

nih record



ABOVE • Harvard's Dr. Alvin Poussaint helps NIH mark the Dr. Martin Luther King, Jr. observance. See more photos, p. 12.

features

NIH Is Under Unceasing Cyberattack 1

Varmus Says Global Health Spending Should Be Doubled 3

NIH Exceeds CFC Goal 5

King Commemoration Held Here 12

departments

Briefs 2
 Digest 10
 Feedback 11
 Seen 12

Attacks Never Cease

Computer Security Is a Constant Challenge at NIH

By Rich McManus

The NIH computer network is like a human immune system, constantly struggling to ward off dangerous new and re-emerging pathogens. These days, you don't even have to leave your desktop to come under siege. That's what keeps Daniel Sands, a former NCI nurse who has risen over the years to become NIH's chief information security officer, awake at night. "We're under constant attack—they're knocking at the door every single moment," he said. "It's massive and it never lets up."

Sands and his security colleagues are a little like the soldiers defending the Alamo: outnumbered, outgunned but manning the fort nonetheless. That effort was rewarded last year when 200-plus members of the NIH-wide security team were honored with the NIH Director's Award. No one would begrudge these defenders the honor if they knew the stakes.

"NIH is a big target because we have valuable research and intellectual property of interest to huge industries," Sands explains. "HHS and NIH are also one of the larger Internet presences in the federal government, so that attracts a lot of attention, not all of it good. Eighty percent of our budget [or about \$23 billion] goes out to grantees, so a lot of money passes through NIH. That alone is a huge target that needs to be protected."

SEE COMPUTER SECURITY, PAGE 6

The 'Dogtor' Is In

STEP Forum Touts Benefits of Pets

By Belle Waring

Do companion animals affect human health? A recent Staff Training in Extramural Programs (STEP) forum gathered in Natcher Bldg. to explore "Understanding the Human-Animal Bond: What Has Your Pet Done for You Lately?"

Pets have been an integral part of western culture over the last 10,000 years, said the University of Pennsylvania's Dr. James Serpell in an overview. As of 2005, almost two-thirds of U.S. households had a pet. While the largest pet population is fish, followed by cats, the highest number of pet-owning households goes to the dogs.

Serpell noted that social support systems, which protect us against cardiovascular disease, depression and other illnesses, have become increasingly fragmented over the last 40 years. Our pets cost us billions annually but they offer social support.

Research shows how pets foster a short-term reduction in heart rate and blood pressure plus

SEE PETS, PAGE 4



Dr. Dan Ariely discusses decision-making.

Accepting the Default

NIMH Lecturer Ariely Looks at Difficult Decision-Making

By Carla Garnett

Whatever leads people to make difficult decisions is really complicated, involving multiple factors including differences in culture, education, upbringing and training, right? Not so much. According to recent NIMH Director's Innovation Series lecturer Dr. Dan Ariely, a lot of the time it just depends on how issues are

SEE DECISIONS, PAGE 8



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, 2009.

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

NIH Record Office Bldg. 31, Rm. 5B41
Phone (301) 496-2125 Fax (301) 402-1485

Web address <http://nihrecord.od.nih.gov>

Editor

Richard McManus
rm26q@nih.gov

Assistant Editor

Carla Garnett
cg9s@nih.gov

Staff Writers

Jan Ehrman
je48b@nih.gov

Belle Waring
bw174w@nih.gov

The NIH Record reserves the right to make corrections, changes or deletions in submitted copy in conformity with the policies of the paper and HHS.



2009 Evolution and Medicine Lecture Series

NIH is partnering with the National Academy of Sciences to present the annual lecture series "Evolution and Medicine." An outstanding group of scientists will present lectures on evolution as it applies to their area of scientific expertise. A reception will be held following each lecture. The program is free and open to everyone.

Feb. 9 – Brain Evolution: Lessons from Birds and Humans Who Sing and Talk, Erich Jarvis, Duke University

Mar. 25 – Your Inner Fish, Neil Shubin, University of Chicago

Apr. 13 – Communicating About Evolution, Matthew Nisbet, American University

June 8 – Evolution Matters, David Hillis, University of Texas

All lectures take place from 7 to 8 p.m. at the National Academy of Sciences Auditorium, 2101 Constitution Ave., N.W., Washington, D.C. A photo ID is required for entrance. For more information, contact (202) 334-2436 or cpnas@nas.edu. Sign language interpreters are available on request. If you require this or other reasonable accommodation, contact OSE at least 5 days before the event at moorec@mail.nih.gov, (301) 402-2470 or the Federal Relay, (TTY) 1-800-877-8339.

NIH-Duke Training in Clinical Research

Applications for the 2009-2010 NIH-Duke Training Program in Clinical Research are now available in the Clinical Center, Office of Clinical Research Training and Medical Education, Bldg. 10, Rm. B1L403.

The NIH-Duke program, implemented in 1998, is designed primarily for physicians and dentists who desire formal training in the quantitative and methodological principles of clinical research. The program is offered via videoconference at the CC. Academic credit earned by participating in this program may be applied toward satisfying the degree requirement for a master of health sciences in clinical research from Duke School of Medicine.

For more information about course work and tuition costs, visit <http://tpcr.mc.duke.edu>. Email queries about the program may be addressed to tpcr@mc.duke.edu. The deadline for applying is Mar. 1. Applicants who have been accepted into the program will be notified by July 1.

