



ABOVE • Congressman Chaka Fattah (l) gets a glimpse of NIH research. See more photos and story, p. 12.

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‘Something Amazing Happened’

Response to HIV Alters Health Care Paradigm, Says El-Sadr

By Belle Waring

The myth of the American hero glorifies the rugged individual—the cowboy who rides alone. But there’s a new model: the public health heroes. The plague fighters.

Working in their teams, there is magic.

Some people think that HIV has gone away, but over the last 3 decades, more than 60 million people globally have been infected with the virus and nearly 30 million people have died of AIDS.

This makes the ongoing work of physicians and researchers such as Dr. Wafaa El-Sadr essential. She recently visited NIH to give the annual Dr. James C. Hill Memorial Lecture, “The Global Response to the HIV Epidemic: Lessons Learned and Lasting Legacy.” A full house attended her talk in Lipsett Amphitheater.



SEE EL-SADR, PAGE 4 *Dr. Wafaa El-Sadr*

Autism Awareness

Author Robison’s Inspiring Story Educates about Asperger’s

By Dana Steinberg

“Autism made me a misfit lonely kid,” said John Elder Robison at an Apr. 17 Autism Awareness Month lecture. He spoke with such eloquence, one could easily overlook that he has Asperger’s syndrome, an autism spectrum disorder.

While he is articulate and successful, Robison reminded the audience that many people with autism are not as fortunate and need help so they too can thrive.



John Elder Robison

Author of the 2007 *New York Times* bestseller, *Look Me in the Eye: My Life with Asperger’s*, Robison grew up in the 1960s before Asperger’s

SEE ROBISON, PAGE 10

More Than 80 Activities

NIH Celebrates Take Your Child to Work, Earth Day

By Dana Steinberg



Youngster enjoys “Brains Up Close” exhibit at 6001 Executive Blvd.

NIH hosted its 18th Take Your Child to Work Day and celebrated Earth Day on Apr. 25. Thousands of school-age kids (grades 1-12) came for a day of discovery and fun and their parents/guardians probably even learned a thing or two.

More than 80 activities on and off campus kept youngsters engaged and intrigued.

Some budding junior scientists conducted simple biology and chemistry experiments. Guests learned about bones, blood, the brain, diseases, robotics and rehabilitation, biomedical imaging, nutrition and exercise and more.

SEE CHILDREN VISIT, PAGE 6



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NIH...Turning Discovery Into Health



briefs

6th Annual NIH Take a Hike Day, June 6

All employees and contractors are invited to participate in the 6th annual Take a Hike Day. It will be held Thursday, June 6, from 11:30 a.m. to 1:30 p.m. Walk around the perimeter of the NIH campus (approximately 2.8 miles) rain or shine. Support your institute/center when you register at www.ors.od.nih.gov/pes/dats/wellnes/hike/Pages/hike.aspx.

Individuals with disabilities who need sign language interpreters and/or reasonable accommodation to participate should contact Joy Gaines at gainesj@mail.nih.gov or (301) 402-8180. Requests should be made at least 5 days before the event.

Panel To Discuss LGBT Bullying, June 13

In observance of Pride Month, the Office of Equal Opportunity and Diversity Management, in collaboration with Salutaris: The NIH LGBT Employees' Forum and LGBT Fellows and Friends will host a panel discussion on new and emerging research that addresses LGBT bullying. It will take place Thursday, June 13 from 10 to 11:30 a.m. in Natcher Bldg., balcony A. Panelists will address how bullying affects the physiological and psychological health of LGBT youth; how positive school environs contribute to the development of resiliency in LGBT youth; and how the intersection of race, poverty, ability and LGBT status exacerbates the susceptibility of double and triple minorities. All are welcome.

Next Protocol Navigation Lecture, June 3

The IRP Protocol Navigation Training Program Seminar Series continues with a lecture on Monday, June 3 from 1 to 2 p.m. in Bldg. 50, Conf. Rm. 1227/1328. The program is a trans-NIH effort to develop resources and tools and to provide training for intramural staff and contractors involved in protocol development, writing, coordination and management. Dinora Dominguez, chief of the patient recruitment and public liaison section at the Clinical Center, will present "Study Promotion and Patient Recruitment at the NIH: Resources Available through the NIH Clinical Center." For more information, contact Beverly Barham, (301) 594-2494, bbarham@mail.nih.gov or Marcia Vital, (301) 451-9437, vitalm@mail.nih.gov.

