistant malaria.

A fellow training with NHLBI will look at malaria and its relationship with another common ailment in Africa, sickle cell disease. NCI is hosting a scientist investigating childhood lymphoma. A fellow with NINR aims to focus on epigenetic research. And an NIEHS senior scientist is mentoring a



NIH director Dr. Francis Collins is hosting Dr. Idowu Aimola of Nigeria, one of 10 fellows training with senior investigators as part of a new program, the African Postdoctoral Training Initiative.

PHOTO: CHIA-CHI CHARLIE CHANG

fellow who wants to develop skills in molecular epidemiology.

The program's goal is to harness and nurture promising research talent in the world's fastest growing region. Because we are all descended from Africans, there is much to be learned from studying genetic variation across the continent and many research questions to be answered, Collins explained. "If what we want to do now is tackle some of the toughest problems that are going to need real teams to make it happen, we're better off if those teams are populated by all kinds of smart people with different perspectives—and that often means from different countries."

The APTI fellows—who hail from Egypt, Ethiopia, Ghana, Kenya, Mali and Nigeria—have spent the past few months settling into their new roles at NIH and to life in the U.S. The fellows established a WhatsApp group to keep in touch and Aimola says some of them went to see the cherry blossoms together.

During an event to welcome the fellows to campus, NHGRI's Dr. Charles Rotimi—who was born in Nigeria and earned his undergraduate degree there—described his own journey to NIH and offered advice. "You are going to meet a lot of very bright people. Pick their brains," he said. "The people you meet along the way are really going to define your career, if you take it quite seriously."

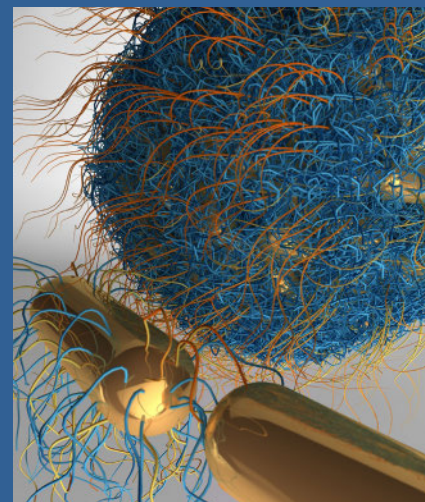
The 4-year APTI program is a partnership of NIH, the Bill & Melinda Gates Foundation and the African Academy of Sciences and is managed by the Fogarty International Center. After 2 years at NIH, the fellows will return to their home institutions and receive 2 years of funding to help them continue their research and make the transition to becoming independent investigators. The program is intended to deter brain drain and build research capacity at African institutions.

"It is imperative to strengthen African scientific leadership to advance health and development goals on the continent," said Dr. Trevor Mundel

of the Gates Foundation. "Training from NIH, one of the world's foremost biomedical research institutions, will help these scientists develop the transformational solutions the world and their communities urgently need."

There are plans for a second cohort of fellows, with recruitment expected in 2020.

"Many of the things we're excited about now, whether it's the BRAIN Initiative or coming up with better treatments for cancer, are international efforts," Collins said. "But Africa really hasn't been at the table for most of those and this is an opportunity to change that." **R**



ON THE COVER: A nanovesicle assembled from individual gold nanorods. The beard has a polymer coating on the surface of the vesicle.

IMAGE: SHAWN CHEN, NIBIB

The NIH Record

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Fleming

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embraced the idea.

The Sound Health initiative kicked off in January 2017 with a workshop including musicians and scientists at NIH. An NIH-wide working group on music and the brain was formed, and after careful deliberation of the research opportunities, announced the availability of \$5 million in additional funding to explore the neuroscience of music.

Fleming discussed the positive effects of music on psychology, child development, brain activity and aging, while providing examples of research in these areas.

Her presentation started with the introduction of the bone flute, the earliest musical instrument, invented 40,000 years ago. Fleming believes that music predates speech and has been entwined with human life in every civilization and culture. The fact that the human auditory cortex has a separate area for interpreting musical tones (a “music room”) is consistent with longstanding benefits of music in human evolution.

Studies have shown that exposure to music and rhythm from an early age helps children develop language, reading and comprehension skills, memory and focus, compared to a control group with no exposure to music. The observations align with visible differences in neurological structures in the two groups. “Researcher Kenneth Elpus, right here at the University of Maryland, has shown statistically that music and arts programs enhance creativity, reduce dropout rates and lead to higher achievement,” Fleming said.

Music helps humans connect and bond

★ ★ ★

“Music and arts programs enhance creativity, reduce dropout rates and lead to higher achievement.”

-RENÉE FLEMING

★ ★ ★

with one another. It strengthens communities, as we typically see during social gatherings such as weddings and political rallies. “Music impacts brain circuits involved in empathy, trust and cooperation,” Fleming said as she introduced the audience to an experiment by Dr. Laurel Trainor that demonstrated rhythm-induced cooperative behavior in infants.

Cerebral activities such as singing, speaking or even processing musical notes profoundly affect brain activity. Fleming recalled her time inside an MRI scanner at NIH in April 2017, when she volunteered for a study under the Sound Health initiative to find out how her brain fired differently while she sang, spoke or imagined singing. It was imagining singing that inspired the greatest brain activity—perhaps because it was such an unfamiliar behavior for this internationally known singer.

