



ABOVE • NSO musicians visit NIH for fourth time in a year; see p. 5.

# nih record

*'Ambitious, But Realistic'*

## Bold 12-Year Vision for 'BRAIN' Embraced at ACD

By Carla Garnett

Just more than a year after President Obama announced that NIH would undertake an initiative essentially to revolutionize our understanding of the brain, NIH director Dr. Francis Collins received what he called “this bold, multi-year plan about how this dream of understanding how the circuits in the brain actually work might come true.” A working group of the advisory committee to the NIH director (ACD) formally presented “BRAIN 2025: A Scientific Vision” to the entire ACD at its June 5 meeting. The committee voted unanimously to approve the report.

Collins immediately accepted the vision set forth, saying it would be used to guide NIH’s future investments in the initiative. In total, the plan calls for a sustained commitment of approximately \$4.5 billion in new federal spending over 12 years.

“The hope is that this becomes a hub of activity with many spinoffs into disease-

SEE ACD MEETING, PAGE 6



Dr. Cori Bargmann delivers BRAIN initiative report at ACD meeting on June 5.

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Dr. Ulrike Heberlein

*Fruit Fly Walks into a Lab*

### Heberlein Reviews Fly Model in Alcohol Research

By Belle Waring

Did you hear about the fruit flies that got so drunk they couldn’t climb the walls?

“That’s *Drosophila melanogaster*,” said

Dr. Ulrike Heberlein in her recent Wednesday Afternoon Lecture “*Drosophila* as a Model for Alcoholism: An Interplay of Nature and Nurture.” Heberlein, who spoke in Masur Auditorium, is scientific director and lab head at the Howard Hughes Medical Institute, Janelia Farm Research Campus.

Human studies are difficult and costly, but widely used rodent models have provided important insights into the mechanisms underlying the effects of alcohol. Why use

SEE HEBERLEIN, PAGE 8



Happy hikers along the 3.25-mile NIH loop

Take a Hike

### Annual Walk/Fun Run Fosters Fitness

By Dana Steinberg

Hippocrates once said, “Walking is man’s best medicine.” NIH’ers got a healthy dose of it on June 5 during the 7th annual Take a Hike Day.

As the whistle sounded for runners, then walkers, to begin the walk/fun run, storm clouds parted and the sun poked through an overcast sky. This year, some 1,200 employees from

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The NIH Record is published biweekly at Bethesda, MD by the Editorial Operations Branch, Office of Communications and Public Liaison, for the information of employees of the National Institutes of Health, Department of Health and Human Services. The content is reprintable without permission. Pictures may be available upon request. Use of funds for printing this periodical has been approved by the director of the Office of Management and Budget through September 30, 2014.

To receive alerts to our latest issue, send an email to [listserv@list.nih.gov](mailto:listserv@list.nih.gov) with the words "Subscribe NIHRECORD" in the message body.

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NIH...Turning Discovery Into Health

## briefs

### Graduate & Professional School Fair Set, July 16

The NIH Graduate and Professional School Fair will be held on Wednesday, July 16 from 9 a.m. to 3:30 p.m. at 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 step in their careers by exploring educational programs leading to the Ph.D., M.D., D.D.S., M.D./Ph.D. and other graduate and professional degrees. Exhibits will be open from 10 a.m. to 2:15 p.m. Find a list of participating institutions planning to attend and registration information at [https://www.training.nih.gov/gp\\_fair](https://www.training.nih.gov/gp_fair).

### Symposium Marks MSTP 50th Anniversary

A fundamental challenge in medicine is translating basic research discoveries into new treatments, cures and other advances in patient care. For the past 50 years, the NIGMS Medical Scientist Training Program (MSTP) has been preparing physician-scientists to help meet this challenge.

The MSTP, which supports research training in both basic science and clinical research leading to the combined M.D.-Ph.D. (or other dual) degree, is marking its 50th anniversary with a symposium on Thursday, July 17, from 8 a.m. to noon in Masur Auditorium, Bldg. 10. Starting in 1964 with only 3 institutions and a handful of supported students, the program has grown to 45 institutions and more than 900 trainees per year.

At the symposium, current and former MSTP trainees will discuss their research as well as the impact of the program on their careers. Their presentations will cover a broad range of topics, including the biological basis of a rare genetic disorder known as Ogden syndrome, the development of novel molecular tools to study malarial parasites and outcomes research aimed at improving the treatment and care of people with coronary artery disease.

The symposium will also feature remarks by NIH director Dr. Francis Collins and Association of American Medical Colleges president and CEO Dr. Darrell Kirch. Dr. Clifford Harding, MSTP director at Case Western Reserve University and a former program participant, will provide historical recollections on the MSTP. The event will conclude with a discussion led by Dr. Sherry Mills, director of the NIH Office of Extramural Programs, about an advisory committee to the NIH director report on training physician-scientists.

For details and registration visit <http://meetings.nigms.nih.gov/index.cfm?event=home&ID=18184>.

### New NIH Intramural Research Records Schedule

The NIH Office of Management Assessment (OMA) and Office of Intramural Research (OIR) have redesigned the NIH Intramural Research Records Schedule to better align policy with intramural research practices. OMA and OIR formed a trans-NIH working group to examine the management of intramural research records and data. The group included more than 20 Intramural Research Program administrators, biomedical researchers, clinical care employees and compliance/oversight staff who provided input and feedback. The effort resulted in streamlining of research record retention schedules, reducing the number of schedule items from approximately 95 to 12. These items are focused on both intramural research and clinical care records. The new schedule also includes criteria for evaluating the historical significance of records. The updates to the schedule will facilitate better understanding and implementation by program staff supporting better preservation of research records.