Use Social Media to Report Adverse Effects?

The National Library of Medicine Informatics Lecture Series will feature Dr. Graciela Gonzalez on Wednesday, June 5 from 2 to 3 p.m. in Natcher Bldg., balcony A. Her topic is "Can Social Media Provide Reliable Signals of Adverse Drug Reactions?" Gonzalez is an assistant professor in the department of biomedical informatics at Arizona State University. She is exploring the value of social media postings as a source of signals of potential adverse drug reactions soon after drugs hit the market.



The talk will be broadcast live and archived at <http://videocast.nih.gov/>. Sign language interpreters will be provided. Individuals who need reasonable accommodation to participate should contact Ebony Hughes, (301) 451-8038, Ebony.Hughes@nih.gov or the Federal Relay (1-800-877-8339). For more information about the lecture contact Dr. Jane Ye, (301) 594-4882, yej@mail.nih.gov.



NIAMS Participates in Hill Briefing on Psoriasis

NIAMS director Dr. Stephen Katz (r) recently took part in a panel discussion on psoriasis at a congressional briefing organized by the National Psoriasis Foundation (NPF) and the American Heart Association. The purpose was to shed light on co-morbidities often associated with psoriasis, including psoriatic arthritis and heart disease. Katz, an immunodermatologist, discussed NIH research advances related to psoriasis. In addition to Rep. Jim Gerlach (R-PA, not shown), who hosted the event, Katz was joined by (from l) psoriasis patient and past chair of the NPF board of trustees Richard Seiden; NIH-supported cardiologist Dr. Erin Michos from Johns Hopkins University; and NPF President and CEO Randy Beranek.



Nobel laureate Dr. Brian Kobilka (r) accepts the John Daly Award on Apr. 26 from Dr. Jurgen Wess, chief of the molecular signaling section in NIDDK's Laboratory of Bioorganic Chemistry.

PHOTO: ERNIE BRANSON

Nobel Laureate Kobilka Gives Daly Lecture

Dr. Brian Kobilka, 2012 Nobel laureate in chemistry and professor of molecular and cellular physiology and medicine at Stanford University School of Medicine, gave the annual John Daly Lecture on Apr. 26 to a packed Masur Auditorium. He spoke on "Structural Insights into G Protein-Coupled Receptor Activation."

He focused on the beta-2 adrenergic receptor model system, which he called the most extensively studied of the G protein-coupled receptors. GPCRs are versatile molecular machines that regulate the majority of physiological responses to chemically diverse hormones and neurotransmitters.

Recent breakthroughs in structural studies have advanced our understanding of GPCR signaling, particularly the selectivity of ligand recognition and receptor activation of G proteins. The insights gained from this work should facilitate the development of novel classes of ligands useful for the treatment of a wide variety of human diseases.

"The complexity of the [beta2AR] system has outpaced our ability to characterize it," noted Kobilka, "which makes it more interesting to study."

NIDDK Opens Lab in Federated States of Micronesia

NIDDK's Short-Term Education Program for Underrepresented Persons (STEP-UP) celebrated the opening of its Molecular Biology Lab in Pohnpei, Federated States of Micronesia (FSM) in a recent ceremony. The audience included the eight Micronesians accepted to this summer's STEP-UP training, their friends and relatives and staff from the Pohnpei board of education.

STEP-UP provides research opportunities for students from groups underrepresented in biomedical research, including students with disabilities, those from disadvantaged backgrounds and certain racial and ethnic minorities such as Pacific Islanders. The facility is the fourth STEP-UP lab to be built in a U.S.-administered or affiliated territory of the Pacific region. The other labs are located in American Samoa, Commonwealth of the Northern Mariana Islands and Republic of the Marshall Islands. The program will establish its fifth and last planned lab in Republic of Palau.

"Students in the Pacific region often live thousands of miles away from facilities that can support cutting-edge research," said Dr. Lawrence Agodoa, director of NIDDK's Office of Minority Health Research Coordination, which manages the STEP-UP program. "By providing laboratories and training local science teachers as mentors, we expose students to the newest biomedical research techniques without them needing to travel far from home."