Observe Data Privacy Day, Jan. 28

On Wednesday, Jan. 28, the U.S., Canada and 27 European countries will observe Data Privacy Day. With legislation pending to establish a national holiday, Data Privacy Day is designed to raise privacy awareness and foster international cooperation around privacy issues.

Privacy and protecting information is critical to NIH's mission. Whether the personally identifiable information (PII) you work with appears in hard copy, on the web or is disclosed via encrypted email or over the phone or a secure fax machine, protecting an individual's private information is everyone's responsibility. The NIH Office of the Senior Official for Privacy encourages you to celebrate Data Privacy Day by: shredding unnecessary documents that contain sensitive information such as Social Security numbers, patient medical records, financial or personnel information, biometrics, etc.; frequently changing your computer password; encrypting email that contains PII; subscribing to NIH's privacy e-newsletter *NIH Eye on Privacy* to stay current on privacy initiatives at NIH. To subscribe, visit <http://oma.od.nih.gov/ms/privacy/niheyeonprivacy.html>.



Fauci Wins a 'Freddie'

NIAID director Dr. Anthony Fauci was awarded the MediMedia Foundation Public Service Award ("Freddie Award") at a recent ceremony in Philadelphia, for outstanding contributions to the field of infectious diseases.

Varmus Calls for Doubling Global Health Spending

By Ira Allen

Former NIH director Dr. Harold Varmus says Congress ought to double the amount of money spent on global health and highlight it “as a pillar of U.S. foreign policy.”

Delivering the annual David E. Barmes lecture that Fogarty International Center cosponsors with the National Institute of Dental and Craniofacial Research, Varmus also said the research portfolio should be rebalanced with some of the increase directed toward chronic and neglected diseases, maternal and child health and other issues.

“The number of dollars we are talking about here in the greater sphere of things is trivial,” he said. “When we are talking about a trillion-dollar economic stimulus package...coming up with \$10 [billion] or \$20 billion more to do something that affects the state of health throughout the world, to me that just seems like a matter of resolve and we ought to resolve to do these things.”

Varmus is co-chair of an Institute of Medicine committee that the day before had released a set of recommendations to the Obama administration. It called for doubling federal aid for global health to \$15 billion in 4 years for health-related Millennium Development Goals such as AIDS and other infectious diseases as well as for non-communicable diseases and injury prevention.

Noting that much of the world blames the United States for the world’s economic crisis, Varmus said, “Our reputation depends on exerting humanitarian leadership. If we can continue printing money for automakers, we ought to do it for global health as well.”

The IOM report was based on extensive public hearings and was timed to coincide with the presidential transition. It is the first part of a follow-up to a 1997 report on the subject. The rest is due in several months, covering the role of nongovernmental institutions.

In the new report’s central recommendation, “The committee is calling on the next president to highlight health as a pillar of U.S. foreign policy,” perhaps by making a major speech early in his tenure declaring an American responsibility and opportunity to contribute to improved health around the world.

It also urged President-elect Obama to appoint a coordinator to his personal staff to oversee government’s global health initiatives, possibly under the aegis of the National Security Council.



The committee singled out FIC as a success story for having “played a pivotal role in building the capacity of researchers in low- and middle-income countries,” citing the AIDS International Training and Research Program and the new Millennium Promise Awards to build research capacity in fields related to chronic diseases.


Varmus and Fogarty director Dr. Roger Glass noted that since the 1997 report, the outlook for global health has changed dramatically.

“We’ve seen enormous changes—huge investments in global health from both the private and public sectors,” Glass said. “We’ve witnessed a shift in approach as well—with a growing recognition of the role global health can play in diplomacy and economic development.”

Polls have shown that health now ranks among Americans’ top priorities for development assistance, said the committee, whose work was sponsored by four government agencies, including NIH, and five private foundations. Sixteen institutes and centers joined FIC in supporting the effort.

While the committee did not shy away from calling for more funding, it stressed responsible spending, declaring, “Congress and the administration should require that aid be accompanied by rigorous country- and program-level evaluations to measure the impact of global health investments in order to maximize their effectiveness.”

Although it praised the work of the World Health Organization, the committee called for a “rigorous external review” of the U.N. agency to improve its structural and functional effectiveness.

Varmus, co-recipient of a Nobel Prize for studies of the genetic basis of cancer, is president of Memorial Sloan-Kettering Cancer Center. The lecture honors the late Dr. David Barmes, a special expert for international health at NIDCR. 



Former NIH director Dr. Harold Varmus (above) calls for doubling the amount of money spent on global health. At left he meets with FIC director Dr. Roger Glass (c) and Dr. Lawrence Tabak (r), who is both NIDCR director and acting deputy NIH director.

PETS

CONTINUED FROM PAGE 1

Clockwise, from top right:

Kenji greets Dr. Joan Esnayra, founder of the Psychiatric Service Dog Society.

The 19th-century lab in “*Amor Vincit Omnia* [Love Conquers All],” includes a mouser. Lithograph: A. Crespin. Courtesy National Library of Medicine

Virginia Commonwealth University’s Dr. Sandra Barker founded its School of Medicine’s Center for Human-Animal Interaction.

PHOTOS: MICHAEL SPENCER



feelings of calmness and relaxation. Such warm feelings, said Serpell, may be mediated by oxytocin (OT) and vasopressin (VP), which are bonding hormones in all mammalian and bird species.