OMA is currently conducting training and information sessions to IC record liaisons to support the roll-out of the new schedule. A listing of NIH IC record liaisons can be found at <http://oma.od.nih.gov/public/Lists/AllDMSContacts/Records%20Liaisons.aspx>. If you have any questions about the new records schedule, contact Kim Johnson, NIH records officer, at [johnsonk4@mail.nih.gov](mailto:johnsonk4@mail.nih.gov) or (301) 496-2463.



### Volkow Receives Nathan B. Eddy Award

*Dr. Nora Volkow (c), director of the National Institute on Drug Abuse, received the Nathan B. Eddy Award from the College on Problems of Drug Dependence (CPDD) in San Juan, Puerto Rico on June 15. The award is named after a pioneer in the field of drug dependence and acknowledges outstanding research efforts that have advanced our knowledge of drug dependence. Volkow delivered a keynote address on the state of addiction research at the annual meeting of the CPDD, which featured 800 presentations by scientists from the United States and other nations, many of them supported by grants from NIDA. Shown with Volkow are NIDA grantee Dr. Anna Rose Childress and CPDD president Dr. Frank Vocci.*

nih record



*Structural problems have closed 6100 Exec. Blvd.*

## Structural Fault Closes Off-Campus Bldg.

Structural damage that occurred suddenly on May 16 to the foundation of an NIH leased facility at 6100 Executive Blvd. has closed the building indefinitely to NIH tenants from several institutes and centers. No one was injured in the incident.

At about 10 a.m. that morning, Dr. David Murray, director of NIH's Office of Disease Prevention, was sitting in his office on the second floor when "suddenly, the building shook quite noticeably. I thought it was an earthquake. It only lasted for a few seconds. I heard a series of loud, crashing noises above me."

Murray walked to the outer suite of ODP's offices and discovered "no one else was disturbed, or aware of it—maybe a little, but not a great deal."

He noticed that some people were leaving the building, but security staff at 6100 soon told occupants that they could return to the building.

"It was only then that I noticed that the exterior wall of the building had a big crack in it that hadn't been there before," Murray said. He then saw staff in hard hats gathering outside the building, looking upward.

"That's when we knew that something had happened," he said. Word came that the building was to be evacuated, but no alarm sounded.

Murray had given his staff permission to leave for the day if they weren't comfortable remain-

ing. He stayed for several more hours, learning that other people on his side of the building (west side) had also heard noises, at least as far up as the fifth floor.

Murray said NIH'ers who work at 6100 were allowed into their offices to retrieve personal belongings, laptops and files for about a week after the incident. "I went back three or four times," he said. "Then Montgomery County stepped in and closed the building, and that was that."

Most of Murray's staff has telework capacity, he noted, and one of ODP's contractors has space to accommodate employees. "We have been able to manage. Lots of people offered us space—they were very generous in accommodating us—for people who needed NIH IT connections."

Murray was informed that a steel column situated between his office and a neighboring office was at the root of the problem. Engineers surmise that water damage to the column's foundation had eroded it, causing it to buckle.

"It only fell a few inches, but a lot of weight was involved," he said.

"We may go back [to 6100], or we may be forced to relocate."

Displaced tenants at 6100 total 167 people from the Office of the Director (including ODP staff), 318 people from NICHD and 11 from the Clinical Center. All building occupants were invited to a July 1 meeting at which possible re-occupation of 6100 was the main agenda item.

The building management company is Axent Realty Group, which is the agent for Stephen A. Goldberg Co. In a June 6 letter to NIH's Office of Research Facilities, a Goldberg representative said that 6100 could be repaired as early as the July 4 weekend.—Rich McManus



## AAOS Representatives Visit NIH, Learn About Research

*To better understand NIAMS research on musculoskeletal conditions, 32 patients, family members and staff representing the American Academy of Orthopaedic Surgeons (AAOS) recently visited the NIH campus before AAOS's 2014 Research Capitol Hill Days. During Capitol Hill Days, patients, physicians and researchers meet with members of Congress to highlight recent advances and request continued support for musculoskeletal research. NIAMS director Dr. Stephen Katz (seated, 6th from left) oriented the group by giving an overview of the state of NIH and NIAMS. Dr. Timothy Bhattacharyya from the NIAMS intramural program then spoke about his research efforts to improve outcomes for orthopaedic patients, and Dr. Joan McGowan, director of the NIAMS Division of Musculoskeletal Diseases, described the many NIAMS-funded musculoskeletal research projects currently under way across the United States. The group then toured the Clinical Center and visited the movement analysis lab, where staff described the various types of research that help patients overcome mobility and movement problems.*



## HIKE

CONTINUED FROM PAGE 1

**Above, from l:**  
NINDS participants sported their own event T-shirts.

Employees supported one another in more ways than one along the trail.

Participants could walk or run the route—their choice.

PHOTOS: BILL BRANSON, ERNIE BRANSON, MAGGIE BARTLETT

nearly every institute and center registered to walk or jog the 3.25-mile loop around the campus perimeter or a route at one of several NIH off-campus locations.

Traveling 3.25 miles on foot is the equivalent of taking about 6,300 steps. But time flies when you're walking or running with your colleagues; many welcomed the break in their busy day.