As part of STEP-UP, students work over the summer at one of several NIDDK-funded labs in the United States and its territories, including the new lab in Pohnpei. Most of the students participating in the program present their research at NIH at the end of the summer program.

"We are excited to welcome students in Pohnpei and in all our labs this summer," said Agodoa. "Our hope is that the experience will encourage many to pursue biomedical research as a career."—**Krysten Carrera**



The eight students from FSM selected to participate in STEP-UP pose with various community leaders, including U.S. Deputy Chief of Mission Michael A. "Miguel" Ordoñez (rear, third from l) and Dr. Lawrence Agodoa, director of NIDDK's Office of Minority Health Research Coordination (rear, third from r).

PHOTO: DANIELLE CLEMENT

EL-SADR

CONTINUED FROM PAGE 1



▲ In 1996, antiretroviral (ARV) therapy transformed HIV/AIDS from a death sentence to a chronic disease.

“Fortunately there was a great mobilization and many in this room were part of this,” El-Sadr said. In 2003, with the establishment of the Global Fund, and then PEPFAR in 2004, “there was a historic global and U.S. government response.”

Meanwhile, in sub-Saharan Africa, health systems were in crisis, with a care model that was episodic, not continuous.

By strengthening the building blocks of health care, a new model of “continuity care,” based on chronic care systems, was launched in partnership with in-country organizations.

In addition to workforce and infrastructural changes, continuity care required a transformation of other elements: having medical records available, charting tools and a staff dedicated to data collection and data management.

“To utilize the data to enhance the quality of the programs and to inspire the achievement of targets is very important,” El-Sadr said. As for governance, “Patients are now at the table,” informing design and implementation of programs.

ICAP’s goal was to achieve “effective, equitable and efficient HIV programs.” And “something amazing happened,” El-Sadr said. “One of the most remarkable achievements ever in the history of public health.” These same health systems were transformed into ones able to provide high-quality services.

Through ICAP support, more than 1 million people with HIV and related conditions have received care and over 800,000 have been given access to ARV. Overall, the impact has been profound—death rates in PEPFAR-supported countries are down and worker productivity is up.

El-Sadr also addressed “a raging controversy.” Did global HIV response jeopardize the

“We are fortunate to have Wafaa here,” said NIAID director Dr. Anthony Fauci in opening remarks.

A MacArthur fellow and a member of the Institute of Medicine, El-Sadr has “shaped women’s health like Marie Curie and Florence Nightingale,” he added.

A distinguished physician, she is director of Columbia University’s ICAP, a large center engaged in global health programs, and principal investigator for the NIAID-funded HIV Prevention Trials Network.

As an infectious disease specialist in the 1980s, when the first HIV cases were identified in the U.S., El-Sadr created a comprehensive care model at Harlem Hospital Center in New York City, where she was chief of infectious diseases for two decades. HIV makes people vulnerable to TB, and with multidisciplinary teams, she integrated HIV and TB treatment. This may look simple on paper, but it takes long hours, tenacity and grit. It means caring.

Here’s one result: the TB treatment completion rate at the Harlem clinic jumped from 11 percent in 1992 to 95 percent in 1993. At the same time as she was working to establish models of care for individuals and families with HIV and patients with TB, she advanced the concept of community-based research through engaging the populations she served in clinical trials.

She took her local model and went global.

By creating meaningful partnerships with governmental and nongovernmental organizations within countries, said Fauci, El-Sadr’s efforts through ICAP strengthened their own health care systems and shaped the way HIV/AIDS and TB care are delivered to sub-Saharan Africa, Central Asia and other hard-hit areas.

Here’s the background:

▲ Of the estimated 34 million people living with HIV around the world, 22 million live in sub-Saharan Africa. Places most affected with HIV/AIDS have the least access to care and treatment.

▲ In 1950, life expectancy in select countries with HIV prevalence in Africa was 47 years. With the impact of the HIV epidemic, the gains in life expectancy until the 1990s have been lost.

▲ We have an entrenched epidemic in this country, El-Sadr said. The U.S. ranks seventh in terms of the number of people living with HIV globally.

Right:

Says El-Sadr, “There’s magic working on a team of researchers, implementers and a diversity of disciplines. There are lots of opportunities in HIV, from basic science all the way to public health. Every individual can find their spot in that spectrum.”

PHOTOS: ERNIE BRANSON

response to other health threats such as TB, malaria and maternal-child health services?