“Genes that code for OT and VP emerged from the duplication of a single ancestral gene early in vertebrate evolution,” he said. The bonding mechanisms may thus work between species as well as within them.

“Pets may be even better at providing social support than other people,” Serpell noted.

Dr. Patricia McConnell of the University of Wisconsin agreed, citing a survey of female veterinary students. Half said they got more support from their dogs than from their husbands.

“Dogs are nurturing, docile and love to play,” said McConnell. They also communicate social subtleties with visual signals. The human/dog bond may be based on “shared emotional [facial] expression”—we can “read” each other.

Virginia Commonwealth University’s Dr. Sandra Barker founded the Center for Human-Animal Interaction in the School of Medicine at VCU, where therapy dogs are incorporated into a patient’s treatment plan and visit patients throughout the VCU Medical Center through the center’s “Dogs on Call” program.

Center research indicates that many benefit from such contact; the effects include reduced anxiety and fear in acute care patients.

Other research shows that pets serve as a buffer to stress for their owners. The presence of fish tanks helps dementia patients gain weight, for example, and interaction with dogs is associated with less pain in post-operative children. “Community-living adults,” after playing with pooches, experience reductions in blood pressure, loneliness and anxiety.

Barker’s ongoing research includes the effect of animal-assisted interactions on physiological and psychological distress in cancer patients at the Clinical Center, a study conducted with Dr. Ann Berger and Julie Hoehl of the CC.

The Psychiatric Service Dog Society, founded by Dr. Joan Esnayra, is planning an 18-month study with Walter Reed Army Medical Center and Westat: 20 soldiers with post traumatic stress disorder will receive Walter Reed’s usual PTSD protocol. Half will receive a dog; the other half, no dog. All will be followed for 12 months.



Data collection will consist of psychometric assessments and biological measures.

Accompanying Esnayra were two psychiatric service dogs (PSDs), her Rhodesian Ridgebacks Kenji and Rainbow. PSDs are service animals, not pets. PSD tasks include, but are not limited to, reminding their humans to take medications on time, interrupting dissociative episodes and creating a psychologically “safe” personal boundary in public.

Along with his companion Donna Dell’Aglia, Mike Townsend, who lives with muscular dystrophy, described how life improved thanks to Kathy, Townsend’s “monkey helper.” Kathy was provided by Helping Hands: Monkey Helpers for the Disabled, Inc.



How does Kathy help? In all activities of daily living, such as operating light switches, telephones and the TV remote, turning the computer on and off and turning book pages.

Kathy is a Capuchin monkey, a breed known for its intelligence, curiosity, manual dexterity, affinity for humans, small size and long life span. With Kathy's help, said Dell'Aglio, "Now Mike is working for the first time in his life."

Some sample questions from the audience:

- What about grief when a pet dies? "It can be profound," said Barker. "Very similar to what we feel for a human death, but we don't expect to be so blown away. Society has come a long way, but we're not there yet in seeing it as legitimate grief."
- Sounds like the research is pretty dog-heavy. What about cats? "In research on the impact of pets within homes," said Serpell, "cats are included, but they're much less suitable at being carted around in a hospital setting."
- Are cats harder to study because they are solitary? "The social system in felines is fascinating," said McConnell. "They aren't solitary, but 'facultatively social.' If there are enough resources, even feral cat 'queens' stick together." 🐾

Workshop on Translational Research

The National Center for Research Resources is sponsoring a 1½-day translational research workshop Feb. 10-11 at the Natcher Conference Center. "Decision-Making in T1 Translational Research" is the first in a series of anticipated workshops designed to identify common challenges, discover solutions and discuss best practices in T1 translational research.

Jointly sponsored with the Clinical and Translational Science Awards Consortium—a national group of world-class research institutions striving to turn scientific discoveries into treatments for patients—the workshop will concentrate on team science and pathways; incorporating advanced technologies and animal models into T1 research; and young investigators' needs.

The event is free and open to the public. Registration deadline is Feb. 2. Individuals who need reasonable accommodation should contact the Federal Relay Service at 1-800-877-8339 at least 5 days before the event. For more information and to register, visit <http://palladianpartners.com/TR-Workshop>.

NIH Exceeds Its CFC Goal, But Campaign Has Another Week

To date, NIH has contributed \$2.4 million to those in need via the Combined Federal Campaign. Through their generosity, NIH employees have made a huge impact in the local, national and international non-profit community.

Every year has challenges, but learning first-hand about needs just in Montgomery County alone brings home the importance of the work NIH does with the CFC:

- Year to date, more than 30 percent of individuals visiting county social services have college degrees.
- 83 percent of new customers are unemployed compared to 75 percent last year.
- Food stamp needs have grown 16 percent since last year.
- Home energy assistance applications grew from 7,828 in 2007 to 9,043 in 2008.
- All 28 family shelter beds are full and 53 families are in motels—many more live with relatives or friends.
- Suicide hotline calls are up 150 percent from last year.
- Manna gave free groceries to over 1,400 more families than last year.
- At the Goodwill dinner in Bethesda for those in need, more than 400 attended.

Thank you to all who participated for your generous contribution no matter how large or small. You have made an impact in the lives of many. When NIH gives, good things happen.

You can still help. The CFC will remain active one more week, through January 2009. Should you wish to contribute, contact your keyworker found on the web site at <http://cfc.nih.gov> or by calling (301) 827-3801.

