



ABOVE • You can't take a hike without a proper warm-up. See story below.

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Cutback Undercuts Global Edge

ACD Hears About Sequester's Consequences on Biomedical Research

By Carla Garnett

When the Heads of International Research Organizations get together for their bi-annual meetings, they go around the table, as usual, reporting on their country's biomedical research budget trajectory: China's going up about 22 percent. India's increase will be in the teens. Germany's hiking its investment up 6 or 7 percent. The European Union—even with all of its financial health concerns—also plans an uptick in its funding for science. HIRO includes close to 20 organizations, representing about 95 percent of the world's public support of biomedical research.

"Then they come to me," recalls NIH director Dr. Francis Collins, new HIRO chair, "and I say, 'Well, we just went down 5 percent and we might go down more.' People are just stunned by this. Their motivation for building biomedical research in their country was because they read our playbook. They looked



NIH director Dr. Francis Collins (c) presides over the June 13 session of the advisory committee to the NIH director.

SEE ACD MEETING, PAGE 6

UVa.'s Johnson Offers New Concept of Alcoholism, Therapy

By Rich McManus

"If you think you are too small to make a difference, you haven't spent a night with a mosquito." With that African proverb, Dr. Bankole Johnson began the 5th annual Jack Mendelson Honorary Lecture in a way he said honored Mendelson's reputed love of jokes, particularly bad ones. Johnson, as able a raconteur as ever graced a barroom, declared that chatting, especially with colleagues in the field, has been the main distillery for a fresh and evolving concep-



UVa.'s Dr. Bankole Johnson

SEE JOHNSON, PAGE 8



Chigasa Odor (l) and Michelle Aikens of ORS

Stepping Out Take a Hike Day Promotes Exercise, Camaraderie

By Dana Steinberg

Hundreds of NIH'ers walked or jogged the nearly 3-mile loop around campus on June 6 during the 6th annual Take a Hike Day. Just before

the lunchtime walk got under way, the sky darkened and unleashed a few raindrops, but that did not deter the motivated masses and the weather held out for the duration.

Some 1,500 employees from every institute and center registered to participate. Bragging rights for IC with the most people regis-

SEE HIKE, PAGE 4



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NIH...Turning Discovery Into Health

briefs

Systems Biology Centers Celebrate 10 Years

NIGMS will host a meeting July 11-12 focused on the activities and accomplishments of its National Centers for Systems Biology. The free event is open to all and will take place in Kirschstein Auditorium, Bldg. 45. The agenda includes a panel discussion on the future of systems biology, presentations from each center and talks by young scientists whose careers have been affected by the program. For details, visit <http://meetings.nigms.nih.gov/index.cfm?event=home&ID=16572>.

Graduate & Professional School Fair, July 17

The NIH Graduate and Professional School Fair will be held on Wednesday, July 17 from 9 a.m. to 3 p.m. at the Natcher Conference Center. The fair provides an opportunity for NIH summer interns (especially those in college) and postbacs, as well as other college students in the D.C. area, to prepare for the next career step. More than 100 colleges and universities from across the U.S. will be sending representatives in hopes of recruiting NIH trainees.

The day will also include workshops on various related topics and exhibits, which will open from 10 a.m. to 1:45 p.m. A list of participating institutions and registration information can be found at http://www.training.nih.gov/gp_fair.

FAES Announces Fall 2013 Courses

The Foundation for Advanced Education in the Sciences Graduate School at NIH announces the schedule of courses for the fall 2013 semester. The majority of the evening classes sponsored by FAES will be held on the NIH campus.

Courses are offered in biochemistry, bioinformatics, biology, biotechnology (daytime courses), chemistry, immunology, languages, medicine, microbiology, pharmacology, statistics, technology transfer, alternative medicine, GRE and courses of general interest. Advanced studies in technology transfer and public health are also being offered.

Students who complete the Advanced Studies in Technology Transfer at FAES can now transfer all 15 credits as a block to University of Maryland University College Graduate School of Management and Technology. By completing 21 more credits at UMUC, students can be awarded M.S. degrees (with specialization in technology transfer). See transfer of credits in the 2013-2014 FAES catalog.

FAES courses may be accepted in transfer at other academic institutions; consult the transfer policies of each institution.

Classes will begin the week of Sept. 9; mail regis-

tration is now through Aug. 16; online registration is now through Aug. 25; walk-in registration will be held in Bldg. 10, Rm. 1C172 on Aug. 26-Sept. 4 from 8:30 a.m. to 4 p.m. and Sept. 3 from 8:30 a.m. to 7 p.m. Open house will be held Aug. 20 from 4 to 7 p.m. in Bldg. 10 (classroom 4), Rm. B1C208; tuition is \$145 per credit hour and courses may be taken for credit or audit.

Fall catalogs are available in the graduate school office in Bldg. 60, Suite 230; the Foundation Bookstore in Bldg. 10, Rm. B1L101; and the business office in Bldg. 10, Rm. B1C18. To have a catalog sent, call (301) 496-7976 or visit www.faes.org.

Skarlatos, McKeon Honored for Contributions to Genetic, Cellular Therapy

Dr. Sonia Skarlatos, deputy director of the division of cardiovascular sciences, NHLBI, and Dr. Catherine McKeon, senior advisor for genetic research, NIDDK, received the inaugural Distinguished Service Award at the American Society of Gene & Cell Therapy's 16th annual meeting in Salt Lake City recently.