In a remarkable experiment by Dr. Charles Limb, jazz pianist Matthew Whitaker’s visual cortex became highly active under the MRI scanner while he was improvising jazz on a special metal-free keyboard that could be safely included in



Collins and Fleming visit Dr. John Tisdale and Claire Drysdale, a postbaccalaureate fellow in Tisdale’s laboratory.

the MRI room. Whitaker was born blind and therefore his visual cortex had little to do with seeing. “This shows our brain’s remarkable plasticity, its ability to rewire itself,” Fleming said.

Use of music to soothe weary souls has been in practice from Plato’s time, some two millennia ago, to modern times, where it is



“Music impacts brain circuits involved in empathy, trust and cooperation,” Fleming said.

PHOTOS: CHIA-CHI CHARLIE CHANG



Fleming greets employees at reception.

applied to comfort war veterans living with PTSD and injury. Fleming noted that “music memory is often the last to go in adults with dementia,” signifying the cohesion music brings to a brain in progressive disintegration.

Forrest Allen, who suffered a horrendous traumatic brain injury after a snowboarding accident, was never going to speak again, according to his doctors. When the prospect of his recovery looked bleak, an innovative music therapist was called in. The audience watched enthralled as Allen, completely recovered today, and now a student at George Mason University, spoke to the camera saying, “Music got me here.”

In an age of loneliness where everybody is connected by the internet but nonetheless suffers a mass disconnect socially, Fleming feels that we are fortunate to have more than 100,000 performing arts organizations in the U.S. “The arts humanize us and bind us to each other and our children,” she said in closing remarks.

After the talk, Collins and Fleming engaged in a Q&A session, where Fleming talked about growing up in a family of musicians, grappling with stage fright as a performer and how she has to work hard to control her emotions when singing in settings of mourning, as in a performance for families of 9/11 victims or at the recent funeral of Sen. John McCain.

The two also talked about how music therapy is likely to enter mainstream disease management and hoped that it would be covered by medical insurance in the future.

The lecture ended with their duet rendition of Leonard Cohen’s anthem *Hallelujah*, followed by the 1864 hymn *How Can I Keep From Singing*. You can watch those musical contributions at <https://www.youtube.com/watch?v=RpuQ65ESq4c>. **R**

Farrar To Give Barmes Lecture, June 19

Dr. Jeremy Farrar, director of the Wellcome Trust, will deliver the 2019 David E. Barmes Global Health Lecture. His talk, “Global Health in a Changing World,” will be presented Wednesday, June 19 at 2 p.m. in Masur Auditorium, Bldg. 10.



Dr. Jeremy Farrar

PHOTO: WELLCOME TRUST

A world-renowned clinical scientist and leading figure in the field of infectious disease, Farrar has led the Wellcome Trust since 2013. Wellcome is an independent foundation with a \$33 billion investment portfolio that offers grants across biomedical science, population health, medical innovation, humanities and social science and public engagement. It supports the work of more than 14,000 researchers in about 100 countries.

Previously, Farrar was director of the Oxford University clinical research unit in Vietnam, which is supported by Wellcome. His research interests were infectious diseases, tropical health and emerging infections.

Farrar recently received the 2019 Jimmy and Rosalynn Carter Humanitarian Award from the National Foundation for Infectious Diseases. He was named 12th in *Fortune*’s list of the World’s 50 Greatest Leaders in 2015. His other honors include the Order of the British Empire in 2005 for services to tropical medicine, as well as the Memorial Medal and the Ho Chi Minh City Medal by the government of Vietnam. He is a fellow of both the Academy of Medical Sciences and the Royal Society.

Vietnam. He is a fellow of both the Academy of Medical Sciences and the Royal Society.

The lecture is sponsored by NIDCR and the Fogarty International Center. It honors the late Dr. David Edward Barmes, who was a special expert for international health with NIDCR.

The lecture will be videocast. For more information, visit <http://bit.ly/Barmes2019>.

NCI’s Wolin Gives WALs Talk, June 26

NCI senior investigator Dr. Sandra Wolin, chief of the RNA Biology Laboratory (in Frederick), will deliver the annual NIH Director’s Lecture (third of three) on “Autoantigens and Autoimmunity: A Bedside to Bench and Back Again Story,” on Wednesday, June 26 at 3 p.m. in Masur Auditorium, Bldg. 10.

Wolin’s research examines how noncoding RNAs function, how cells recognize and degrade defective RNAs and how failure to degrade these RNAs affects cell function and contributes to human disease. A major focus of her laboratory is on an abundant class of ribonucleoproteins (RNPs), called Ro60 RNPs, which are widespread in animal cells and also present in some bacteria.

Ro60 RNPs were discovered because the major protein, the Ro 60 kDa autoantigen (Ro60), is a clinically important target of autoantibodies in patients with systemic lupus erythematosus. Wolin’s lab discovered that Ro60 is ring-shaped and binds misfolded noncoding RNAs. They also showed that noncoding RNAs called Y RNAs tether Ro60 to other proteins and regulate its activity. They discovered that a bacterial Ro60 and a ring-shaped nuclease form a previously unknown RNA degradation machine.

Recently, their discovery of Ro60-containing bacteria resulted in a new hypothesis for how the autoantibodies that are hallmarks of diseases such as systemic lupus erythematosus originate.