International Art Exhibit in VIC

"The Day I Will Never Forget..." an international art exchange exhibit, will be on display in the Nobel Laureate Exhibit Hall at the NIH Visitor Information Center (VIC) in Bldg. 45 starting Thursday, Feb. 5. The exhibit runs through the month. This collaborative effort sponsored by Tracy's Kids Pediatric Art Therapy Program, NCI and the Middle East Cancer Consortium (MECC) contains works of art created by pediatric hematology-oncology patients and family members at hospitals and clinics in the U.S., Jordan, Israel, Egypt and Turkey. Tracy's Kids is a non-profit organization affiliated with Georgetown University Medical Center's Lombardi Comprehensive Cancer Center. MECC was begun in 1996 with NCI assistance and has as its members Cyprus, Egypt, Israel, Jordan, the Palestinian Authority and Turkey.



A 7-year-old leukemia patient in Istanbul, Turkey, drew this image, which is part of the upcoming VIC exhibit. The artist explained, "This is the picture of the 23rd of April. I danced with my classmates. I will never forget that day."

The VIC is open Monday through Friday from 8:30 a.m. to 4:30 p.m. and is located in the lobby of the Natcher Bldg.

COMPUTER SECURITY

CONTINUED FROM PAGE 1

Assets include the NIH Business System (NBS), the extramural grants system, which can contain research ideas, and the HHS Payment Management System, which is hosted in NIH's data center.

The threat environment has shifted dramatically. Gone are the days of script-kiddies (typically young, bright, bored and mischievous hackers) who sought notoriety by breaching NIH's then-porous firewall and defacing a web page or two. Today sophisticated criminal enterprises are in the game, as are state-sponsored groups, with political as well as financial agendas. Because such enemies have already infiltrated some of the biggest corporations and federal sites in the U.S., Sands has to assume that they are here already too. "Billions and billions go through here every month," said Sands. "Criminals and adversarial nation-states have shift workers employed 24 hours a day. Their motivation is high because information is money.

"Their aim is to attack and steal data," he said, "and they do it in a stealthy manner that often evades traditional security measures." There have been plenty of examples of terabytes [1 trillion bytes] of information being exfiltrated out of government (computer) space in short bursts of time, Sands explained. In 2006, a team of cyber-forensic specialists investigated hacking incidents that were traced to a computer in the House of Representatives, he recounted.

"They discovered that the machine was infected with a virus that communicated with computers outside the House system to retrieve malicious programs designed to spy and steal data—and the user never knew it. The virus tracked everything the user typed in email and instant messages and removed sensitive files contained on both the hard drive and the network drive that was shared by other computers in the House system. Imagine the price tag for supplying sensitive information about members and constituents, foreign policy, national security, intelligence—perhaps even design specifications for the space shuttle," Sands said.

"Given the reports of attacks on Congress and the executive branch, it would be naive to assume they haven't penetrated NIH comput-

ers," he added. Sands believes the bad guys have already gotten in the door and have gained admin (root or direct control) privileges at NIH surreptitiously, but are lying low for the moment. "Once they have admin rights, they live here," he said, "and they're very quiet—they know we are looking for them. But it's extremely hard to find them once they burrow in."

How did they get by the NIH firewall, or what he calls "the perimeter fence?" Sands describes two routes. The first is an "SQL injection attack," which exploits open ports on NIH web applications. "The port is open on purpose so that the public can get to www.nih.gov and other sites," he said. "But if those machines are unpatched, the site's software can be vulnerable to exploitation."

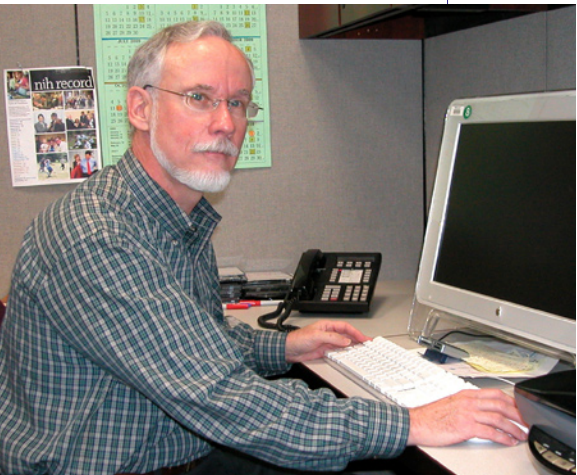
The second, and even more worrisome, threat is "phishing" or "spear-phishing," in which an NIH employee gets an email that seems to come from an entirely credible source and contains links or attachments that, when opened, release "malware," typically a Trojan horse program.

"A Trojan horse is a piece of computer code that masquerades as a useful program, a game, greeting card, picture or other attachment. When it's downloaded, the hacker can take control of the computer and install a keylogger to collect information used to access other systems like NBS or ITAS," Sands said. "Passwords, Social Security numbers and other sensitive data are also gathered for later use—for access to other systems or government sites and to sell to criminals. These people can use your privileges and become admin in the NIH domain. They maintain a clandestine presence and wait for an opportunity to get more passwords and information, including science and technology transfer data."

Thankfully, most of the annoying—but sometimes dangerous—spam and malware gets "stripped at the border" by NIH's email defenses, Sands said, but some intrusions, dubbed "zero-day attacks," are problematic because they exploit previously unknown vulnerabilities for which there is no available filter or patch.