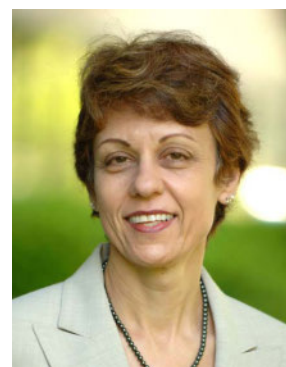
Both are founding members of ASGCT and have served on several of the organization's committees.

Skarlatos, who spearheads national and international innovative gene and cell research therapies for heart, lung and blood diseases, was honored for developing several programs to support gene and cell therapy investigators from bench to clinical application and for ensuring that certified good manufacturing practices for gene insertion are available to researchers.



Dr. Catherine McKeon

of multiple gene therapy symposia; and participation in educational efforts with young investigators by speaking about NIH funding opportunities during educational sessions at ASGCT's annual meeting.



Dr. Sonia Skarlatos

McKeon oversees NIDDK programs in gene therapy for cystic fibrosis and inborn errors of metabolism. She was honored by ASGCT for her long history of support for gene therapy research, including issuing one of the first NIH requests for application of research centered on gene transfer and gene therapy; organization

nih record

Deaf Employee Is Heard NIH Mission Statement Is Amended

By Rich McManus

At the suggestion of a National Eye Institute employee who is deaf, NIH recently amended its official mission statement.

The one-sentence statement had said, “NIH’s mission is to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life and reduce the burdens of illness and disability.”

But because David Rice, a management analyst at NEI since October 2009, felt that his particular disability was not a burden, he wanted to know if NIH director Dr. Francis Collins would be willing to modify the mission statement so as not to offend people who do not consider their disabilities to be burdensome.

Recently, the phrase “the burdens of” was removed from the statement, which now reads, “NIH’s mission is to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life and reduce illness and disability.”

According to Debra Chew, director of the Office of Equal Opportunity and Diversity Management, this was a lesson in NIH compassion and responsiveness.

“This was a very important event from a diversity perspective,” said Chew, who arrived at NIH last July. “It shows that an individual employee can raise concerns that Dr. Collins will take seriously and address. I think that’s good. NIH has no wish to have a mission statement that offends people...It just goes to show you that we all have different perspectives.”

Chew met Rice last fall at a “meet and greet” and mentioned that he had a problem with the mission statement. As she recalls, “He told me, ‘We don’t consider ourselves to be burdens, nor do we consider our disability a burden...Would you ask Dr. Collins to consider a change?’”

Chew broached the issue with Collins, “who was immediately agreeable to a change,” she said. “No one had really looked at [the statement] this way. David really raised a good point.”

Chew took the suggestion to Kim Kirkpatrick, OEODM’s disability program manager, who also chairs NIH’s disability committee. “Once we realized that Dr. Collins was open to a change, we got input from the disability committee on proposed language,” said Chew. Two versions

were proposed and the three-word change was adopted.

“This is a symbolic moment for NIH,” said Chew. “It’s really about [Rice’s] courage. He did a great thing for the NIH.”

Rice, who became deaf at age 4, recalls the “grace and integrity” with which his parents dealt with his removal from the school system once he became deaf; they found a school better equipped to handle his needs. “It was the fire that my parents had that led me to want to become an advocate not only for the deaf community but also for all those who have a disability,” he said.

“I know it was not the intent that NIH had [to offend people with disabilities],” Rice continued, “but it could look to some as though, in trying to improve the health and life of American citizens, NIH is only looking for cures to reduce disability because [people with disabilities] are a burden on society. The new mission statement takes out that stigma that we are a burden and conveys the message that NIH’s goal is to reduce illness and disability because it can improve the livelihood of American citizens and not because we are a burden on society.”

Rice said he didn’t think his suggestion had much chance of being taken seriously at first. “To be honest, I did not expect much,” he said. “All I wanted was for them to listen, which they did. Debra told me that she spoke to [NIH principal deputy director] Dr. [Lawrence] Tabak, who wholeheartedly agreed. At that point, once I knew Dr. Tabak was in the picture, I knew that something was going to come of this.

“Let me tell you,” Rice continued, “there was no greater feeling than when Dr. Collins used the new mission statement on Capitol Hill. I take no credit for the new mission statement. All I did was raise questions and concerns. But I felt that my small change made a difference, and that alone is my lifelong goal—making small changes to create big impacts.”

He concluded, “I can only imagine that the change will be a positive one. The biggest reason why NIH was so appealing to me was its ability to be open to change as well as moving forward, a lot quicker than some government agencies do. That is a product of the vision that Dr. Collins has for NIH. But like anyone who has a large responsibility, it is hard to envision everything—that’s where everyone else comes into play. [We can all] make NIH [a] leader in science as well as a great work environment where everyone can feel they are making a small but important impact on the American public.”



NEI’s David Rice objected to NIH’s mission statement and took his concerns to NIH leadership, who ended up agreeing with him.



HIKE

CONTINUED FROM PAGE 1

Above, from l:

Participants warm up their muscles on the Bldg. 1 lawn before the hike. Light sprinkles may have diminished attendance somewhat this year.

Chris Gaines (l), program manager for wellness and retail services in the Division of Amenities and Transportation Services, poses with the event's roster of speakers, including (from l) ORS director Dr. Alfred Johnson; Cornell McClellan, fitness trainer for the First Family; and NIH director Dr. Francis Collins.

The event attracted participants of all ages.