Wolin received her A.B. in biochemical sciences from Princeton University, her M.D. from Yale School of Medicine and her Ph.D. from the department of biochemistry and biophysics at Yale. Prior to coming to NIH in 2017, she was director of the Yale Center for RNA Science and Medicine, and before that she was a tenured professor at Yale, in the department of cell biology and molecular biophysics and biochemistry. She is a fellow of the American Association for the Advancement of Science and of the American Academy of Microbiology.

The lecture is part of the NIH Director’s Wednesday Afternoon Lecture Series. To watch online, visit <https://videocast.nih.gov/>. Registration is not required; seating is on a first-come, first-served basis. Individuals who need reasonable accommodation to participate should email WAL.Soffice@od.nih.gov or call (301) 594-6747 or the Federal Relay, 800-877-8339.

TWO TALKS



Dr. Sandra Wolin



At left, Cpl. Christine Fedorisko, a detective with NIH's criminal investigations division, records the serial number to register a bike. Dr. Prashant Chittiboyna (c) of NINDS's Surgical Neurology Branch rides in on his electric cargo bike with his kids. At right, a cyclist wearing a 2009 shirt holds up the 2019 BTWD shirt.

Bike

CONTINUED FROM PAGE 1

work twice a week till winter," said NIAID biologist Catherine Rehm, who biked 18.5 miles from Gaithersburg. "It's a great way to start the day. I feel relaxed, happy, ready to go, and I think I'm more productive [after biking in]."

Rehm's NIAID colleague France Galindo

and shaded; you see all kinds of wildlife and you get amazing views of the river."

NIH director Dr. Francis Collins had a less scenic view on his ride, which would normally traverse the Georgetown Branch Trail, now closed due to Purple Line construction.

"It's not as scenic as it used to be, but it's still great exercise and on a beautiful day,

what we do here at NIH. We work hard, we play hard and we try to keep our bodies in shape, and this is what biking to work is all about."

Bike to Work Day is also a time to pay tribute to NIH cycling proponents gone too soon. Collins remembered former labmate and cycling enthusiast Peter Chines, who passed away 2 years ago. And every year, the

"I'm a strong advocate for bicycle commuting and encourage my colleagues to give it a try."

-DR. IAN FINGERMAN

also launched her bike-to-work season that day. Galindo, who typically bikes once a week from Capitol Hill, reminisced, while sipping coffee from the refreshments tent, about the beauty of biking in along the Capital Crescent Trail.

"In the early morning," she said, "it's quiet

what could be better?" said Collins, who biked from Silver Spring with his wife, Diane Baker, and daughter Dr. Margaret Collins, who was visiting from North Carolina.

Collins said he had an early-morning opioid crisis meeting that prevented him from lingering at the event, adding, "That's



NCI's Steve Friedman (l) presents NCI colleague Dr. Ian Fingerman with the Carl Henn Bicycle Advocacy Award.



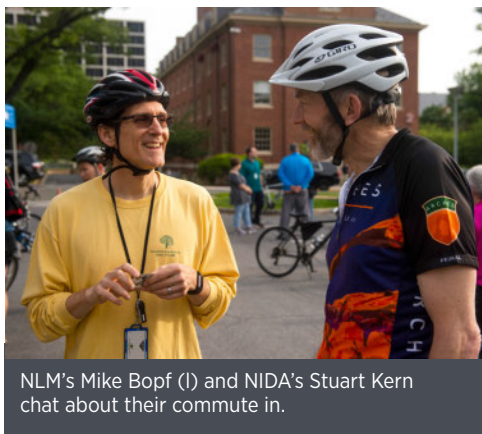
Collins (l) talks about the scenic views he appreciates when he bikes to work. At right, Mike Harris (l), a technician with Silver Cycles in Silver Spring, does some maintenance on an NIH'er's bike.

PHOTOS: LISA HELFERT

NIH biking community honors Carl Henn, who co-founded NIH's Bicycle Commuter Club (NIHBCC), by presenting a namesake award to an avid cyclist/advocate.

This year's Carl Henn Bicycle Advocacy Award was presented to NCI's Dr. Ian Fingerman, who bikes from Old Town Alexandria, Va., to campus most workdays, then rides the shuttle to NCI-Shady Grove. A few times a month, he bikes the entire way, 28 miles, from Old Town to Shady Grove.

"I'm a strong advocate for bicycle commuting and encourage my colleagues to give



NLM's Mike Bopf (l) and NIDA's Stuart Kern chat about their commute in.

it a try," said Fingerman. "I commute by bike as much as I reasonably can. The only thing that keeps me off my bike is torrential rain."

Steve Friedman, NCI Surveillance Research Program manager, who nominated Fingerman, said, "Ian's dedication to biking every day in all weather conditions for such distances is advocacy in action. He inspires others by showing that perceived obstacles to bike commuting can be overcome."

This year, 566 NIH cyclists pre-registered for Bike to Work Day, the highest registration in 5 years. Many cyclists stopped by the maintenance tents where local bike shop staff inspected their bikes. NIH Police were also on hand to register them.

The average commute to NIH that day was 6 miles, according to Sean Cullinane, quality assurance specialist with the Office of Research Services' Division of Amenities and Transportation Services (DATS).

CSR's Dr. David Winter wishes his commute was longer. "It's 7 1/2 miles, but I try to make it 10," said Winter, who bikes in 2-3 days a week from Silver Spring and typically puts 1,000 miles a year on his bike.