It's even getting more dangerous just browsing on the Internet, warned Sands. "There are lots of infected web sites. You don't even have to click on anything. You can download code just by visiting a page. In just the past year, it's been estimated that the number of infected web pages has tripled."

Perhaps the most worrisome vulnerability for Sands at the moment is the large number of "unmanaged" computers in use by NIH'ers,



Daniel Sands, chief information security officer for NIH, cites a recent New York Times article that says, "The cyber-criminals appear to be at least as technically advanced as the most sophisticated software companies. And they are faster and more flexible." He also warned that employees' personal computers at home are typically highly vulnerable to infection, especially by "botnets," which hijack computer function to send spam and capture personal information. He notes that botnets are hard to detect and eradicate.

who log on to NIH's network remotely, either from home or from telework centers. Increasingly, federal agencies are mandating that only government-owned machines will have access to their networks, he reported, an approach that is also being considered at NIH. This would be a way of assuring fully defended machines (and could also take advantage of the thousands of computers surplussed annually at NIH). "We are also looking into the use of 'trusted virtual clients,' a way of turning un-trusted PCs into trusted ones," he said. "We need to determine what kind of access should be allowed for these machines."

Another serious emerging issue, he said, is coping with security in so-called "Web 2.0" applications like Facebook, MySpace, Second Life, etc. "These applications can introduce new risks into the enterprise that need to be assessed and mitigated. They also raise the issue of where our information is going in so-called 'cloud' computing, where computing resources and data is maintained by Google or other vendors out on the Internet. These untested models raise new and unique questions about control and accountability that haven't fully been answered and represent yet another very real challenge as users race to embrace these technologies. Unfortunately this often casts the security community in the role of the Grinch when we have to ask the question 'how can we do this safely?' It's the security community's unenviable job to prevent undue risk to the IT resources we depend on to support the NIH mission and the compromise or loss of the research, scientific, patient or personal data entrusted to us.

"We have layered security here," Sands continued. "CIT runs an enterprise firewall and scans incoming NIH email—each IC doesn't have to do that for itself. But the ICs do manage their networks and desktops, which is extremely important." Each IC also has its own dedicated information system security officer (ISSO) and security team, which meets as an NIH-wide group twice a month at Fernwood. "It's a very active group and the meetings are always well attended," Sands said. "In recent years, the role of ISSOs has grown exponentially as the list of responsibilities and requirements continues to proliferate. Information security requires a huge team effort and a remarkable amount of cooperation."

To stay abreast of the constant threat to computer security here, Sands and his colleagues are in touch with U.S.-CERT (the Department of Homeland Security Computer Emergency Readiness Team) and other security sources. "We also hear from the FBI, HHS and other fed-

eral agencies," he added. "The mounting threats have led to more cooperation between us, law enforcement and the IT security community as a whole."

In 2009, the mandates of FISMA (Federal Information Security Management Act) will continue to preoccupy Sands and his peers, who always have to scramble for resources in a tough budget climate. "It's a tremendous amount of work," he said, "however NIH is extremely fortunate because when it comes to incident response, securing our systems, developing secure policies, supporting the NIH-wide security community and teaching security awareness, my staff, the IC ISSOs and the whole security team really step up to the plate. I'm truly proud of them and all of their hard work to try to keep NIH safe."

This month, the 2009 security awareness refresher (and updated full course) will be launched. All staff, including anyone with access to NIH IT resources, needs to take the annual training. "There's a lot of new information on how the threat environment has changed," said Sands, "and staff needs to pay attention to the material on how to avoid being a victim of the increasingly sophisticated social engineering ploys used by today's hackers. We really need to move toward more of a security culture where taking precautions becomes more of an instinct rather than an afterthought." ●

How You Can Help Protect NIH Information Assets

- 🔒 Take annual information security awareness training and carefully review and follow the NIH IT General Rules of Behavior.
- 🔒 Keep your anti-virus, computer operating system and browser software up-to-date. This is especially important for teleworkers and others who connect to NIHnet from remote locations.
- 🔒 Create strong, secure passwords.
- 🔒 Never click on links or open attachments in emails that request personal and/or other sensitive information.
- 🔒 Make sure you adequately protect sensitive data, including personally identifiable information.
- 🔒 Avoid visiting un-trusted Internet sites.
- 🔒 Laptops, Blackberries, thumb drives and other portable devices are targets for theft. Make sure this equipment has encryption capabilities in accordance with NIH policy.
- 🔒 Use NIH IT resources for authorized purposes only.
- 🔒 Don't click on links in pop-up windows because they often result in the download of spyware.
- 🔒 Be mindful of physical security precautions for electronic (including removable media) and paper documents.

DECISIONS

CONTINUED FROM PAGE 1

worded. Fact is, he said, loads of people from all walks of life make hard choices based on the default answer.

To illustrate, Ariely, the James B. Duke professor of behavioral economics at Duke University, showed a slide on international organ donation, by country. Why, he and his colleagues wondered, do some nations have a high percentage of organ donation, and others participate in the life-saving procedure only to a rare degree?

“When we look at why some countries give a lot and some give a little, you think it has to be about how much people care about each other, right?” Ariely suggested. “Or maybe it’s about religion, or culture. It has to be something big, right? The trick is the form at the DMV [department of motor vehicles, where people register their organ donation preferences].”