"I do the walk every year. I've only missed one," said NCI's Renee Walker after crossing the finish line. "Glad the weather held out."

NIDCR's Ellis Tibbs participated in the hike for the first time. Although he works out regularly, on finishing he said, "The hike was more hilly than I expected. I'm feeling it in my hamstrings."

NIH'ers of all fitness levels participated in the event, which aims to promote a more health-conscious workforce. For colleagues too busy to escape their offices, Tibbs recommended, "Even if you're not [regularly] active, stretch in your office."

Take a Hike Day opened with a warm-up session led by R&W fitness instructor Ana Jenkins. Then throngs of employees took to the path. OD claimed bragging rights for most participants. Several other ICs had a large number of registrants, including NINDS, NCI, NIDA, NIAAA, NIMH and NIAID.

The event carried into the Twittersphere, at #TakeaHikeNIH. Fogarty's Anna Pruettt Ellis tweeted, "Made it all the way around campus, just what I needed before bday cake!" And Harshraj Leuva, an NHLBI exchange scholar, tweeted an image from a pedometer app showing the run would take him about 26 minutes, given his average running time.

Leuva tries to run at least twice a week, about 5 miles at a time. "I am slowly pushing to 15K, and maybe a half marathon too," he said. He encourages everyone to incorporate physical activity in their daily routine.

"I think physical activity of any kind is very important, in any sport, whether running, biking, rock climbing or dancing," said Leuva. "It keeps you sharp. When you challenge yourself a little bit, I think you learn to focus."

Several ICs sponsored water stations along the walk. Volunteers kept hikers hydrated and cheered them to the finish line. As runners and walkers approached the end, R&W President Randy Schools congratulated them for completing the course.

"The best part of the event is seeing the smiles at the end," said Schools. "Take a Hike Day allows NIH staff to focus on their fitness, learn about the value of exercise and perhaps meet a new friend."

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



**Above, high spirits were common along the route. At right, fitness instructor Ana Jenkins warms up participants on the Bldg. 1 lawn.**





*NICHD's Dr. Alan Guttmacher (l) and Dr. Cathy Spong discuss the Human Placenta Project.*

*'Platform of Life'*

## **NICHD Launches Human Placenta Project**

*By Kerri Childress*

"The placenta is the Rodney Dangerfield of organs—it gets no respect," said Dr. Diana Bianchi, executive director, Mother Infant Research Institute and vice chair for research and academic affairs, Tufts University School of Medicine. Although she said it jokingly, her sentiment was sincere and shared by many of the nearly 80 researchers who attended the Human Placenta Project workshop held recently by NICHD.

The occasion was the first time that scientists from different fields marshalled forces to better understand the least studied, and arguably one of the most important, of all human organs—the placenta. Their goal? To improve ways to provide real-time assessment of placental development and function in hopes of finding interventions to improve the health of mothers and their children.

"Throughout fetal development, the placenta functions both as a unique agent of human symbiosis and as the fetal renal, cardiac, respiratory, hepatic, gastrointestinal, endocrine and immune systems. Yet, our understanding of the human placenta is limited," said NICHD director Dr. Alan Guttmacher. "This imbalance between level of biological importance and level of our current understanding presents us with a remarkable scientific opportunity."

To augment expertise from the OB-GYN and pediatric arenas, NICHD also invited bioengineers, imaging specialists and data scientists. "Bringing together experts from many different disciplines will give us important information on the tools and methods available to study the placenta in real time—something that has not been done in the past," said Dr. Cathy Spong, director of NICHD's Division of Extramural Research.

In fact, three objectives of the workshop revolved around the topic of how to perform research without harming the mother, placenta or baby, including how best to: improve current methods and develop new technologies for real-time assessment of placental development; apply these technologies to understand and monitor placental development and function in normal and abnormal pregnancies; and develop and evaluate non-invasive markers for prediction of adverse pregnancy outcomes.

"It's a perfect time for this research to be happening," said Dr. Joe Leigh Simpson, senior vice president for research and global programs, March of Dimes Foundation. "Ten to 15 years ago, we didn't have the technology. Now we do and it will get better as we move forward. These dazzling advancements will make all the difference in our understanding of the placenta in real time and how it impacts health."

Although the "what" to study and the "how" to do it are important, researchers agreed that the "why" is what will resonate for other scientists and the public at large. From understanding the placenta's role in long-term health and disease to developing interventions to prevent abnormal placental development—and hence improve pregnancy outcomes—scientists believe collaborative research can unlock new scientific and technological advances.

"It's about collaboration. Collaboration with other NIH institutes, collaboration with our universities, collaboration with industry. If this were easy, it would already have been done. But is it worth it? Absolutely. As Dr. Burton [Graham Burton, director, Centre for Trophoblast Research at Cambridge] said, "The placenta is the platform of life,"" said Guttmacher. 🗨️



## **NSO Trio Entertains in CRC Atrium**

*The National Symphony Orchestra Violin and Piano Trio played a free concert June 17 in the atrium of the Clinical Research Center. It was the NSO's fourth visit to the hospital as part of the orchestra's Sound Health Initiative. Performing a 50-minute program that included works by Spohr and Shostakovich were (from l) Zino Bogachek, violin; Natasha Bogachek, violin; and Myriam Teie, piano. The audience included NIH director Dr. Francis Collins and CC director Dr. John Gallin, who welcomed the performers, patients, staff and visitors. The event was co-presented by the Foundation for Advanced Education in the Sciences and the Clinical Center.*

PHOTO: MARIA MASLENNIKOV



## ACD MEETING

CONTINUED FROM PAGE 1

**Above, from l:**  
During a break in the 108th meeting of the advisory committee to the NIH director, ACD members Dr. David Ginsburg (l), Dr. Russ Altman and Dr. Harlan Krumholz chat.