The longest bike commute to campus was 27 miles. In total, bikers who attended prevented more than a metric ton of carbon dioxide from entering the atmosphere.

"Don't make [biking to work] a one-day thing," Collins advised the assembled cyclists. "Make this something you do as often as you can."

NIH's Bike to Work Day is co-sponsored by DATS and NIHBC. The event is part of an area-wide tradition with 117 pit stops in the DMV sponsored by the Washington Area Bicyclist Association.

To register your bike with the NIH Police, email alvin.maker@nih.gov. **R**

Fordham Scholars Visit for Ethics Training

BY NANCY L. JONES

Dr. Celia Fisher, director of the National Institute on Drug Abuse-supported HIV and Drug Abuse Prevention Research Ethics Training Institute (RETI) at Fordham University, brought four early-stage investigators to the National Institute on Minority Health and Health Disparities recently. Each of the scholars presented their bioethics research on a minority health and health disparities research topic and met individually with program officers. Several of the scholars examined their bioethical questions using NIMHD-supported research projects. The exchange was to provide NIMHD staff with examples of current applications of bio-ethical investigations on minority health and health disparities research and offer the investigators insights into how to successfully navigate NIH and NIMHD.

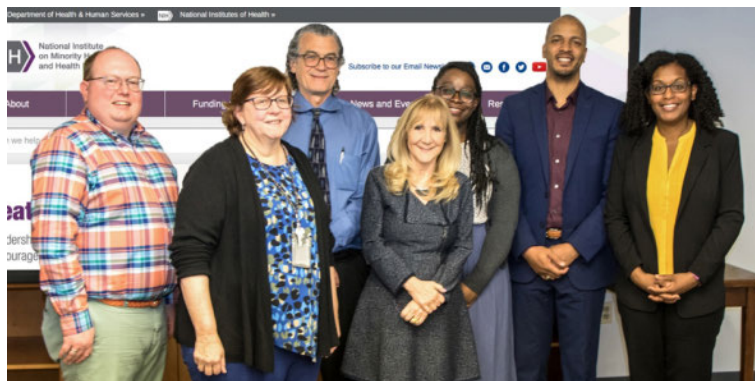
Dr. Anthony Estreet, associate professor at Morgan State University, shared his work in examining barriers and motivators to research participation among young black men who have sex with men (MSM) HIV-positive substance users. Estreet is investigating the intersection of research mistrust, perceived personal and group benefits of participation and the fair versus coercive influence of monetary and medical incentives on research participation among young black MSM.

Dr. Randy Hubach, assistant professor at Oklahoma State University, discussed his project, which details the barriers to and preferences for MSM participating in research studies that use electronic devices for the collection, storage and maintenance of data.

Dr. Stacy Ryan, assistant professor of psychology at Baylor University, discussed her study exploring youth in the justice system and their willingness to participate in substance use treatment research that measures drug use and related problematic behaviors when protocols include any disclosure of information to probation.

Aaliyah Gray, doctoral candidate at Fordham, presented her study exploring the associations among sexual identity, social and systemic factors and sexual risk factors among black lesbian, gay and bisexual women (BLGB). The findings suggest family, community and individual health care providers can play a positive role in sexual identity, and in turn, lead to greater sexual self-efficacy among BLGB having sex with men.

Fisher closed the session with a discussion of best practices for minority health and health disparities research in light of big data combining genomic, social and behavioral data and the new human subject protection rules allowing broad consent. **R**



Meeting attendees included (from l) Dr. Randy Hubach, Dr. Nancy Jones, NIMHD director Dr. Eliseo Pérez-Stable, Dr. Celia Fisher, Aaliyah Gray, Dr. Anthony Estreet and Dr. Stacy Ryan.

PHOTO: EDGAR DEWS

Take the 2019 FEVS Survey

The 2019 Federal Employee Viewpoint Survey (FEVS) will remain open until Monday, July 1. This is your opportunity to provide input on a variety of topics within your organization, including work experience, leadership, diversity and inclusion. NIH values your feedback and uses the survey results to make positive changes throughout the organization.

The Office of Personnel Management sends an email invitation with a unique link to all eligible NIH employees (full- and part-time permanent, non-seasonal employees, on board on or before Oct. 27, 2018). The survey takes 20-25 minutes to complete and responses are confidential.

In 2018, NIH reached its highest participation rate to date with 62.2 percent of all federal employees completing the survey (5.1 percentage points higher than 2017). This year, NIH hopes to sustain its increasing participation rate to ensure even more employees' voices are heard.

For questions about FEVS, visit <https://hr.nih.gov/fevs> or contact the Office of Human Resources at NIHFEVS@nih.gov.



Addressing the All of Us anniversary event are (from l) NIDA director Dr. Nora Volkow, cohort participant Ana Pavón and NHLBI director Dr. Gary Gibbons.

PHOTOS: MARLEEN VAN DEN NESTE

All of Us

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course, and there are kinks yet to be tackled. At times, the effort almost seemed elusive.

Now, one year after the launch of the All of Us Research Program, there is already much to celebrate. So far, more than 190,000 people from all 50 states have enrolled in the program, many of whom come from

participant,” said Collins. “Our attitude here is very different.”

From the outset, All of Us was determined to make participant data understandable, secure and accessible early to help accelerate research into individualized prevention and treatment, said program director Eric Dishman. Now, anyone can peruse basic participant data—information from electronic health records, physical measure-

health disparities,” said Collins.