Turns out, donation differences have little to do with caring, societal or religious issues. Instead it’s merely the

wording on the questionnaire. In countries where the form said, “check here if you want to participate in organ donation,” a low percentage of people agreed to donate. But in nations where the form said, “check here if you do not want to participate in organ donation,” the percentage agreeing to donate was high. The default answer—wherever respondents didn’t have to actively check the box—always won.

Some, Ariely pointed out, might argue that the default wins only when the issue is not considered important. After all, organ donation happens after you’re dead, so people may not view it as vital enough to really worry about. Wrong again. The default phenomenon occurs regardless of the topic—even on subjects seen as difficult and fraught with implications. In fact the tougher and thornier the issue, the more likely we are to opt for the default answer.

“This points to something interesting,” explained Ariely. “The fact is, it’s not because [the question] is easy, it’s because it’s hard. We don’t know how to think about it. Complexity makes it difficult to know what to do, and because it’s difficult, we accept the default.”

But surely decision-making by default does not happen in the medical profession. “After all,”

Ariely said, “physicians don’t make decisions one time; they’re experts. They’re paid well to do these things over and over.” The fact is, it happens to everyone, regardless of skill, training or education level, he reported.

Researchers quizzed a group of physicians about whether they would reverse their initial recommendation for a patient to have major

“We build things to our physical limitations all the time. We need to start building things to our mental limitations. We’re built to see things in terms of what works best for ourselves, so how do we restructure things to create incentives?”

surgery in order for the person to try a prescription pain reliever that mistakenly had not been considered. Most doctors reversed course and called off the surgery. However, when researchers added a third treatment option—and thereby made the issue more complex—most physicians went ahead with plans to operate: the default decision.

“This should tell you that even for professionals and even for people who are well-trained and well-paid for their opinions, these things do matter,” Ariely said.

A cognitive scientist, Ariely is the author of *Predictably Irrational: The Hidden Forces that Shape Our Decisions*. He began exploring how the mind works when he was a hospital patient for 3 years. He’d survived an explosion that left him with 70 percent of his body covered by third-degree burns. The daily wound-dressing process, which was “unimaginably painful, became a negotiating point” between him and his nurses. His caregivers thought ripping the bandages off quickly was better than removing them slowly, bit by bit. Ariely begged for slow removal. The nurses refused, telling him they knew best.

Years after leaving the hospital, he learned about the scientific method and how to test his own theory.

“I learned that the nurses were wrong,” Ari-



Lecturer Ariely (l), a cognitive scientist, chats with NIMH director Dr. Thomas Insel.

PHOTOS: ERNIE BRANSON

ely said. "I learned that their intuitions were wrong in multiple ways. It turns out you just don't interpret duration in the same way that you think about intensity."

How could they get it wrong? Ariely found himself asking. "When we think about it in economic terms, about people getting things right, we need three ingredients: One, people should want to get things right. Two, they should have incentives to get things right; it should be important for them. And finally, they should have experience with it."

Are there other cases where, like the nurses, we have all the right ingredients to get things right, but for some reason we get it wrong? Ariely set out to prove that such cases occur all the time in daily life.

It's a lot like those optical illusions that make their way around the office, he explained. As developed as our eyes are, they can still play tricks on us. What seems obvious is not, and what we should see we often miss.

"We have a fantastic visual sense," Ariely concluded. "The brain dedicates more to vision than to anything else. We do vision more hours of the day than we do anything else. We're evolutionarily designed for this. And yet, if we have these structural mistakes in vision that we can't help but repeat, then what chance is there for things that are not evolutionarily created, things we don't have a specific brain region for, for example financial and medical decisions? The odds are that we are much more inclined to make these types of mistakes."

To eliminate the inertia created by complex problems, Ariely said, we need to think about restructuring the world for the way our brains think.

"We build things to our physical limitations all the time," he explained. "We need to start building things to our mental limitations. We're built to see things in terms of what works best for ourselves, so how do we restructure things to create incentives?"

To see videos of some of Ariely's other presentations, or to read his blog, visit <http://www.predictablyirrational.com/>. 



The Class of 2009 and 2010 Management Interns includes (front, from l) Jen Dreier, Monique Ndenecho, Reaya Reuss, Jessica Ryan. At rear are (from l) Sheria Washington, Fred James, Aaron Bell, Alan Jackson, Debbie Pettitt, Fettina Bryant.

Over 50 Years Developing Leaders

Management Intern Program 2009 Recruits Applicants

Have you thought about changing your career path? Outstanding men and women interested in pursuing a career in public service are encouraged to apply for the 2009 NIH Management Intern (MI) Program. Entering its 52nd year, the program—a highly competitive 2-year rotational training opportunity—has been successful in identifying and training future NIH leaders to manage in the public sector. The program offers an opportunity to explore different administrative career fields, gain insight and train for leadership roles. Many graduates now hold high-level managerial positions with NIH and other federal agencies. Recruitment will open on Feb. 13 and close Mar. 13.

During the MI program, individuals complete rotational assignments that introduce them to potential administrative career tracks in budget and finance, public liaison, legislative analysis, program planning and evaluation, grants and contracts, information technology, human resources management, central services management, science policy, program and management analysis and general administration.

Interns enter the program from various career backgrounds, including administrative offices, intramural research laboratories and patient care. NIH personnel who are looking to switch careers from science to administration should consider the program. Skills in project management and evaluation; idea and literature research; data collection, analysis and presentation; negotiation; problem-solving; communication; and the ability to lead teams are key attributes of successful interns.