PHOTOS: ERNIE BRANSON

Keep Walking

Ever notice the little red heart logos on the sidewalks around campus? They are placed in 1/10-mile increments; count 10 of them and you've traveled about a mile. This initiative, Heartwalk at NIH, offers a guide to get us moving. For more on wellness and fitness at NIH—including nutrition, workplace ergonomics and office stretches—visit www.ors.od.nih.gov/Pages/home.aspx.

tered—286—goes to the Office of the Director. For off-campus employees who wanted to take a hike, five routes were set up at satellite locations including Executive Blvd., Rockledge and Shady Grove.

On campus, participants convened on Bldg. 1's front lawn for warm-up stretches and a motivational speech by Cornell McClellan, the First Family's personal trainer and a member of the President's Council on Fitness, Sports & Nutrition.

Despite the overcast skies, McClellan said, "I'm glad to see we all are still motivated, still moving and there is high attendance." He empathized with how difficult it can be to make time in our busy lives to exercise but noted one couple with an undeniably busy schedule—President Obama and First Lady Michelle—who remain dedicated to regular exercise. He said, "For personal health, productivity and relieving stress, they make time to include activity in their daily routine."

Some 35 percent of all American adults are obese and, if we keep on this pace, McClellan said, nearly 42 percent will be obese by 2030. Among its many health benefits, exercise reduces the risk of obesity. McClellan noted that exercise also reduces the risk of chronic diseases—such as heart disease, type 2 diabetes and asthma—and enhances mental focus.

Since so many of us have sedentary jobs, McClellan suggested stretching in our offices after several hours of sitting. He recommended checking out www.fitness.gov for active lifestyle guidelines and ideas. "Finding time [to exercise] is critical for overall wellness," he said. "Find a minimum of 30 minutes a day and eat right."

NIH director Dr. Francis Collins echoed that sentiment in his welcome remarks. Although he was unable to join the walk, his wife Diane Baker participated and chatted with many who strolled.

Along the way, water stations kept hikers hydrated. At the finish line, each participant received hearty congratulations and a useful gift: a pedometer.

Take a Hike Day was co-sponsored by NIH's Office of Management, Office of Research Services and Division of Amenities and Transportation Services.



McClellan acknowledges that a commitment to fitness takes time, but says if the Obamas can do it, most anyone can.



At left, runners and walkers take off at the start of Take a Hike Day, as Randy Schools (l), president of the NIH R&W Association, signals the start. At right, leading warm-ups on the lawn in front of Bldg. 1 is Sae Davis.



Sen. Harry Reid (c, D-NV) views a model of the Clinical Research Center in the company of hospital director Dr. John Gallin (l) and NIH director Dr. Francis Collins.

PHOTO: ERNIE BRANSON

Sen. Reid Visits Clinical Center

Senate majority leader Harry Reid (D-NV) visited NIH on June 17, meeting NIH director Dr. Francis Collins in the Clinical Center and learning about recent advances in NIH science.

Reid learned about the Undiagnosed Diseases Program from its deputy director Dr. Cynthia Tifft. Tifft oversees treatment of pediatric patients in the UDP, and introduced Reid to a family whose daughter has been a UDP patient for the past 4 years.

Reid and four members of his staff were also greeted by CC director Dr. John Gallin, who gave the senator an overview of the hospital. The visit was coordinated by NIH's Office of Legislative Policy and Analysis.

Reid's tour, which was just over an hour long, concluded with a meeting with NIAID director Dr. Anthony Fauci, NINDS director Dr. Story Landis and NHLBI director Dr. Gary Gibbons, who updated the senator on such topics as recent advances in Alzheimer's disease, progress toward a universal flu vaccine and how sequestration threatens young investigators.

Three days after his visit, Reid summarized his impressions of NIH in a 15-minute address to colleagues on the Senate floor. He touted NIH contributions to the lengthening lifespans of Americans, along with advances in cancer treatment, heart disease and stroke, AIDS/HIV therapy, Alzheimer's disease and spinal cord injury.

"It would be impossible to count the lives that NIH innovation has already saved," he said, "and researchers are not close to realizing the limits of modern medicine."

Reid also condemned the effects of sequestration on NIH: "It's very, very sad to me that these wonderful people [NIH employees] are dedicating their lives to not how much money they can make, but how much better they can make people feel and what they can do to cure diseases [and are now] looking for other places [to work]...The senseless, meat-ax, unfair cuts that we call sequester puts all NIH does at risk."

He concluded, "We should reduce the deficit by making smart investments, not by making shortsighted cuts that cause pain, suffering and death. There's simply no price tag you can put on that." 🗨️

NIH Called 'Best' for Workers Over 50

NIH recently topped the list of recipients of the 2013 AARP Best Employers for Workers Over 50 award, cosponsored by the Society for Human Resource Management. The 50 winners were announced on June 17 at the SHRM annual conference in Chicago. NIH principal deputy director Dr. Lawrence Tabak accepted the honor on behalf of NIH.

The award has been given since 2001; NIH has flirted with the top of the list for years. In 2008, NIH debuted at #11. NIH finished 3rd in 2009 and 2011.

The benefits to older workers for which NIH was touted include access to emergency day care, a variety of financial- and retirement-planning workshops and flexible work arrangements including telework and alternative work schedules. Campus fitness centers were also cited as an attraction.

Forty-seven percent of NIH's workers are 50 or older, a percentage that has been creeping up annually. According to NIH's Office of Human Resources, on average, NIH staffers stay on 5 years past their retirement eligibility date and the average tenure of employees over age 50 is 18.4 years.