Dr. Robert Winn, director, University of Illinois Cancer Center, is encouraged by the impact All of Us can have on African Americans and other minorities. “Representation matters,” he said. “This program matters because it’s [engaging previously disenfranchised] people...and giving them hope that this will help not only them, but also help their communities and their kids.”

Ana Pavón, an immigrant from Mexico, became motivated to join All of Us after a long medical journey toward finding a diagnosis for her young son.

“I hope one day, [thanks to precision medicine], other parents will have a much easier experience,” she said. “I know to do this we must be included in research. Our population is different; our health needs are different.”

All of Us will enable researchers to study conditions that disproportionately affect specific populations. And, as program

“It’s crucial to have multiple generations come back again and again to contribute their data to this larger good.”

-NHLBI DIRECTOR DR. GARY GIBBONS

communities historically underrepresented in biomedical research.

“In just one year, and even though only part way to the enrollment goal, All of Us has managed to become one of the largest, most diverse research resources in history,” said NIH director Dr. Francis Collins at the anniversary symposium on May 6, in a crowded Masur Auditorium, with thousands more watching online.

That day, All of Us released the beta version of its interactive Data Browser at researchallofus.org, which provides a first glimpse of health conditions, demographics and other summary statistics from its growing database. Anyone can access the site. Investigators might find its aggregate data particularly useful for shaping current and future research directions.

“Most research programs of this scale don’t release data until several years after they’ve completed enrollment of the last

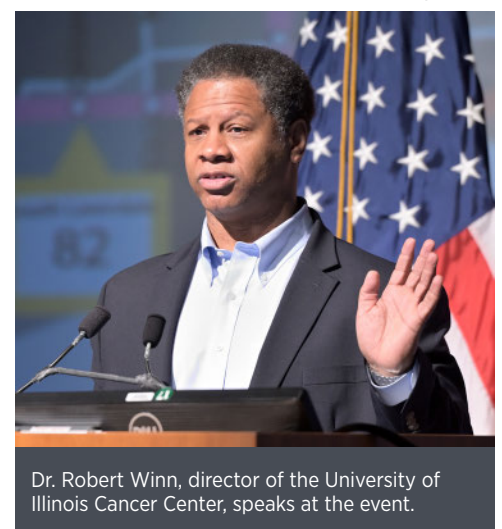
ments, survey responses—all de-identified to protect participants’ privacy.

“Our tools are pretty [basic at this stage], but we’re working on them and testing them,” Dishman said. “Over time, the experience will keep getting better.”

Another priority for All of Us is recruiting the broadest possible participant base. Of the more than 140,000 participants who have completed all initial steps of the protocol, 50 percent are racial and ethnic minorities.

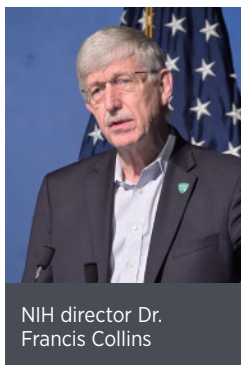
Understandably, some communities may have questions or concerns about enrolling, having been marginalized or mistreated in earlier health studies. To assuage their concerns and gain their trust, All of Us staff host discussions and focus groups with minority communities, said Dishman, operating under the philosophy that a diversity of participants can generate a diversity of cures.

“All of Us makes a profound commitment to understand and chip away at those vexing



Dr. Robert Winn, director of the University of Illinois Cancer Center, speaks at the event.

enrollment grows, so does the promise of finding new diagnostics and treatments for diseases that affect a large percentage of all Americans such as diabetes, cancer, cardiovascular disease and dementia.



NIH director Dr. Francis Collins

“The potential for All of Us is almost boundless,” said Collins.

Having such a large participant cohort may soon deliver more effective treatments for pain, the condition that tops the list of All of Us respondents thus far. Chronic pain afflicts more than 50 million Americans and has helped fuel the opioid epidemic in this country.

“We have to [delve] into large cohorts and populations,” to understand the genetic factors contributing to chronic pain and drug addiction, said NIDA director Dr. Nora Volkow. “All of Us matters because it actually addresses diseases for which all of us are vulnerable.”

By studying diseases at this large scale, with the benefit of hundreds of thousands of whole genomes, we can learn more about the genetic variants underlying coronary and pulmonary diseases, said NHLBI director Dr. Gary Gibbons. He said precision medicine can potentially predict, prevent and treat these conditions before they become life-threatening emergencies.

“It’s crucial to have multiple generations come back again and again to contribute their data to this larger good,” he said.

What’s most needed now is feedback to keep improving the participant portal and Research Hub, said Dishman. Later this year, All of Us plans to launch a Researcher Workbench with more data and analytic tools. The program also is working to add more data types, from genomics to wearables data.

“All of Us is on a journey where the data sets will continue to grow, and the tools will become more refined,” said Collins. “We invite you to join us early as participants and as researchers, not only so you can begin using the data for discoveries, but also so you can give input and feedback, and help us design the best research platform and data set to help us accelerate research.” **R**

ORWH Hosts 4th Pinn Symposium

The NIH Office of Research on Women’s Health hosted the 4th annual Vivian W. Pinn Symposium on May 15 as part of the observation of the 20th anniversary of National Women’s Health Week. This year’s topic, “Improving Maternal Health: Behind the Numbers,” addressed the lasting medical complications that can result from pregnancy as well as U.S. maternal morbidity and mortality rates, which are the highest among peer nations.