NIH director Dr. Francis Collins enjoys a light moment at the meeting.

New ACD member Dr. Lisa Cooper raises a question, following the BRAIN initiative report.

**Below:**  
The ACD convenes in a Bldg. 31 conference room for its biannual meeting.

PHOTOS: BILL BRANSON, ERNIE BRANSON

specific research accelerating the pace of translation by providing this kind of new set of technologies and opportunities,” said Collins, emphasizing that the initiative’s efforts and resources should complement NIH’s \$5.5 billion annual investment in basic, translational and clinical neuroscience research. “This should be very synergistic. We would not want this initiative to be off in a corner somewhere. It should be rubbing shoulders with—and exchanging ideas on a daily basis with—the disease-specific efforts.”

### Not ‘Neuroscience as Usual’

ACD member and working group cochair Dr. Cori Bargmann of Rockefeller University delivered a slide show overview of the working group’s recommended strategy for tackling the Brain Research through Advancing Innovative Neurotechnologies initiative.

Emphasizing the interdisciplinary nature of the plan, she pointed out, “Neurotechnologies is the ‘N’ in BRAIN. It’s had a specific technology bias from the outset. There’s a realization that neuroscience as usual will not be sufficient to solve these problems. Therefore we must build on other areas such as genetics, molecular biology, physics and engineering, informatics, nanoscience, chemistry and mathematics.”

BRAIN’s goal is to map the circuits of the brain, measure the fluctuating patterns of electrical and chemical activity flowing within those circuits and understand how their interplay creates our unique cognitive and behavioral capabilities. The working group focused there because it “represents a critical hole in our understanding of brain processes,” Bargmann explained.

The working group’s interim report released last September identified 9 high-priority research areas; the final report honed those areas to 7. The first 5 years will emphasize technology development; the second 5 years will focus on discovery-driven science, using the newly developed tech tools to understand critical functions of how the brain works.

The group also included numerous concrete short-term and long-term deliverables, sustained budget projections for the plan over the next 12 years and a vision for how brain research could potentially be accelerated decades into the future.

### Report Draws Positive Reception

Collins praised the presentation, calling the full 135-page report, which had been distributed weeks earlier to ACD members, “an absolute joy to read, because it is so clearly and elegantly articulated.”

Working group cochair Dr. Bill Newsome of Stanford University, attending via phone from Norway, described the process leading to the recommendations.

“This has been a fascinating journey,” he said. “It’s been exhilarating at times when you do feel like you’re really looking around the corner and we can really see what’s coming. It has also been very sobering at times, when we realize how little we actually know about the brain, and how much work there is to do. In the end we feel like we did our intellectual homework...[the report]





*ACD meeting attendees included (from l) Dr. Peter MacLeish, NIBIB director Dr. Roderic Pettigrew and Dr. Ian Lipkin.*

presents an ambitious vision that calls for the very best that we have to give as a nation on some of the toughest problems that nature has to offer. It is ambitious, but we also feel like it's realistic... We won't reach all of these goals. Some of the goals are likely to change as we go along. We'll realize there are new opportunities that we hadn't even anticipated at the beginning, but we know we can reach a lot of these goals with proper support and with proper engagement of a broad scientific community."

Around the table, ACD members unanimously applauded.

"I think this is a *tour de force*," said long-time member Dr. Reed Tuckson of Tuckson Health Connections. "It's breathtakingly refreshing to have such a clear, transparent analysis of how difficult choices were made, why they were made... This should be a model."

New member Dr. Huda Akil of the University of Michigan's Molecular and Behavioral Neuroscience Institute said, "I've reviewed a lot of reports and this is the only one that makes my heart go pitter patter. It's just amazing. As a working neuroscientist, it's as close to perfection as I have seen... I want to address the clinical aspect. To my mind the clinical aspect isn't just an extension of this effort—it demands this effort... Translation demands this level of analysis."

Details and the full BRAIN report are online at [www.nih.gov/science/brain/index.htm](http://www.nih.gov/science/brain/index.htm).

### Action-Packed Last 6 Months

In his director's report, Collins talked about several significant NIH events since the ACD last came together in December:

- ❑ Recruitment of several "superb" senior staff members, including NIAAA director Dr. George Koob, and NIH chief officer for scientific workforce diversity Dr. Hannah Valentine and NIH associate director for data science Dr. Philip Bourne. (Both positions are new and prompted

by ACD recommendations; Valentine and Bourne each addressed the ACD later during the meeting).

- ❑ The annual Leadership Forum—discussion covered potential enhancements to the peer review system and the future of the Intramural Research Program. (NIH deputy director for intramural research Dr. Michael Gottesman presented an IRP review on day 2 of the ACD meeting.)

- ❑ Campus special occasions such as visits by the Dalai Lama and U.S. Sen. Barbara Mikulski and dedication of the Porter Neuroscience Research Center.

- ❑ Departure of Kathleen Sebelius as head of HHS and confirmation of new department Secretary Sylvia Burwell, who toured NIH last August as director of the Office of Management and Budget.