To be eligible to apply, candidates must be U.S. citizens willing to work full time and currently employed at NIH for at least 12 months. Positions are offered at the GS-5 level or above wage grade equivalent, or on any other type of appointment that offers noncompetitive conversion during the application period. The program has a career ladder with potential to the GS-12 level, depending on the candidate's grade at time of selection.

In order to find out more about the MI program, potential applicants are invited to attend one of the information sessions (see below). The application process and the schedule of sessions can also be found online at <http://internships.info.nih.gov>. For more information contact Cheronn Collins, (301) 594-2507.

Information Sessions (all are noon to 1 p.m.):

Feb. 6	RKL II / 9112
Feb. 13	Bldg. 10/2C116
Feb. 20	Bldg. 31/6C10
Feb. 27	Neuroscience/B1B2, 6001 Executive Blvd.
Mar. 4	Bldg. 31/6C6 (NIEHS Videoconferencing Bldg. 101)
Mar. 6	EPS/Classroom 9

From Outer Space to the Eye Clinic: Technique Developed to Detect Cataracts Early

A compact fiber-optic probe developed for the space program has now proven valuable for patients in the clinic as the first non-invasive early detection device for cataracts, the leading cause of vision loss worldwide. Researchers from NEI and NASA collaborated to develop a simple, safe eye test for measuring a protein related to cataract formation. If subtle protein changes can be detected before a cataract develops, people may be able to reduce their cataract risk by making simple lifestyle changes such as decreasing sun exposure, quitting smoking, stopping certain medications and controlling diabetes. "By the time the eye's lens appears cloudy from a cataract, it is too late to reverse or medi-



A compact fiber-optic probe developed for the space program has now proven valuable for patients in the clinic as the first non-invasive early detection device for cataracts.

cally treat this process," said Dr. Manuel Datiles III, NEI medical officer and lead author of the clinical study. "This technology can detect the earliest damage to lens proteins, triggering an early warning for cataract formation and blindness." The new device is based on a laser light technique called dynamic light scattering that was initially developed to analyze the growth of protein crystals in a zero-gravity space environment. The clinical trial was reported in the December 2008 *Archives of Ophthalmology*.

Researchers Levitate Object at Nano Scale

Magicians have long created the illusion of levitating objects in the air. Now researchers at NIH and Harvard University have actually levitated an object, suspending it without the need for external support. Working at the molecular level, researchers relied on the tendency of certain combinations of molecules to repel each other at close contact, effectively suspending one surface above another by a microscopic distance. The new technique may prove useful to the emerging field of nanomechanics—the development of microscopic machinery. Named for the nanometer (one billionth of a meter), nanomachinery would operate on the molecular level. By altering and combining molecules, tiny machines and even robots could be devised to perform surgery, manufacture food and fuel and boost computing speed. The study appeared in the Jan. 8 issue of *Nature*.

Ginkgo Study Fails to Show Benefit in Dementia Prevention

The dietary supplement Ginkgo biloba was found to be ineffective in reducing the development of dementia and Alzheimer's disease in older people, according to a study published in the *Journal of the American Medical Association*. The trial known as the Ginkgo Evaluation of Memory (GEM) study was conducted at four clinical sites over the course of 8 years. GEM is the largest clinical trial ever to evaluate ginkgo's effect on the occurrence of dementia. The research was co-funded by the National Center for Complementary and Alternative Medicine, NIA, NHLBI, NINDS and the Office of Dietary Supplements. GEM enrolled 3,069 participants age 75 or older with normal cognition or mild cognitive impairment. Those with dementia were excluded from participation. The study was conducted primarily to determine if ginkgo would decrease the incidence of all types of dementia and, more specifically, Alzheimer's disease. Secondly, the study evaluated ginkgo for its effects on overall cognitive decline, functional disability, incidence of cardiovascular disease and stroke and total mortality.

New Program Teaches Preschoolers Reading, Social Skills

A study funded by NIH and other federal agencies shows it's possible to teach preschoolers the pre-reading skills they need for later school success, while at the same time fostering the social skills necessary for making friends and avoiding conflicts with their peers. The findings address long-standing concerns on whether preschool education programs should emphasize academic achievement or social and emotional development. The study, funded largely by NICHD, appeared in the November/December 2008 issue of *Child Development*. In recent years, education officials and researchers who study early childhood education have struggled with whether to emphasize academics in preschool programs or to instead try to advance preschoolers' social skills. The current study marks the first attempt to develop a curriculum that addresses both concerns equally. In the study, researchers compared the progress of students who received a traditional Head Start curriculum to those who received a curriculum with enhancements in the areas of social and emotional learning and pre-reading skills. The new program is known as the REDI (Research-Based, Developmentally Informed) Head Start program. The researchers developed REDI by combining a program that fosters social and emotional development with curriculum components that promote language development and pre-reading skills.—compiled by Carla Garnett



feedback

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

Feedback: There is a disturbing trend on campus of decreasing availability of general parking spaces and increasing reserved parking spaces for "high" level NIH employees. Parking should be on a first-come, first-served basis. Why is it necessary to reserve parking spaces for certain employees at the exclusion of others?

Response from the Office of Research Services: There have recently been additional reserved parking spaces established throughout the campus. They have been created to recognize the contributions of distinguished NIH scientists who have 30+ years of service and have also been recognized by selection into the National Academy of Sciences or Institute of Medicine.