Leading clinicians and researchers discussed relevant statistics, research and federal programs and described approaches to improving women’s health before, during and after pregnancy and throughout a woman’s life.

Dr. Vivian Pinn, the first full-time

director of ORWH, introduced the symposium and Dr. Lisa Hollier, president of the American College of Obstetricians and Gynecologists, delivered the keynote address. Lamenting the increasing problem of maternal mortality in the United States, Hollier said, “We have the most exceptional infrastructure. We have a strong commitment to research. We have some of the most brilliant minds in the world, and yet we fail our mothers.”



Symposium participants include (from l) ORWH deputy director Elizabeth Spencer; former ORWH director Dr. Vivian Pinn; president of the American College of Obstetricians and Gynecologists Dr. Lisa Hollier; ORWH director Dr. Janine Clayton; and ORWH associate director for science policy, planning and analysis Dr. Samia Noursi.

PHOTOS: CHIA-CHI CHARLIE CHANG



Dr. Joia Adele Crear-Perry, president of the National Birth Equity Collaborative, and Dr. Michael Lu of George Washington University participate in a panel discussion.

Following the keynote, ORWH associate director for science policy, planning and analysis Dr. Samia Noursi characterized further some of the troubling statistics surrounding U.S. maternal morbidity and mortality.

A panel discussion, “Framing a Research Agenda to Advance Maternal Health Equity: From Bedside to Curbside,” featured Dr. Jacquelyn Campbell of Johns Hopkins University School of Nursing; Dr. Joia Adele Crear-Perry, president of the National Birth Equity Collaborative; Dr. Michael Lu of George Washington University; and Hollier.

Several federal health professionals then shared updates on maternal health activities from throughout HHS, including

Sarah Foster of the Centers for Disease Control and Prevention; Dr. Lynne P. Yao of the Food and Drug Administration; Dr. Michael D. Warren of the Health Resources and Services Administration; Dr. Sung Sug Yoon of the National Institute of Nursing Research; and Megan Mitchell of the National Heart, Lung, and Blood Institute.

ORWH director Dr. Janine Clayton and Stacey D. Stewart, president of the March of Dimes, concluded the event.—**Eric Sarlin**

Tucci Named Next NIDCD Director

Dr. Debara L. Tucci has been chosen new director of the National Institute on Deafness and Other Communication Disorders. She is currently professor of surgery and director of the cochlear implant program in the division of head and neck surgery & communication sciences at Duke University. She is expected to join NIH on Sept. 3.



Dr. Debara L. Tucci

“Dr. Tucci’s rich experience melds basic and clinical research in communication disorders with an impressive clinical and surgical practice in otology and neurotology,” said NIH director Dr. Francis Collins, who made the appointment. “This experience, combined with her leadership roles for numerous scientific and professional organizations, as well as serving previously as an advisor at NIH, makes her ideally suited to lead the NIDCD into the future.”

Tucci will oversee NIDCD’s annual budget of approximately \$459 million and lead the institute’s research and training programs in hearing, balance, taste, smell, voice, speech and language. Discoveries in these areas can have a dramatic impact on the lives of the tens of millions of people with deafness and other communication disorders.

Since 1993, Tucci has been on the faculty of Duke University Medical Center, where she co-founded the Duke Hearing Center. She has received continuous NIH funding since beginning her academic career. Her primary research interests focus on addressing barriers to hearing health care for older adults, starting with the primary care setting, and establishing a network of academic

and community-based research sites to conduct clinical research in hearing and balance disorders. Tucci also leads NIDCD grants to train and mentor the next generation of clinician investigators in otolaryngology and communication sciences.

While at NIH, she will continue her work to address hearing loss as a global public health problem in her role as co-chair of the *Lancet* Commission on Global Hearing Loss.

Tucci is the recipient of the Distinguished Service Award from the American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS). She has served on the AAO-HNS research advisory board, board of directors, executive committee and numerous subcommittees. She has served as president of the Association for Research in Otolaryngology, the American Otological Society and the American Neurotology Society, and is active in numerous other professional societies.

“I want to extend my appreciation and gratitude to Dr. Judith Cooper for her commitment and leadership in serving as the NIDCD acting director after the retirement of long-time director Dr. James F. Battey, Jr., last May,” said Collins. “She has agreed to continue to serve in a leadership role as the NIDCD deputy director.”

Five NIH’ers Honored by AAI

The American Association of Immunologists recently announced the inaugural class of distinguished fellows, which includes five scientists from NIH. The recognition honors active, long-term AAI members who have demonstrated “significant research accomplishments and exceptional leadership” in the field of immunology.

Dr. Richard Hodes is director of the National Institute on Aging and head of the immune regulation section of the Experimental Immunology Branch in the National Cancer Institute.

Dr. Anthony Fauci is director of the National Institute of Allergy and Infectious Diseases.

Dr. Ronald Germain is NIH distinguished investigator, chief of NIAID’s Laboratory of Immune System

Biology and its lymphocyte biology section and director, Center for Advanced Tissue Imaging.

Dr. Susan Pierce is chief of NIAID’s Laboratory of Immunogenetics.