The top five AARP honorees are all in the health care field. Ranking just below NIH were Scripps Health, San Diego; Atlantic Health System, Morristown, N.J.; University of Texas MD Anderson Cancer Center, Houston; and Mercy Health System, Janesville, Wis. Forty-one percent of the top 50 employers are in health-related fields. The full list is available at www.aarp.org/bestemployers.

According to AARP, "Award winners have set outstanding examples through programs that help them retain, retrain, engage and recruit the older workers who will be increasingly crucial to their success and the success of the U.S. economy over the coming decade."

AARP made a video at NIH earlier this spring in which a number of employees are featured. To watch, visit www.aarp.org/work/employee-benefits/best_employers/.

Rodgers Recognizes 'Weight of Nation' Staff

NIDDK director Dr. Griffin Rodgers (standing, fourth from l) congratulates NIH recipients of the HHS Innovates award from The Weight of the Nation Campaign. Shown are (seated, from l) Dr. Layla Esposito, NICHD; Dr. Catherine Loria, NHLBI; Dr. Susan Yanovski, NIDDK. Standing are (from l) Susan Dambrauskas, NIDCD; Joanne Karimbakas, NIDDK; Kathy Kranzfelder, NIDDK; Dr. Lisa Gansheroff, NIDDK; and Dr. Philip Smith, NIDDK. Not shown is Dr. Rachel Ballard-Barbash, NCI.





ACD MEETING

CONTINUED FROM PAGE 1

Above, from l:

New ACD member Dr. Peter MacLeish of Morehouse School of Medicine emphasizes the importance of exposing young scientists to R01-level research early in their careers.

Collins and NIH deputy director for science, outreach and policy Dr. Kathy Hudson (c) listen as ACD member Dr. Renee Jenkins (r) of Howard University wonders aloud about the effects of the sequester on private industry funding of research.

ACD member Dr. Clyde Yancy of Northwestern University's Feinberg School of Medicine says the NIH director's report regarding effects of sequestration is a "compelling call for action."

PHOTOS: BILL BRANSON

at the success of this enterprise since World War II... They're trying to become us. We seem to have forgotten how to be us. It is very disheartening to see the contrast. I think the world is really shaking its head and wondering, 'What has happened to our leader in science and technology, the United States, that these kinds of decisions could be happening?'"

A somber Collins told that anecdote on June 13 during his twice-yearly state-of-NIH report to the advisory committee to the director (ACD). For the fourth ACD meeting in a row, dismal funding news dominated the discussion.

Sequester Effects Sink In

"The sequester—which was intended to be a poison pill so poisonous that no one would ever contemplate swallowing it—was put into legislation to inspire Congress to make some decisions about our nation's fiscal situation," Collins said in the first ACD gathering since the draconian budget cuts took place. "Congress was unable to do so, so that poison pill was swallowed. On Mar. 27, we all got poisoned. In one fell swoop, NIH lost \$1.55 billion that would have gone to medical research in this fiscal year. The result of that is an estimated 700 grants [will not be funded]. It's impossible to say what we have lost...but I would not be surprised if there were some major advances that those grants were going to catalyze that now won't happen. I would not be surprised if there were early stage investigators waiting for support of that first opportunity to be NIH grantees who are now going away disappointed [and] who might ultimately give up...The seriousness of this probably is not apparent to the average American on a daily basis."

Collins received more than 2,000 responses to his tweet asking about research hardships due to the sequester. "Many of them [were] quite heartbreaking," he said, "from graduate students to postdocs or junior faculty who were contemplating closing down a project or who find themselves unable to do a project. Maybe more troubling [were] quite a few notes from young scientists saying, 'That does it. I'm done here. I've gone through the stress over the last few years when things have been tight and success rates

have been falling...and now to have it reach this level...is the last straw.' If we start to lose young people of this generation, they're not just going to come back when things get better."

Story Warrants Wider Audience

Reaction among ACD members to Collins's report was swift.

"The gravity of what you've said requires some feedback," said ACD member Dr. Clyde Yancy of Northwestern University's Feinberg School of Medicine. "I don't view this as just an information update. I see this as a very compelling call for action...I can't imagine that there are those in the community [who] are that nihilistic that we wouldn't want to recalibrate the way our resources are being deployed. It's amazing that in this country it takes a crisis for change to be effected, and sometimes the crisis is begun with just one story."

Adding detail to the picture Collins painted, Neil Shapiro, NIH associate director for budget, reported that the sequester cut NIH's fiscal year appropriation by 5.5 percent, dropping the agency to its lowest funding level since 2008. Adjusted for inflation, then, in actual dollars, NIH's \$29.15 billion final FY13 budget is its lowest since 2001.

Pat White, NIH associate director for legislative policy and analysis, said the NIH director has, in the last 6 months alone, given briefings, led tours and in myriad other ways attested to the benefits—both moral and economic—of a greater investment in NIH for at least 50 members of Congress.

Unfortunately, the financial forecast for next fiscal year looks even bleaker, with NIH taking another 18.5 percent cut in a proposal put forth by the House of Representatives.

Responding to the outlook, ACD member Dr. Cato Laurencin of the University of Connecticut voiced his concern for America's global competitiveness and the possibility of a "brain drain" in which U.S. scientists might pursue relocation to other nations where investment in research is growing rather than declining.



Long-time ACD veteran Dr. Shirley Tilghman (r) of Princeton University discusses an update from the subcommittee work group on biomedical workforce.