Fortunately, there is little evidence that confirms these fears. El-Sadr's team has published articles showing that there may in fact be synergies benefiting non-HIV conditions, such as in maternal health as demonstrated by an increase in deliveries by HIV-uninfected women at health facilities.

Lessons learned from the HIV response include:

▲ "A huge paradigm shift" beyond episodic care towards life-long care works for both care and prevention.

▲ Adaptation of the HIV chronic care model for confronting chronic non-communicable diseases. A pilot study that adapted HIV-related tools and examined their feasibility and effectiveness in a diabetes clinic showed "substantial improvements in some of the measurements."

▲ The HIV prevention and care cascade means you can't succeed in just one element, but in the whole process. No simple fix.

▲ Telescoping the time period from discovery to action, rapidly implementing and scaling up innovations.

▲ Research on implementation and scale-up is necessary in order to advance knowledge and public health impact.

▲ Then there's the power of people. "The power of affected communities...generates demand, energy, brings people to our programs and keeps them engaged."

In the discussion after her presentation, El-Sadr was asked if we're going to have the same leadership and focus on the HIV epidemic in the next generation.

"I believe that we have to enable new leadership. There's magic working on a team of researchers, implementers and a diversity of disciplines. There are lots of opportunities in HIV, from contributing in the basic sciences all the way to being engaged in public health. Every individual can find their place in that spectrum." ●

Therapy Offers Personalized Care for Cancer Patients

In the inaugural lecture of a new series of talks on molecular diagnostics, Dr. David Sidransky of Johns Hopkins University and Hospital discussed results of his research, which included a novel technique: tumor grafting therapy.



Dr. David Sidransky discusses a novel technique, tumor grafting therapy.

Appearing recently before an audience at Lister Hill Auditorium as part of the Excellence in Molecular Diagnostics Lecture Series, Sidransky described how he used tumor grafting therapy to determine the best drug treatment for his patients with advanced cancers. These included colorectal and pancreatic cancer as well as mesothelioma—a cancer of the lining of the body's organs such as the lungs.

As one example of his technique, he discussed a patient with pancreatic cancer who had a poor prognosis. Using tumor grafting

therapy, Sidransky harvested tumor samples from the patient, divided the tumors into segments and grafted them into immune-deficient mice. The mice with the implanted tumor samples were then treated with a panel of drugs. By determining the therapy that was most effective in an individual mouse, he inferred which therapy would be the most effective in treatment of the patient.

Further, tumor samples can be banked and tested again, should a patient have a relapse requiring additional therapy.

"Dr. Sidransky's talk was timely and marks the beginning of our lecture series that will track and highlight promising developments in the area of molecular markers that may lead to early detection and treatment of cancer," said Dr. Nada Vydellingum, a program director in the cancer biomarkers research group in NCI's Division of Cancer Prevention. "Every cancer tumor is unique. We know patients with the same type of cancer often react differently to a specific drug—some are helped and others are not. So, using a technique such as tumor grafting therapy offers patients a good chance of receiving the best drug for treatment of their tumor."

The lecture series recognizes leaders who are making groundbreaking contributions in molecular diagnostics. Among his many honors, Sidransky was named by *Time* magazine in 2001 as one of the top scientists in the U.S. for his work on early detection of cancer. In addition to being a professor of oncology, otolaryngology, cellular and molecular medicine, urology, genetics and pathology at Johns Hopkins, Sidransky is also director of the head and neck research division at the university.—Linda Perrett



CHILDREN VISIT

CONTINUED FROM PAGE 1

Above, from l: *The Center for Information Technology's Teresa Shea (r) invites youngsters to try out low-vision glasses and walking canes and discusses tools that help the blind thrive in the workplace.*

Children inspect organisms displayed by CC medical technologist Teresa Genson Bauch.

Under tents sprawled across Bldg. 1's front lawn, Earth Day exhibits taught visitors about NIH's green initiatives, including greener lab practices and how everyone can take part in reusing and recycling toward a cleaner planet.

Kids Learn, Explore NIH Community

One ever-popular event was "Fantastic Voyage" at the Clinical Center's clinical pathology

department. Children made rounds, dressed in scrubs, visiting each of five tables: chemistry, hematology, immunology, microbiology and phlebotomy. They looked in microscopes, Petri dishes and test tubes, learning about cells and other tiny organisms.