In addition, Collins also welcomed five new ACD members: Akil, Dr. Lisa Cooper of the Johns Hopkins Center to Eliminate Cardiovascular Health Disparities, Dr. Harlan Krumholz of Yale School of Medicine, Dr. Richard Lifton of Yale Center for Genome Analysis and Dr. Eric Goosby of the University of California, San Francisco.

Over the course of a day and a half, the ACD also discussed continuing concern over predicted flat and decreased U.S. funding of biomedical research; the growing problem of young investigators leaving science to pursue other, more lucrative fields; the science community-wide need to emphasize reproducibility of research results; updates from the HeLa and physician-scientist workforce working groups; and AIDS research priorities.

Public sessions of the ACD meeting are archived at <http://videocast.nih.gov/PastEvents.asp>. 📺



### NINR Director Delivers Keynote at Gerontology Conference

At Brigham Young University's 24th annual Russell B. Clark Gerontology Conference, keynote speaker and NINR director Dr. Patricia Grady spoke to an audience of interdisciplinary students, faculty and community members about gerontological nursing research.

"Advances in medicine and public health have resulted in longer lifespans—by 2030, an estimated 72 million people, 20 percent of the total population, will be 65 and older," she said. "This also means more people are living with chronic conditions. Through research, nurse scientists are discovering ways to make a significant difference in the health and quality of life of older adults."

In her presentation, "State of the Science for the Aging Population," Grady described recent developments in gerontological nursing research by highlighting NINR-supported projects including:

- The development of an inexpensive, non-wearable infrared motion sensor, which includes passive motion detectors, hand-grip sensors, stove monitors and bed sensors—all of which feed information to health care providers via a web-based interface. The sensor system monitors pulse, breathing and restlessness while sleeping and alerts health care providers to potential illness or functional decline so that they can intervene early. "This technology holds the potential to help older adults stay independent and active and to remain in their homes longer," Grady explained.

- The multisite Advanced Cognitive Training for Independent and Vital Elderly (ACTIVE), which tested the longevity of training to improve cognitive abilities in older people. "The results suggest that some forms of training can help older adults maintain their cognitive functioning," Grady said.

"By building the evidence base for interventions that are culturally appropriate, accessible and effective in diverse older adults, we can advance health care and improve health outcomes for all of our citizens," she concluded.

## HEBERLEIN

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*“Drosophila was the model we decided to use about 20 years ago to try to understand both the genetics and the physiology related to alcohol,” Heberlein said, “and at the time it was a pretty crazy idea. But we took on the challenge.”*

PHOTOS: BILL BRANSON

fruit flies to study alcohol?

*“Drosophila was the model we decided to use about 20 years ago to try to understand both the genetics and the physiology related to alcohol,” Heberlein said, “and at the time it was a pretty crazy idea. But we took on the challenge.”*

She reminded the audience that “flies are the premier model organism for genetics due to the work of T.H. Morgan and colleagues at Columbia in the early 1900s. Much of what we know about genetics comes from work on *Drosophila*. Flies are easy, fairly inexpensive to raise in the laboratory in large numbers...and the generation time is short.”

For decades scientists have used *Drosophila* to study genetics and illnesses such as Parkinson’s, Huntington’s and Alzheimer’s disease.

You have probably met this red-eyed critter with its loopy flight pattern and its thing for ripe fruit. In the presence of yeast, sugars are fermented to produce ethanol, the drinkable alcohol, for millennia one of the most widely used and abused drugs in the world. The fruit fly is not immune to its charms.

We and *Drosophila* have more in common than a taste for tangy peaches. About 75 percent of known human disease genes have a recognizable match in the fruit fly genome, first sequenced in 2000. Most molecular, cellular and neurobiological processes are conserved—carried over—between the fly and mammals.

Interestingly, the fruit fly has a “fat body,” thought to be homologous to the human liver (similar in construction and evolutionary origin) where most of the ethanol is metabolized.

In humans, alcohol use disorders are a big problem, Heberlein said, affecting more than 17 million Americans, around 8.5 percent of people in the U.S. “And not just as individuals; there are many, many innocent people, bystanders, killed or maimed or injured as a consequence of some people drinking too much.”

It is also an expensive problem. The most recent estimated annual cost of alcoholism to the U.S. economy is “about \$200 billion,” she said.

And it’s tricky to study. “Alcohol is a very non-specific drug,” she continued. Other drugs of abuse have a specific receptor in the brain and act in micro concentrations. Yet alcohol has multiple targets in the brain and acts in fairly high concentrations.

“The challenge has been to figure out how [alcohol] leads to changes in the brain that ultimately lead to addiction.”

As in all addictions and many other diseases, the genetics are complex: “Genetics contributes approximately 50 percent of the risk factors; the other 50 percent comes from environmental interactions that are equally complex,” Heberlein noted. “Alcoholism is likely a very old problem; when the first primates walked the earth they consumed fruits containing alcohol.”

During acute ethanol exposure, how did the flies behave?

- Adult flies showed locomotor hyperactivity followed by motor incoordination and sedation. They flew around in a tizzy until they got too sloppy to climb.

- In adult flies, repeated ethanol exposure induced either tolerance or sensitization. Tolerance means an increasing dose is required to get the same effect; in sensitization, a lower dose has an increased effect. Both effects are evidence of worsening disease.

- Chronic exposure induced alcohol dependence, withdrawal symptoms and relapse-like behavior.

- Flies also exhibited more complex addiction-like behavior, including a lasting attraction for a cue that predicts ethanol intoxication and a preference for consuming ethanol-containing food even if it’s unpalatable.