ACD member Dr. Helen Haskell Hobbs of the University of Texas Southwestern Medical Center said, “I heard two words that resonate with everyone. The first is ‘competition.’ Americans are competitive and I think getting this message out about what other countries are doing versus what we’re doing will rally a lot of people. The second word is ‘opportunity.’ That our young people—our best and brightest—are now in this environment where they feel they do not have a future. That’s a very powerful message that will speak across party lines.”

In Other News

Financial matters aside, the ACD meeting experienced several bright notes:

❖ Collins announced that a new NIGMS director, Dr. Jon Rorsch, would arrive soon and that the search for a new permanent NIAAA director is down to a short list of candidates.

❖ NIH’s position on the patenting of human DNA was upheld by the Supreme Court. Announcement of the court’s decision—which was released to the public June 13 during the meeting—prompted a spontaneous burst of applause around the room.

❖ In the afternoon, new ACD member Dr. Cori Bargmann of the Rockefeller University discussed the new BRAIN initiative announced by President Obama this past spring. NIH, with two other government agencies—DARPA and NSF—and 4 private research organizations, is leading the initiative.

“Working independently but in communication with each other,” Bargmann, who cochairs the initiative, said the project will “take technological advances and harness them to construct a dynamic picture of brain function.”

The initiative’s 15 members (plus 3 *ex officio* members from NIH, NSF and DARPA) meet monthly to develop timelines, milestones and cost projections.

Public portions of the 1½-day meeting are archived online at <http://videocast.nih.gov/PastEvents.asp?c=102>. 🔍

‘Curing the Epilepsies’ Conference Points to Many Pathways Forward

By Kathryn DeMott

More than half a million people live with treatment-refractory forms of the epilepsies, meaning they experience persistent seizures despite trying multiple medications and surgery. For many, such seizures occur every day—several times a day—and go hand in hand with other conditions such as depression, autism spectrum disorder and intellectual disability.

With the goal of developing more effective treatments, several hundred people met at NIH recently for “Curing the Epilepsies 2013: Pathways Forward,” the third in a series since the White House initiated the first meeting in 2000. Widely considered to be a turning point for epilepsy research, the initial meeting spurred a shift from focusing on seizure control to preventing and curing the disorders. At each of the meetings, scientists, physicians and patient advocates play a key role by setting priorities for research in the form of benchmarks.

“The biggest question facing the epilepsy community today is finding out what causes seizures to begin, a process referred to as epileptogenesis,” said Dr. Story Landis, director of the National Institute of Neurological Disorders and Stroke, which sponsored the meeting in collaboration with several medical societies and patient advocacy groups. Understanding how seizures start and what causes them to recur will lead to new treatments that can prevent the epilepsies or significantly modify the course of the disease for those with seizures.

Roughly half of all cases of epilepsy can be linked to infection, head trauma, neonatal brain injury, stroke, gene mutation, brain tumor or other identifiable problems. For the remaining cases, an underlying cause is unknown, although these forms of the disorders are widely presumed to involve additional genetic mutations. But even when there is an identifiable cause, it is not clear why neurons begin to fire abnormally in patterns that lead to seizures.

In addition to new insights about epileptogenesis, experts at the meeting presented research on the conditions that often accompany the epilepsies, such as autism spectrum disorder and sleep disorders. Others discussed how combinations of advanced imaging technologies are helping to refine surgical techniques and improve success rates.

Recent progress in understanding the genetic basis of the epilepsies has been driven by Epi4K, an NINDS-funded initiative using next-generation sequencing to analyze the genomes of at least 4,000 people with the epilepsies.

The final day of the meeting was devoted to discussion about how to revise the Benchmarks for Research on the Epilepsies that identify priorities for advancing research over the next 5 to 10 years. 🔍



Above, NINDS director Dr. Story Landis (l) and NIH director Francis Collins (second from l) gave kudos to conference co-chairs Dr. Anne Berg of the Ann & Robert H. Lurie Children’s Hospital of Chicago and Dr. Kevin Staley of Massachusetts General Hospital. At right, Dr. David Goldstein of Duke University discusses the Epi4K initiative.



Right:

NIAAA acting director Dr. Kenneth Warren (l), who introduced the guest speaker, said, “A love of adventure defines Dr. Johnson as both a scientist and a person.”

PHOTOS: ERNIE BRANSON

tion of alcoholism: “Most of my scientific work has been chats,” he said.

“Everyone in the world is an alcoholism expert,” he joked, “and can explain what works or doesn’t work. The problem is, most advice is old or wrong.”

In his view, “Alcoholism is a set of multiple, complex diseases that change over time [and are influenced by] environment and medication. It is a set of diseases that can be staged and that would require treatment protocols, much like cancer—there would be different protocols for different kinds,” he told a Lipsett Amphitheater audience that gathered on May 21 for the NIAAA-sponsored event.

“Abstinence might not be the gold standard,” he continued. “Reducing harm is just as important, I would argue.”

Johnson’s lecture confirmed a number of personality traits described by NIAAA acting director Dr. Kenneth Warren, who introduced the guest speaker. “A love of adventure defines Dr. Johnson as both a scientist and a person,” said Warren, noting that “Kole” is a helicopter pilot, car racer and the recipient, from the Queen of England, of a coat of arms. Johnson’s talk combined happy-hour conviviality with a review of six successive experiments that illustrated yet another of his proverbs: “When a needle falls in a deep well, many will look, but few will go deep after it.”

Emphasizing science’s reliance on a curious and receptive community, he observed, “Science depends on providence, some luck, a lot of guessing and really a lot of fear...we could have failed tremendously. Every building block of scientific discovery depends on small things, not on big ones.”