Dr. Ethan Shevach is chief of the cellular immunology section in NIAID’s Laboratory of Immune System Biology.

Election as a distinguished fellow will occur annually and is among the highest honors bestowed by AAI.

CSR’s Freund Retires

BY PAULA WHITACRE

Dr. Robert Freund recently retired as chief of the AIDS and related research (AARR) integrated review group. His career divides roughly in two—the first half in research and teaching at Harvard and the University of Maryland and the second half at the Center for Scientific Review.

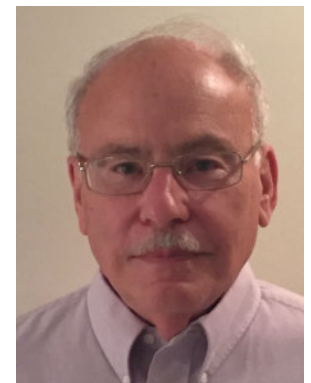
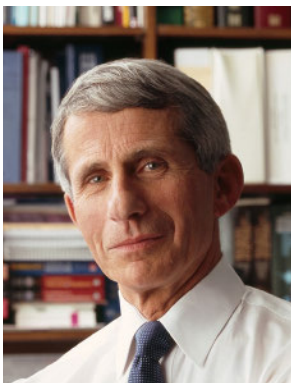
“I’ve learned a lot everywhere I have worked,” he said. “At Harvard, Maryland, CSR, people have taught me so much.”

His inclination to learn extends to sharing his own knowledge and experience with others. “A lot of his impact is in his interactions,” said Dr. Valerie Durrant, director of the Division of AIDS, Behavioral and Population Sciences. “He never missed any opportunity to provide clarity and to answer questions about review.”

Freund grew up in New Jersey and attended Columbia University. After a stint as a laboratory assistant in New York, he earned his Ph.D. in biology at Harvard. “Grad school was where the real excitement came,” he recalled. “I worked with



Dr. Robert Freund



Five scientists from NIH are among AAI’s inaugural class of distinguished fellows. They are (from l) Dr. Anthony Fauci, Dr. Ronald Germain, Dr. Richard Hodes, Dr. Susan Pierce and Dr. Ethan Shevach.

remarkable people. That's where science transitioned into something really special for me."

His postdoctoral research in the department of pathology at Harvard Medical School focused on polyoma tumor virus in mice, evolving into molecular work on the virus and oncogenesis.

In 1992, he became a faculty member in the department of microbiology and immunology at the University of Maryland School of Medicine.

Freund came to NIH in 2000, when he realized he was ready for a change from academia. He joined CSR as a scientific review officer (SRO) for one of the virology study sections.

In 2004, Freund created a still-heralded training program. It encompassed a course for new SROs, mentoring and workshops for more experienced staff. "A generation of SROs learned the trade from him," said Durrant. "His influence on review is broader than the HIV/AIDS field because of how many SROs were shaped by the way he trained them into their positions."

"His innovative training is a legacy," agreed Dr. Alexander Politis, chief of the infectious diseases and microbiology IRG. "When I interview for new SROs, I am confident in saying we have excellent training, and a lot of that is because of him."

Freund became AARR IRG chief in 2010. The position, besides managing the staff, involved outreach in the United States and globally. One highlight was working with Politis and others on the U.S.-South Africa Program for Collaborative Biomedical Research (now in phase 2) that included training South African researchers to prepare proposals for CSR-coordinated peer review.

His career culminated in reorganization of AARR study sections, for which he received the CSR Director's Award in 2018.

"The reorganization brought our study sections and processes in line with current HIV/AIDS science, which was huge," said Durrant. "He had developed relationships with the extramural community, program staff and people across NIH in the field. He tapped into those connections to get input on the science. It was his years of work in building relationships with the community that did that."

In retirement, Freund's first priority has been going through boxes of old papers, beginning with those from his parents as well as spanning his own career. Through that exercise, he has relived his route from New York to Massachusetts to Maryland. It reinforced that "everything that I did was fun and exciting," he said.

Mayer Elected to Royal Society

In this fast-paced age of emails, texts and tweets, Dr. Mark Mayer, a scientist emeritus at the National Institute of Neurological Disorders and Stroke, was pleasantly surprised when he recently opened his mailbox and found a letter announcing his election as a fellow of the Royal Society of the United Kingdom.

"It feels both great and humbling to be recognized by one of the world's most highly respected scientific societies," said Mayer. "It is also an opportunity to recognize the hard work of many talented researchers who helped my lab serve the NIH mission."

Mayer was cited for "his seminal work on the biophysics and structural biology of glutamate receptor ion channels." He has spent more than 30 years studying these proteins at NIH.


"The NIH and the neuroscience community extends a heartfelt congratulations to Dr. Mayer. I cannot think of anyone more deserving of this high honor," said Dr. Nina Schor, NINDS deputy director. "Dr. Mayer and his team have greatly shaped our understanding and appreciation for the role that glutamate receptors play in regulating excitatory neurotransmission throughout the nervous system."

Mayer was born and raised in Great Britain, where in 1977 he earned a bachelor of science first-class honors degree from the University of Bristol.

After earning his doctorate in neuropharmacology at the University of London's School of Pharmacy, he first came to NIH in 1981 as a Harkness fellow of the Commonwealth Fund. He began investigating ion channel biophysics in the lab of NICHD's Dr. Phillip G. Nelson. In 1984, he returned to NIH to work as a postdoctoral fellow in Nelson's lab. In 1987, he became an NICHD senior investigator.