Heberlein also described an experiment to distinguish genetic from environmental factors that contribute to alcohol-induced behaviors. Her team focused on neuropeptide F (NPF) signaling; NPF is the *Drosophila* homologue of neuropeptide Y in humans. (Neuropeptides are molecules that transmit information in brain tissue.)

Her team compared brains of males rejected by females to males who had mated.

- Rejected males had low levels of NPF and high ethanol preference.

- Mated males had high levels of NPF and low ethanol preference.

She saw a causal relationship.

“We know rejection [of males by females], through some mechanism that we would like to get our hands on, reduces the level of NPF and that leads to increase in ethanol consumption. Mating, on the other hand, increases the level of NPF and this reduces ethanol preference and consumption.

“So this is an example, I think, where we now

have encountered a mediator between a social experience and a drinking behavior; where this mediator is sensitive to the social experience and it's causally related to the changes in behavior that occur after the social experience."

Here's the validity of using *Drosophila* as a model: "You can use the power of genetics in flies to do unbiased screens," she said, "end up with a gene that you have no clue what it does and find a potential pre-clinical rat model for alcoholism with an FDA-approved drug. We're starting to understand the molecular mechanism through which experiences in the environment affect ethanol consumption."

The videocast is archived at <http://videocast.nih.gov/summary.asp?Live=14146&bhcp=1>.

### Lai To Head CSR Review Group

Dr. Patrick Lai has been named chief of the immunology integrated review group (IRG) at the Center for Scientific Review. He was most recently scientific reviewer officer for CSR's immunology and host defense study section.

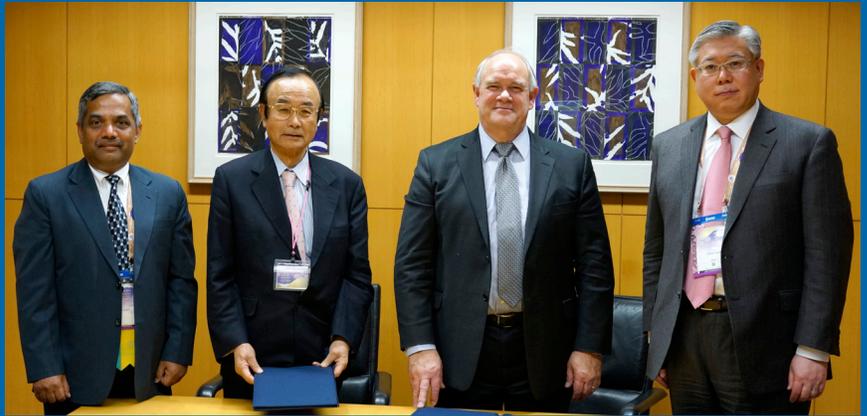


"Patrick has been a mainstay of the immunology IRG for many years," said Dr. Seymour Garte, director of CSR's Division of Physiological and Pathological Sciences. "He has served as acting chief on numerous occasions and his scientific background and experience made him the top candidate for the job."

Lai will oversee 10 study sections, which review NIH grant applications that seek better understandings of the interactions, mechanisms and evolution of the immune system and its role in the prevention and treatment of disease.

Lai earned his Ph.D. in virology and immunology from the University of Western Australia. After postdoctoral work in Ottawa, London and Zurich, he moved to the University of Nebraska Medical Center in Omaha, where he was an assistant professor. He conducted research on immune responses and the molecular biology of Epstein-Barr virus, human immunodeficiency virus and Born disease virus.

He later became director of the Molecular Biology and Biotechnology Program and chairman of the bioscience department at Salem International University in Salem, W.Va. During his academic career, Lai published 47 articles, 10 chapters in books and holds 6 U.S. and international patents.



Participating in the EOI signing are (from l) Dr. Gyan "John" Prakash, director, NEI Office of International Program Activities; Dr. Yozo Miyake, former director of NISO and chairman of board of directors, Aichi Medical University; Dr. Paul Sieving, NEI director; and Dr. Takeshi Iwata, director, NISO.

### NEI, Japanese Institute Begin Collaboration

Dr. Paul Sieving, director of the National Eye Institute, and officials of the National Institute of Sensory Organs (NISO), Tokyo Medical Center, met recently to establish a formal collaborative international research program focused on studying eye diseases and ophthalmic genetics. The signing of an expression of interest (EOI), which is a culmination of numerous discussions, took place at the recent World Ophthalmology Congress in Tokyo.

"The EOI will allow both sides to discuss and plan collaborative research programs of mutual interest," said Dr. Gyan "John" Prakash, director of the Office of International Program Activities at NEI, who helped initiate the program. "Extending our research collaborations on an international scale will advance our understanding of the biology of eye diseases, including genes that may be causing age-related eye complications in people of Asian ancestry." Dr. Takeshi Iwata, director of NISO and a former NEI research fellow, is leading the Japanese efforts.

In addition to genetics research, NEI and Japanese researchers plan to conduct scientific exchanges and pursue joint intellectual property rights for targeted therapies for various eye diseases.

### Two NIDDK Scientists Honored

NIDDK senior investigators Dr. Kenneth Jacobson (r) and Dr. Jurgen Wess (l) flank Dr. Richard R. Neubig, president of the American Society for Pharmacology and Experimental Therapeutics (ASPET) at an awards ceremony recently. Jacobson received the ASPET 2014 Goodman & Gilman Award in Drug Receptor Pharmacology. The award recognizes outstanding research in pharmacology of biological receptors



that could provide a better understanding of the mechanisms of biological processes and provide the basis for drug development. Wess received the 2014 Pharmacia-ASPET Award for Experimental Therapeutics. It recognizes outstanding research in pharmacology and experimental therapeutics, basic laboratory or clinical research that has had or could have a major impact on the pharmacological treatment of disease.