The policy regarding red-sticker parking spaces sets a cap for these at 10 percent of the total number of campus spaces. These spaces are distributed throughout the campus in order to maximize their availability to the largest number of employees with this privilege.

ORS is committed to providing the largest number of spaces that are permissible, while recognizing that there are many demands from numerous customer bases about the perceived lack of spaces.

Feedback: Would somebody please reconsider the decision to make East Drive a one-way street? Many drivers simply want to get to MLP-10 but instead of a short quick route, one needs to wend a long way around, wasting gas, time and increasing vehicle/pedestrian interaction. I can see no logical reason to impose a one-way pattern.

Response from ORS: The decision to close East Drive to northbound traffic after the opening of the Commercial Vehicle Inspection Facility (CVIF) was made only after careful analysis of the safety and traffic implications for employees and commercial vehicles using that roadway. On average, the CVIF inspects over 500 vehicles a day. These vehicles, many of which are large semi-trailers, subsequently enter campus via East Drive after completing inspection.

Semi-trailers and other commercial vehicles often require an extremely wide turning radius. In some cases, it is necessary for them to use both lanes of traffic to exit the CVIF onto East Drive. Allowing vehicles to travel northbound on East Drive, particularly during peak periods, would create a dangerous situation, increasing the likelihood for vehicle and pedestrian accidents to occur. In addition, it would contribute to traffic backups as commercial vehicles would need to enter campus against additional oncoming traffic. After consulting with traffic and road safety experts, NIH felt this was, and remains, the correct decision to ensure the safety of employees and visitors and to reduce traffic delays.



Recent retiree Mary LaMarca (c) is joined by (from l) Dr. Eric Green, Dr. Ellen Sidransky, LaMarca's husband George Stephens and Dr. Edward Ginns, NINDS.

NHGRI's LaMarca Ends Career Here

Mary LaMarca, a biologist in the Medical Genetics Branch, NHGRI, recently ended her career after more than 20 years at NIH.

"What a wonderful career I have had. I couldn't have done it without you," she told friends and colleagues who gathered at her farewell reception at the Clinical Center.

Over the course of her 30 years in biomedical research, LaMarca contributed to the authorship of more than 30 papers, most of which explored the genetics of Gaucher disease, a lysosomal storage disorder. The researcher and her colleagues hold patents in the United States and Israel for cloned DNA for synthesizing glucocerebrosidase, the enzyme that is defective in Gaucher disease. LaMarca was part of the team that created the first mouse model of Gaucher disease, reported in a 1992 issue of *Nature*, and she developed mouse models for other storage diseases including Pompe and aspartylglycosaminuria.

In the past year, she co-authored the most complete database of mutations observed in Gaucher disease, which was published in the journal *Human Mutation*. Most recently, she received a 2008 NIH Director's Award for exceptional contributions to the goals of the Medical Genetics Branch.

In the section on molecular neurogenetics, LaMarca designed and performed experiments at the bench, used her keen editing and writing ability and served as the lab's institutional memory. Her section chief, Dr. Ellen Sidransky, said, "I have truly benefited from her wisdom, integrity, humor, insight, bluntness and courage over the past years, and will miss her regular counsel and presence dearly."

In December 2004, LaMarca was diagnosed with amyotrophic lateral sclerosis (ALS, also known as Lou Gehrig's disease). In spite of her progressive disability, she continued working.

"ALS is a rare disease, and its causes are still unknown," she said. "My experience studying Gaucher disease, another rare disorder, has taught me that none of our research would be possible without the patients and their families who permit us to study their DNA and their symptoms."

She donated DNA to an NINDS-sponsored ALS repository, volunteered for a natural history study of potential neuropsychiatric and MRI indicators of ALS and has directed that her brain and spinal cord be donated to a tissue bank for ALS research after her death.

NIH Marks King Holiday

PHOTOS: ERNIE BRANSON

NIH's annual observance of Dr. Martin Luther King, Jr. Day, "Lessons from Inspiring Leaders: Remember! Celebrate! Act! Desire to Make a Difference," was held on Jan. 8 in the Natcher auditorium.

The event featured Dr. Alvin Poussaint, professor of psychiatry at Harvard Medical School and consultant to the long-running television series, *The Cosby Show*. Leon Harris, anchor for Washington, D.C.'s ABC 7 News WJLA also provided remarks on King's life, legacy and opportunities for citizens to make a difference in this generation.

NIH participants included acting NIH director Dr. Raynard Kington, Jesse Burnett, Black Employment Program manager of the Office of Equal Opportunity and Diversity Management, NICHD deputy director Dr. Yvonne Maddox and NIMH director Dr. Thomas Insel.

In addition, several community organizations set up displays and information exhibits in the Natcher atrium, offering attendees the opportunity to sign on as volunteers.



Top:

NIMH director Dr. Thomas Insel offers closing remarks at the Dr. Martin Luther King, Jr. commemorative program on Jan. 8 in Natcher auditorium. King, who was assassinated Apr. 4, 1968, at age 39, would have been 80 years old on Jan. 15.

Above:

*Dr. Alvin Poussaint (l) of Harvard, who is probably best known for his contributions to the hit TV comedy, *The Cosby Show*, addresses the King Day assembly. At right, local news anchor Leon Harris discusses ways citizens can make a difference and King's legacy of service.*