Over in the Clinical Center's south lobby, the exhibit "A Journey into Blindness" displayed a Harry Potter book in Braille and assistive tech-

NIBIB Shares Cutting-Edge Research with Local Youngsters

By Margot Kern

At NIH's Take Your Child to Work Day, kids and parents gathered with mouths agape as two children wearing special EEG caps typed words on a computer screen using only their thoughts.

Developed by a NIBIB grantee to help severely paralyzed individuals communicate, the caps—which record electric activity from the brain—were just one of many research technologies showcased by NIBIB during the day-long event.



NIBIB scientist Hank Eden uses an ice cube to draw a design, visible only by infrared camera, on the arm of Mary Vasilchenko.

In the morning, nearly 60 visitors ages 8-15 competed in teams to see how many questions they could answer correctly during a NIBIB-run game show called "Who Wants to Be a Bioengineer?" Topics included regenerative medicine and rehabilitation engineering, biomedical imaging and brain-computer interfaces.

Children learned about innovative research such as smart prostheses that can pre-



Lisa Harris turns to smile at the crowd that watched her spell C-A-T-S using only her thoughts.

dict your next move and a novel technology that delivers electrical stimulation to the spinal cord and has already helped one paralyzed man stand and regain additional functioning.

Kendall Coles, a 10th grader who participated in the game show and aspires to be a bioengineer, was surprised to learn that a man who lost his fingertip in an accident was able to re-grow it by applying an extract of pig bladder to the wound.

"I didn't know regenerative medicine was possible," said Coles. When asked why he wanted to be a bioengineer, he replied, "I like how it helps everyone."

In the afternoon, kids listened intently as intramural scientist Hank Eden explained different imaging techniques such as CT, MRI, PET and infrared imaging. Hands shot into the air as volunteers were called to demonstrate how an infrared camera generates images by detecting heat.



Patrick Shirdon (r), NIA executive officer, offers free soil to Mikayla Muldoon at the Earth Day event.

nology such as voice-recognition software and computer screen-reading software for the iPad. The exhibit was designed to educate seeing coworkers and children about blindness and promote equal opportunity.

“We want people to get the concept by showing the technology that allows the visually impaired to get by in the work world,” said Anne “Mitzi”

With the camera pointed towards him, one boy wrote his name on a blank poster using only the heat from his finger. A girl squirmed and then laughed as cold water dripping from an ice cube onto her forearm appeared as a stream of black liquid under the camera.

Later in the presentation, short movies—generated using the latest CT imaging software—allowed kids to travel virtually through winding blood vessels and deep into the inner ear. At one point, 3D glasses were handed out and guests took a trip through a patient’s colon, during which mushroom-like polyps popped out of the screen.

After the presentation, the youngsters were split into groups and taken into intramural labs where they viewed the eye of a fruit fly at 700 times its normal size under a scanning electron microscope. Using a light microscope, they also examined a volvox—a type of algae that forms spherical colonies of up to 50,000 cells.

Dr. John Paul SanGiovanni, a scientist at the National Eye Institute, has been taking his two boys to the NIH-wide event for the past 13 years. He says it’s the stories the scientists tell that benefit children the most. “They come home from the event and they retell those stories, and while they’re doing that, they’re extracting important scientific principles.”

SanGiovanni’s son, Daniel, is a seventh grader and has been to Take Your Child to Work Day five times. When asked what impressed him most

during the day he replied, “The microimaging. I never knew you could get so close to an object.” He added, “Every time I come, I learn something new.” Daniel says he eventually wants to become a chemical engineer.

Grace Peng, a program director at NIBIB and emcee of “Who Wants to Be a Bioengineer?” said her favorite part of hosting the game show was “eliciting the oohs, ahhs and ewws from the kids.” She added, “I’m gratified when they have discussion and debates over the questions we’ve posed, and I love their follow-up impromptu questions.”

Peng brought both her two sons and her neighbor’s sons to the event. “I think the day is really important,” she said. “It exposes kids to what their parents do, what NIH is all about and it opens up their minds to the latest information about science.”