"I am forever grateful to Dr. Nelson," said Mayer. "He took a hands-off approach to running the laboratory, giving postdoctoral fellows an unusual degree of freedom to pursue their interests."

The Royal Society noted important findings that Mayer's lab made later in his career using new techniques including X-ray crystallography, cryo-EM and physical biochemistry.

In its letter, the society concluded that Mayer "has made groundbreaking observations that profoundly changed our view of receptor function and excitatory synaptic transmission in the brain."—Chris Thomas 



NINDS's Dr. Mark Mayer recently was elected as a fellow of the Royal Society of the United Kingdom.

Suffered a Recent Head Injury?

NINR seeks research participants who have experienced a mild to moderate head injury in the last 30 days. The aim of the research is to explore why some people with a head injury go on to develop other conditions such as depression, post-traumatic stress disorder or post-concussion disorder. Compensation is provided. Contact the Clinical Center Office of Patient Recruitment at 1-866-444-2214 (TTY for the deaf or hard of hearing: 1-866-411-1010) or prpl@cc.nih.gov. Read more at <https://go.usa.gov/xUaJ4>. Refer to study 14-NR-0032.

Patients with OI Needed for Study

NICHD researchers seek individuals with osteogenesis imperfecta (OI) for study participation. Now enrolling children up to age 12 and people with OI of any age who were previously seen at NIH. For more information, call the Clinical Center Office of Patient Recruitment, 1-866-444-2214 (TTY for the deaf or hard of hearing: 1-866-411-1010). Read more at <https://go.usa.gov/xEYjh>. Refer to study 18-CH-0120.

Sleep Study Seeks Volunteers

NINDS researchers seek healthy volunteers, 18-34 years old, to participate in a study to explore patterns of brain activity that occur during sleep. You will have two overnight sleep studies where you will sleep in the MRI. Compensation will be provided. For more information, call the Clinical Center Office of Patient Recruitment at 1-800-411-1222 (TTY 1-866-411-1010). Refer to study 16-N-0031. Read more at <http://go.usa.gov/x9tQw>.

Problem Drinkers Wanted for Study

If you or someone you know is drinking too much, NIH may be able to help. NIAAA conducts studies on how alcohol affects the body and is looking for new ways to treat alcohol problems. If you qualify, you can receive alcoholism treatment at no cost while you participate in research. Compensation may also be provided. To learn how to participate, call the Office of Patient Recruitment at 1-866-444-2214 (TTY 1-866-411-1010). Read more at <https://go.usa.gov/xUx4C>. Refer to study 14-AA-0181.

At Risk for Prostate Cancer?

NCI researchers seek men who have a genetic mutation that puts them at a high risk for prostate cancer to join their clinical trial. Eligible participants are 30- to 70-year-old men without prostate cancer and who have a documented gene mutation. Partner with NCI in research to help prevent and find better treatment options for prostate cancer. For more information, call 1-866-444-2214 (TTY for the deaf or hard of hearing: 1-866-411-1010) or email PRPL@cc.nih.gov. Read more at <https://go.usa.gov/xEHtD>. Refer to study 19-C-0040.



U.S. Surgeon General Jerome Adams (l) takes a selfie with 5K crowd. Shortly thereafter he joins runners heading off on a route around the campus perimeter.

PHOTOS: CHIA-CHI CHARLIE CHANG

Guest Speakers Engage Crowd at Minority Health 5K

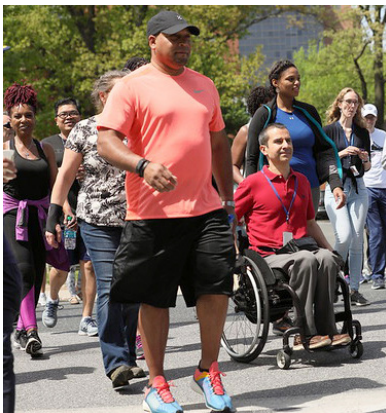
“Hey Dr. Collins, I am not in your back yard. I’m in your front yard here at Building 1 with all these wonderful people celebrating Minority Health Month!” said U.S. Surgeon General Jerome Adams. He joined NIMHD director Dr. Eliseo Pérez-Stable and HHS assistant secretary for minority health Capt. Felicia Collins in welcoming walkers, runners and rollers to the recent Minority Health 5K. NIMHD hosted its third 5K to celebrate National Minority Health Month.

The event brings awareness to health disparities that affect racial and ethnic minority populations. The 2019 theme, “Active and Healthy,” encouraged people to add some physical activity to their lives. From the speakers delivering wellness messages to the volunteers at water stations and information tables to the crowd of participants, everyone enjoyed the sunny day and the opportunity to be active and healthy at NIH.

To watch the surgeon general’s Twitter video from the event, visit https://twitter.com/Surgeon_General/status/1121090751809634305.



Picture perfect weather helped spark broad participation.



Above, participants walk and roll. Below, guest speakers HHS assistant secretary for minority health Capt. Felicia Collins and Adams join NIMHD director Dr. Eliseo Pérez-Stable. At right, Kelli Carrington, NIMHD communications director, greets attendees.



Enthusiastic Minority Health Month supporters cheer on participants at one of several encouragement (water) stations.