The “small thing” for which he is best known is discovery that ondansetron—an off-label medication (also, he said, “the only word I know that begins and ends with ‘on’”) he thought might be effective in treating alcoholism—effectively suppresses the craving for alcohol in a subset of patients.

“Alcoholism is a medical disease with moderate to high heritability,” he explained, “but even today, many people don’t believe it. It is not a disease of personality.” Studies have shown that it is about 60 percent heritable, which leads to an obvious question: How to remove the pathways of heritability?



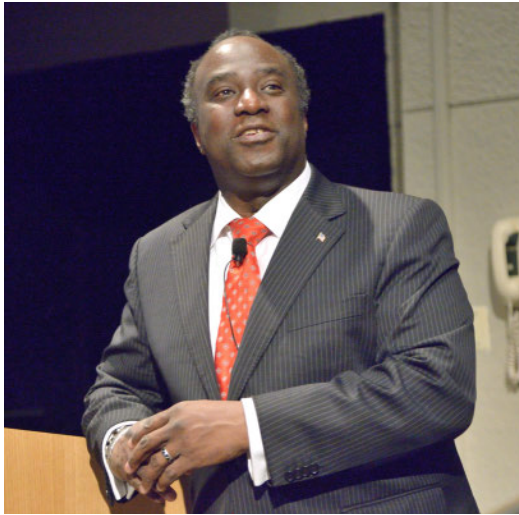
Johnson, who chairs the psychiatry department at the University of Virginia, and his colleagues have found that cortico-mesolimbic dopamine neurons are the principal neurocircuitry through which alcohol’s reinforcing effects are expressed. “There are around 104 or 105 neuronal networks that explain why people drink too much. It’s a very complicated process,” he said.

Alcoholism, he argues, is a heterogeneous disorder, not a uniform one, and has distinct biological subtypes. For example the biology underlying early-onset versus late-onset alcoholism is different; ondansetron works in the former category, but not in the latter.

“It is a very tall order,” he said, “getting the right medicine for the right patient at the right time and for the right length of time.”

His team has focused on two major brain neurotransmitters, dopamine and serotonin, guessing that “something big must control this process.” In their studies of what controls gating of serotonin function, they found that healthy control subjects had a gene type that promotes increased scavenging of serotonin in the brain. “In alcoholics, something really strange happens—the system reverses itself,” he said, with lower amounts of serotonin uptake a distinguishing factor. Alcoholics actually had a hypo-functional serotonin state.

Johnson’s team found that carriers of the “L” form of a particular gene were at risk of developing alcoholism, vulnerable to a “fast-forward” process. Carriers of the “SS” form of the gene, conversely, seemed protected. Skeptical, owing to the proverb “A single tree cannot make a forest,” that craving for alcohol might be genotype-dependent, the scientists did further work, in



Johnson said treatment of alcoholism is proceeding toward personalized medicine, where therapy is tailored to underlying biology.

test tubes, showing that mRNA expression levels indeed confirmed the gene's usefulness as a biomarker.

Johnson applauded the rationality of proceeding from a patient's DNA sample, to determining genotype, to finding a useful drug as vastly superior to the treatment that prevailed when he was a young intern in London, when patients would endure a bit of hectoring on the part of a physician, then pop a pill and vomit.

Johnson said treatment of alcoholism is proceeding toward personalized medicine, where therapy is tailored to underlying biology. In addition to ondansetron, a number of drugs have been effective, he said, including olanzapine, naltrexone, baclofen and topiramate. "Genotype can predict treatment response," he said.

Johnson wonders whether excessive drinking is a symptom or a disease, and if abstinence is still relevant. What new drug targets can science uncover? "We presume all alcoholism is the same," he lamented. The placebo response, too, is a mystery: Is it a molecular characteristic? Is it the same for everyone? Johnson says he can imagine a day when placebo becomes an option for treatment, not an exclusion from treatment.

He predicts a future in which physicians employ a panel of medications that "can work downwards or sideways...This is one of the most exciting areas of science," he concluded, "and one of the most exciting areas of discovery. We need to get the message out. It's better than just guessing." ①

Local High School Lends Ears to Noisy Planet's Sound Advice

Linganore High School alto saxophonist Justin Fraumeni had never thought about how his participation in the school band could affect his hearing until he read a newspaper article about the risks

for noise-induced hearing loss. He decided to do his own research, borrowing a sound level meter and recording the decibel levels in the band room during practice, as well as other areas of the school.

When he was done, he published his results in the school newspaper, *The Lance*. Fraumeni's article came to the attention of staff in the National Institute on Deafness and Other Communications Disorders communications office. They thought it offered an excellent opportunity to raise awareness about noise-induced hearing loss among Fraumeni and his bandmates using messages from the It's a Noisy Planet. Protect Their Hearing campaign.

The Noisy Planet campaign, which will be 5 years old in October, targets parents and tweens (children ages 8-12) with easy-to-understand messages about noise-induced hearing loss, the only kind of hearing loss that is completely preventable. Science shows that cumulative exposure to noise levels above 85 decibels (roughly, anything louder than the sound of heavy city traffic) can cause damage to the delicate sensory hair cells in the inner ear that allow us to hear. This results in hearing loss later in life.

The Noisy Planet campaign teaches three simple ways to protect your hearing: walk away from the noise, turn it down or wear hearing protectors, such as earplugs or earmuffs. In addition to providing tips and tools on its web site and Facebook page, the campaign offers community outreach with a 45-minute presentation for the classroom. Since 2010, the Noisy Planet team has presented at 88 schools and reached 9,500 parents and tweens.