On the Sunday following Take Your Child to Work Day, NIBIB had an opportunity to share new developments in biotechnology with children outside of the NIH community by participating in the 24th annual Rockville Science Day held at Montgomery College. NIBIB brought the special EEG caps to the event and people of all ages flocked to the exhibit for the opportunity to control a computer using their thoughts. The exhibit was one of 70 hands-on displays that ran the gamut of topics from the environment and nature to space exploration, biotechnology, robotics and rockets. Close to 4,000 visitors attended this year.

Kosciulek, a human resources specialist at NIH who helps recruit people with disabilities. Teresa Shea, a co-founder of the employee support group 3 Blind Mice, who is blind, invited kids to try on low-vision glasses and use walking canes.

At the Neuroscience Center on Executive Blvd., NIMH and NIDA held interactive sessions to demonstrate how the brain and spinal cord control movement and muscle contractions. Another exhibit, “Brains Up Close,” featured human and small animal brains on display. Some brave kids put on gloves and held one.

While many children learned about the scientific side of NIH, many also learned about the important, non-scientific jobs that support the NIH community.

The NIH Fire Department offered a firehouse tour and demonstrated the stop, drop and roll technique for extinguishing flames. The NIH Police were out on



“Looking Through the Microscope” event at 6001 Executive Blvd.

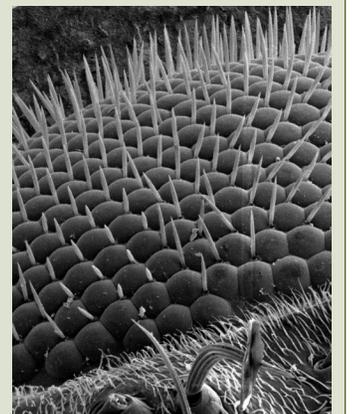


Above:

Jerry Shen wears 3D glasses while viewing the inside of a person’s colon.

Below:

The surface of a fruit fly’s eye at 700X



SEE PAGE 8



Above:

At “Fantastic Voyage,” head technician Mohamed Kamara teaches visitors about phlebotomy.

Below:

Ofcr. Gary Pickering talks with moms about campus security while children pet the K9 unit’s explosive-sniffing dog Boomer.



CONTINUED FROM PAGE 1

Bldg. 31’s back lawn letting kids try on police gear, sit in a police car and learn about crime prevention. Ofcr. Gary Pickering brought Boomer, one of the department’s explosive-sniffing dogs. On break from checking vehicles and suspicious packages, Boomer charmed many of those who stopped by to pet him.

At Rockledge, “American Science Idol” let young grant reviewers evaluate made-up research applications and choose the best one to fund.

In the medical arts wing in the basement of the Clinical Center, young folks made crafts at “Artist in You” and learned about medical illustration, design and production in the TV/video/photography studio. “Kids learned how design, creativity and video all fall under art,” said Tammie Edwards, Medical Arts branch chief. “Researchers tell their stories through communication,” she said.

Going Green at NIH

People of all ages celebrated Earth Day. The R&W took youngsters on an educational nature walk. Under tents by Bldg. 1, kids and adults learned ways to reduce their carbon footprint.

Jacqueline Johnson and Montae Reeves from the Division of Environmental Protection (DEP) were overseeing recycling and composting bins, showing people where to toss their trash. “We’re promoting recycling on campus,” said Johnson. “We’ll be starting a compost program in the cafeterias soon.” Johnson said DEP composted more than 65 tons of animal bedding (wood chips, fibers from animal cages, etc.) and food waste from cafeteria prep areas in March alone.

At one tent, Katie Muldoon, project analyst at NIAID, and her 10-year-old daughter Mikayla were given seedlings—pink or purple azaleas—to plant at home. At another exhibit, NIDDK’s Minoos Shakoury-Elizeh displayed green practices in her lab, including cleaner equipment,

avoidance of radioactive materials and reuse of Styrofoam, since it cannot be recycled.

Nearby, youngsters were putting their names on green paper leaves and hanging them on a “Pledge Tree.” Pledges included recycling, encouraging friends and family to recycle and promising to turn off computers and TVs when not in use.

Crispin Hernandez, an industrial chemist, coordinates a sustainability project on campus to redistribute unused chemicals. He uses the NIH FreeStuff web site as a tool to promote this practice. NIAID launched the NIH FreeStuff site (<http://stuff.nih.gov>), a sustainability tool to help employees post, search and exchange unused chemicals, office equipment and lab supplies.