PHOTO: ACTIONFOTO



*NIMHD's Dr. Eddie Reed, an award-winning physician and internationally recognized cancer researcher, died May 28.*

### **NIMHD Mourns Clinical Director Reed**

Dr. Eddie Reed, an award-winning physician and internationally recognized cancer researcher at NIH, died May 28 at age 60 in Bethesda of liver cancer.

Reed had been clinical director at NIMHD since January 2013. He oversaw a combination of epidemiological, clinical and laboratory-based studies. He was building a multi- and inter-disciplinary research program geared to translating basic research into clinical trials and ultimately, interventions. He led the NIMHD effort in enhancing the recruitment and retention of minorities and other underserved populations in clinical trials.

“Dr. Reed’s critical work in anticancer chemotherapy has benefitted so many lives,” said NIMHD acting director Dr. Yvonne Maddox. “Throughout his distinguished career, Dr. Reed was committed to overcoming the challenges of health disparities among underserved populations, particularly with regard to access to care and recruitment in clinical trials.”

Prior to joining NIMHD, Reed served as professor of oncologic sciences and Abraham Mitchell distinguished investigator at the University of South Alabama’s Mitchell Cancer Institute, where he worked closely with the state of Alabama on life-saving cancer screening and control programs. At NCI, he previously served as a tenured senior investigator in the Division of Cancer Treatment, chief of the Clinical Pharmacology Branch (the first African-American branch chief at NCI) and chief of the Ovarian Cancer and Metastatic Prostate Cancer Clinic in the Division of Clinical Science. Reed also was director of the Mary Babb Randolph Cancer Center at West Virginia University and director of the Division of Cancer Prevention and Control at the Centers for Disease Control and Prevention.

Reed’s clinical research primarily focused on DNA damage and repair in cancer cells in response to pharmacological anticancer agents. He conducted more than four dozen phase I or phase II clinical trials of these agents and received two Public Health Service Commendation Medals for his work on the clinical development of the powerful anticancer agent paclitaxel. He also collaborated on numerous public health cancer prevention, screening and control programs, many of which were focused on reducing health disparities.

“Dr. Reed was an incredible researcher and clinician,” said NIMHD deputy director Dr. Joyce Hunt-

er. “His contributions to cancer research are truly immeasurable.”

Born in Hughes, Ark., Reed received his undergraduate degree from Philander Smith College in Little Rock, Ark., and his medical degree from Yale University School of Medicine. He completed his internship and residency at Stanford University and an oncology fellowship at NCI. He was board-certified in internal medicine and had been listed as a Top Doctor by *U.S. News & World Report*. Reed served on the Institute of Medicine’s National Cancer Policy Forum from 2005-2008 and the National Advisory Council on Minority Health and Health Disparities.

He is survived by his wife, Dr. Meenakshi Reed.

### **Murphy To Direct Division of Comparative Medicine**



Dr. Stephanie J. Murphy has been named director, Division of Comparative Medicine (DCM) within the Division of Program Coordination, Planning, and Strategic Initiatives. She comes from Oregon Health & Science University, where she was a professor of anesthesiology & perioperative medicine.

Murphy received her V.M.D. and Ph.D. from the University of Pennsylvania. She completed a postdoctoral fellowship in the department of comparative medicine at Johns Hopkins and is a diplomate of the American College of Laboratory Animal Medicine.

After completing her training, Murphy joined the department of anesthesiology & critical care medicine at Johns Hopkins as an assistant professor. In 2003, she joined the research faculty at OHSU. Murphy has published numerous articles, reviews and book chapters related to her research and clinical interests. She has secured NIH and other funding for the past 17 years to support her research on sex differences and sex steroids in stroke.

As a board-certified laboratory animal veterinarian, Murphy brings a unique perspective to her new assignment. “DCM’s research supports animal models and resources, so I’d like to think that my training brings an added layer to the history I already have with DCM from the grantee perspective,” she said.



## feedback

Have a question about some aspect of working at NIH? You can post anonymous queries at [www.nih.gov/nihrecord/index.htm](http://www.nih.gov/nihrecord/index.htm) (click on the Feedback icon) and we'll try to provide answers.

**Feedback:** Has the Old Georgetown Rd. and South Dr. entrance been evaluated for a walk signal? I have seen a number of pedestrians, bikes and runners who are unaware that the light has turned green to exit campus, or that the left arrow is green for turning into South Dr. This does not seem safe and employees assume they can drive when they have a green light. Those on the sidewalk need a don't-walk signal.

**Response from ORF:** The Office of Research Facilities visited the intersection in question and observed that there are a pair of functioning crosswalk signals visible to pedestrians and cyclists moving north and south along Old Georgetown Rd. The "don't walk" symbol is clearly discernible and fully illuminated on both fixture heads. If there continues to be concern with the signals on Old Georgetown Rd., since they are not part of NIH property, ORF suggests contacting the Maryland State Highway Administration, Office of Traffic and Safety at 1-888-963-0307.



**Feedback:** Is there a map of campus parking that identifies where the different parking permits are allowed, i.e. red vs. general vs. carpool and how many spaces are located in these lots for each type? Just seems that it might help the endless aimless driving of some as they try to find a place to park. Thanks.