Noisy Planet teammates Phalla Keng and Robert Miranda-Acevedo contacted Kevin Lloyd, the school band director at Linganore High School, who asked the team to present to all of the band classes at the school—a total of 120 students. Keng and Miranda-Acevedo taught students about how we hear, what too loud means and why it's so important to protect hearing in noisy situations. They also demonstrated different types of hearing protectors band members could use, including specially designed earplugs for musicians.

When Keng and Miranda-Acevedo finally had the chance to meet Fraumeni, they asked him what he learned from writing his article for *The Lance*. "It started out as not a big deal to me," he said. "It was just a classroom project. But then the more I looked into it, the more interested I got in the topic."

In the fall, Fraumeni will attend the University of Rochester, where he is hoping to major in audio and music engineering. When asked if he would continue to be an advocate for preventing noise-induced hearing loss, he said the most critical thing to have in his major is good ears.

"As long as I'm around loud music," he added, "I'll be telling people to turn it down or at least keep it at a safe level, because I think it is the right thing to do."



NIDCD's Phalla Keng (l) and Robert Miranda-Acevedo (r) meet with Kevin Lloyd, Linganore High band director (second from l) and student Justin Fraumeni.

New Members Named to 'Council of Councils'

The Division of Program Coordination, Planning and Strategic Initiatives recently welcomed 10 new advisory council members (the Council of Councils) who will advise on DPCPSI policy and programs.



DPCPSI director Dr. James Anderson (standing, 2nd from l) welcomes new advisory council members (standing, from l) Drs. Susan Wooley, Gilbert White, James Schwob and Nancy Haigwood. Seated are (from l) Drs. Carlos Bustamante, Janice Clements and Craig McClain. Not shown are Drs. Emery Brown, Barbara Guthrie and Steven DeKosky.

Dr. Emery N. Brown is a professor of health sciences and technology and of computational neuroscience at the Massachusetts Institute of Technology and Warren M. Zapol professor of anaesthesia at Harvard Medical School. He is an anesthesiologist-statistician whose research focus is the development of signal processing algorithms to characterize how the patterns of electrical discharges from neurons in the brain represent information from the outside world.

Dr. Carlos Bustamante is a professor of genetics at Stanford University. As a population biologist, his research has provided insights into the dynamics and migration of populations and the mechanisms of evolution and natural selection.

Dr. Janice E. Clements is vice dean for faculty and professor of molecular and comparative pathobiology and neurology at Johns Hopkins University School of Medicine. Her research focuses on the molecular virology and pathogenesis of SIV/HIV in non-human primates and studies of innate immune control of lentiviruses in the CNS/regulation of miRNA-biomarkers in plasma.

Dr. Steven DeKosky serves as vice president of the University of Virginia and dean of the University of Virginia School of Medicine. His clinical research focuses on differential diagnosis, neuroimaging and genetic risks for Alzheimer's disease and trials of new medications and his basic research centers on structural and neurochemical changes in human brains in normal aging and dementia.

Dr. Barbara J. Guthrie is associate dean for academic affairs at Yale University School of Nursing and is a nationally recognized expert in culturally responsive health-related policies and programs. Her research has examined how race, gender, class, relations and environmental contexts influence adolescent females' parallel or co-initiation of substance use and sexually related behaviors.

Dr. Nancy L. Haigwood is director and senior scientist at the Oregon National Primate Research

Center and an adjunct professor in molecular microbiology and immunology at the Oregon Health Sciences University. Her research focuses on developing vaccines and therapies to combat HIV/AIDS transmission from mother to child.

Dr. Craig J. McClain is a professor of medicine, pharmacology and toxicology at the University of Louisville School of Medicine. He is an internationally distinguished clinician-scientist in the fields of gastroenterology, alcoholic liver disease, nutrition and infectious diseases including HIV/AIDS.

Dr. James Schwob is professor of anatomy & cellular biology in the Sackler School of Graduate Biomedical Sciences at Tufts University. His research focuses on the pathophysiology of human olfactory disorders and the development of experimental animal models for disease processes including regeneration after peripheral injury.

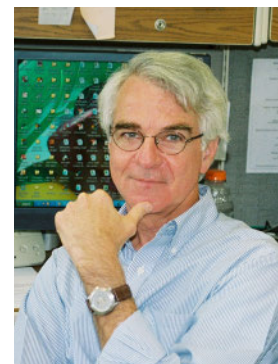
Dr. Gilbert White is executive vice president for research and director, Blood Research Institute at BloodCenter of Wisconsin. His research centers on understanding the pathways that mediate the hemostatic responses of blood platelets and using that knowledge to develop methods to manipulate those pathways, thereby controlling vascular diseases such as heart attacks and strokes.

Dr. Susan Wooley is executive director of the American School Health Association, a multidisciplinary organization working to optimize health and academic performance through effective school health strategies. An expert on health education, she has published several books, curricula and journal articles on school health and health education issues.

Snyder To Retire From NIA's Division Of Neuroscience

Dr. D. Stephen "Steve" Snyder, deputy director of NIA's Division of Neuroscience, is retiring after 23 years at NIH. He played an instrumental role in building NIA's extramural research program with a focus on fundamental neuroscience related to Alzheimer's disease and related dementias.

His research interests were wide-ranging, from the cell biological aspects of Alzheimer's disease, to neuronal and vascular stress, to aspects of



prior biology that could have implications for the development of Alzheimer's disease.

"A member of the Division of Neuroscience for more than 20 years, Steve has played a critical role in the development and growth of the Alzheimer's program," said Dr. Neil Buckholtz, division director. "His insights into the basic science of Alzheimer's and other neurological diseases have made a tremendous contribution to our efforts to understand and treat this devastating disease."

A native of Baltimore, Snyder credits the people he met during his early research and work experiences with motivating him to pursue a career in neuroscience.

"I discovered that the people I admired were the neuroscientists, that they simply had the most interesting research questions," he said. "Neuroscience is a demanding field and can be a struggle for those just starting out, but it seemed to offer a fine area in which to invest a career. I haven't changed my opinion on that."

Snyder received his B.S. in biology from Loyola College, his M.S. in cell biology from Adelphi University and his Ph.D. in pathology from Albert Einstein College of Medicine, followed by a post-doctoral fellowship in the department of neurology at the University of Tennessee Medical School. He held concurrent positions at the University of Tennessee Medical School and the VA Medical Center in Memphis from 1984 until his move to NIA in 1990.

"Neuroscience was a field just getting on its feet at that time," Snyder said. "I was elated to come to work at the headquarters of NIA. During those years we were in the very happy position of growing the program and my particular focus was on the etiology of Alzheimer's disease."

While budget constraints are now making for a more demanding research environment, Snyder said he continues to be optimistic about the future of Alzheimer's research.

"While dollars are in short supply, there is no lack of inventiveness," he said. "Somewhere out there is a 25-year-old working on the next big thing, and in a few years, it will start a wave of experimentation and advances in our search for therapies to treat dementia."

Snyder is also optimistic about his upcoming move to Baton Rouge, La., with his wife Elaine. While the primary draw is proximity to his young grandchildren, art classes and opportunities for mentoring and advising young scientists are also in his future.—Peggy Vaughn

Morris Named 2012 NIH Engineer of the Year

John Morris, lead project manager for the new National Cancer Institute Shady Grove facility, has been awarded NIH's Federal Engineer of the Year Award for 2012. Sponsored by the National Society of Professional Engineers, the award recognizes his leadership in planning and building the new facility that consolidates most of NCI's office space.

The 574,000-square-foot facility is built to accommodate approximately 2,450 staff members and provides expanded data and computing capabilities, with two 4,000-square-foot data centers. Other features include a cafeteria, fitness center, conference center, meeting rooms, high-density file storage space, a convenience store, credit union and federally mandated security features.

Morris's contributions began in 2008, when plans for a new location were forming. Among the goals were to provide greater access to natural light throughout the building and encourage opportunities for walking and physical activity, including a fitness center and space for showers and lockers.

Another priority was to construct a "green" building to reduce energy consumption, use resources more efficiently and provide a healthier work environment. NCI Shady Grove includes a "daylight harvesting system" that ties the lighting level inside the building to the amount of natural light. This reduces need for overhead lighting while lowering the building's energy load. Automated shades also adjust, based on time of day and the sun's position. Other features include a roof with plants and outdoor green space.

"Bringing nearly 30 years of experience to the NCI Shady Grove project, John guided the process from plans on paper all the way through to completion of the building," said Daryl Paunil, director of NCI's Office of Space and Facilities Management. "His thoughtful approach and personality were the right fit from the beginning."

Morris said one of the most satisfying outcomes was that the construction schedule was on time from groundbreaking to completion. "I have a lot of pride about NCI Shady Grove," he said. "It's a beautiful building with a very impressive entrance for NCI offices. It hits me every day—wow, this is a beautiful building."—Rhonda DeJoice



John Morris (r), 2012 NIH Engineer of the Year, with Daryl Paunil, director of NCI's Office of Space and Facilities Management; below, NCI Shady Grove in Rockville, Md.



31st Camp Fantastic BBQ a Success

PHOTOS: ERNIE BRANSON, BELLE WARING

On June 11, the NIH Recreation & Welfare Association hosted the 31st Camp Fantastic BBQ, which raises funds for a weeklong camping trip in August for pediatric cancer patients from the Clinical Center and other hospitals.

According to R&W President Randy Schools, the barbecue was the first fundraiser the camp ever held; this year's version raised more than \$6,000. "We got lots of nice comments," he said, "and it was fun to see NIH staff having fun."

The food this year came from High Point Catering of Clarksburg, Md. R&W staffer Kallie Wasserman coordinated a number of games including Wheel of Fortune, putt-putt golf and Beaker Pong. Said Schools, "The games are fun and have a lot of participation. Vendors design their own."

The band Streetlife entertained at the lunch; they are staples of the celebration almost every year and play popular hits from years gone by.



Funnel cakes were available for dessert at the picnic.



Above Streetlife bassist Dr. Paul Scimonelli (r) handles a duet with Dave Brown, chief executive officer of Special Love Inc., which sponsors Camp Fantastic. At right, barbecue attendees fill out raffle tickets, making them eligible for such prizes as movie tickets and Starbucks gift cards. Below, Allison Adams-McLean of the Clinical Center plays Beaker Pong as Steven Wein of Fisher Scientific looks on.



Above, trying her hand at putt-putt golf is Cathy Troutman, a management analyst at NHLBI. At right, Dr. Richard Wyatt (r) of the Office of Intramural Research looks forward to a BBQ sandwich being served by NIH'er Nick Kovacs. Below at left, Streetlife band belts out chart-toppers of yesteryear; at right, managing, with enthusiasm, the Wheel of Fortune is Karen Leake from the NIH Federal Credit Union.