**Response from ORS:** The Office of Research Services offers a map identifying parking for employees and visitors. The map includes surface parking areas as well as Multi Level Parking (MLP) garages. To view this map visit [www.ors.od.nih.gov/maps/Pages/NIH-Visitor-Map.aspx](http://www.ors.od.nih.gov/maps/Pages/NIH-Visitor-Map.aspx).

We currently do not have a map that identifies the locations of the different types of campus parking spaces due to the breadth and complexity of some of the parking lots and garages, but we will explore if this is feasible in a web-based format. However, in general, carpool and red permit spaces are usually found closer to a building on surface lots and the lower levels of MLPs. In addition, designated parking and individually reserved spaces are appropriately marked with highly visible signage.

### 'Think Big' Seminar Set, July 16

Join the Office of Equity, Diversity and Inclusion for an empowerment seminar "Think Big or Stay Where You Are" on Wednesday, July 16 from 11 a.m. to 12:30 p.m. in Wilson Hall, Bldg. 1. Cynthia Dunn of the Internal Revenue Service will be the facilitator. The seminar will provide additions to your career development tool kits. The event is sponsored by EDI's Black, Asian American and Pacific Islander and Native American portfolios. Sign language interpreters will be provided. For more information, contact Victoria Gross, (301) 451-0746, [Victoria.Gross@nih.gov](mailto:Victoria.Gross@nih.gov) or the Federal Relay Service at 1-800-877-8339.



## letters

Dear Editor,

In response to the question in the June 6 *Record* about handicapped parking: I had the same experience with my new titanium hip in 2011. The first two days back, I checked 11 (!) lots at increasing distances to the south entrance of Bldg. 10 before finding a designated handicapped spot. NIH parking staff told me NIH exceeds the standards, but since many of the spots seem to be in the surface lot at the far end of the campus, and spaces closer to work locations are all filled before 8 a.m., it would seem likely that our population is different in some significant ways from the population on which those standards are based. Maybe it's time to determine how many permanent and temporary spaces are actually needed, and where they're needed. I was thrilled to give up my temporary handicapped tag after a few months of PT, but not everyone is in a position to do that.

*Pam Sieving, Informationist, NIH Library*



## volunteers

### Premenstrual Syndrome Research Studies

Women ages 18-50 who struggle with irritability, anxiety or sadness prior to menstruation are invited to participate in outpatient research studies. There is no cost for participation. Compensation may be provided. Phone (301) 496-9576 and refer to study 81-M-0126.

### NIH Research Study Seeks Healthy Moms

Healthy moms ages 18-50 are invited to participate in an outpatient research study examining the role of reproductive hormones in postpartum depression. Eligible participants must be medication-free. Compensation is provided. Call to learn more: (301) 496-9576, TTY 1-866-411-1010. Refer to study 95-M-0097.



At left, the bear makes its way down the tree after hearing loud pops. Above, a media phalanx assembled to track the animal.

### Wayward Bear Enchants NIH Campus

A small black bear appeared on the fringes of the NIH campus around 11 a.m. on June 19. For the rest of the afternoon, his sojourn eclipsed virtually all other activities as it drew crowds of spectators and hordes of media, including a TV news helicopter that hovered for hours over the pine grove where the bear spent much of the time up a tree.

Campus security cameras had detected a bear ambling across the Commercial Vehicle Inspection Facility lot at 1:22 a.m. on June 19. It appeared to come from Rockville Pike and headed toward campus parallel to North Dr. A bear's appearance on security video was a campus first, authorities said.

By the time the bear was neutralized by tranquilizer darts fired by the Maryland Department of Natural Resources, the creature had at least two Twitter accounts and had been tweeted about by NIH director Dr. Francis Collins: "Hey @NIH\_Bear, great to have you & your sense of humor on the #NIH campus. Sorry about that dart thing, but hope you enjoy your new digs." A day later, the "bear" had tweeted 331 times and attracted 2,252 followers to its @NIH\_Bear account; there was also a "bethesda bear" Twitter handle.

Campus police received the original report of a

bear sighting at 10:55 a.m.; it was near the Medical Center Metro Station. Once they confirmed the report, they contacted the Maryland DNR for assistance. After crowds started to form, the NIH Police and Fire Departments created a safe perimeter in the event the bear decided to come down from the tree. A cautionary email was sent to NIH staff alerting them to the presence of the bear on campus.

DNR staff planned to use loud noises, similar to fireworks, to encourage the bear to leave the tree. NIH staff erected fencing meant to discourage the bear from running toward Rockville Pike.

The loud pops were successful and the bear came down from the tree. He ran further into the campus via the South Dr. entrance and into a densely wooded area near Bldg. 21, across the street from Bldg. 1. DNR staff followed the bear and successfully tranquilized it. Once unconscious, the bear was further inspected by DNR staff. It was confirmed to be a male, about 1½ years of age, about 100-125 lbs., and in good health.

DNR staff took the sleeping bear and released it into the wild in western Montgomery County. They said the bear population is growing in Maryland and such suburban sightings could become a more common event in the future.

"In my nearly 36 years here, it's the first bear visit that I've known or heard of," said NIH landscape architect Lynn Mueller.



**Above:**  
The bear spent about 3 hours high up in a pine tree.

**Below, from l:**  
Crowds formed to see what the bear would do. The tranquilized creature had a story to tell once it woke up.

PHOTOS: BROOKE BREADY, BRAD MOSS