“We spend so much money on chemical disposal,” he said. “We have surplus chemicals on campus—never consumed and in good condition—and we should use and reuse them.” As of April 2013, Hernandez estimates NIH has saved more than \$4,000 in surplus chemical redistribution using the FreeStuff program. He will describe the program at a meeting of the lab managers interest group on Thursday, June 13 at noon in Bldg. 40, Conf. Rm. 1203. 📍

NIH Director’s Awards Ceremony Set, June 12 in Natcher Bldg.

All employees are invited to attend the 2013 NIH Director’s Awards Ceremony. The event honors employees for outstanding support of NIH’s mission. The ceremony will be held Wednesday, June 12 at 2 p.m. in Kirschstein Auditorium, Natcher Bldg.

Awards will be presented in six categories: Director’s Awards (scientific/medical, administrative and technical/clerical/support), Common Fund Leadership Awards, Ruth L. Kirschstein Mentoring Awards, Alan S. Rabson Award for Clinical Care, Commissioned Corps Awards and EEO Awards. A reception will be held after the ceremony in the Natcher dining room.

Sign language interpreters will be provided. Individuals who need reasonable accommodation to participate should contact Moniqua Roberts at (301) 496-6211 or niwards@od.nih.gov. To watch the live video-cast, visit <http://videocast.nih.gov/>.

digest

Study Provides Clarity on Supplements to Protect Against Blinding Eye Disease

Adding omega-3 fatty acids did not improve a combination of nutritional supplements commonly recommended for treating age-related macular degeneration (AMD), a major cause of vision loss among older Americans, according to a study from the National Eye Institute. The plant-derived antioxidants lutein and zeaxanthin also had no overall effect on AMD when added to the combination; however, they were safer than the related antioxidant beta-carotene, according to the study published online May 5 in the *Journal of the American Medical Association*.

The Age-Related Eye Disease Study (AREDS), which was led by NEI and concluded in 2001, established that daily high doses of vitamins C and E, beta-carotene and the minerals zinc and copper—called the AREDS formulation—can help slow the progression to advanced AMD. The American Academy of Ophthalmology now recommends use of the AREDS formulation to reduce the risk of advanced AMD. However, beta-carotene use has been linked to a heightened risk of lung cancer in smokers. And there have been concerns that the high zinc dose in AREDS could cause minor side effects, such as stomach upset, in some people.

In 2006, NEI launched AREDS2, a 5-year study designed to test whether the original AREDS formulation could be improved by adding omega-3 fatty acids; adding lutein and zeaxanthin; removing beta-carotene; or reducing zinc. The study also examined how different combinations of the supplements performed. Omega-3 fatty acids are produced by plants, including algae, and are present in oily fish such as salmon. Lutein and zeaxanthin are carotenoids, a class of plant-derived vitamins that includes beta-carotene; both are present in leafy green vegetables and, when consumed, they accumulate in the retina. Prior studies had suggested that diets high in lutein, zeaxanthin and omega-3 fatty acids protect vision.

Women's, Men's Brains Respond Differently to Hungry Infant's Cries

Researchers at NIH have uncovered firm evidence for what many mothers have long sus-

pected: women's brains appear to be hard-wired to respond to the cries of a hungry infant.

Researchers asked men and women to let their minds wander, then played a recording of white noise interspersed with the sounds of an infant crying. Brain scans showed that, in the women, patterns of brain activity abruptly switched to an attentive mode when they heard the infant cries, whereas the men's brains remained in the resting state. The findings appear in *NeuroReport*.

"Previous studies have shown that, on an emotional level, men and women respond differently to the sound of an infant crying," said study co-author Dr. Marc Bornstein, head of the child and family research section of NICHD, which conducted the study. "Our findings indicate that men and women show marked differences in terms of attention as well."

Earlier studies showed that women are more likely than men to feel sympathy when they hear an infant cry and are more likely to want to care for the infant.

Study Uses Botox to Find New Wrinkle in Brain Communication

NINDS researchers used the popular anti-wrinkle agent Botox to discover a new and important role for a group of molecules that nerve cells use to quickly send messages. This novel role for the molecules, called SNAREs, may be a missing piece that scientists have been searching for to fully understand how brain cells communicate under normal and disease conditions.

Every day, almost 100 billion nerve cells throughout the body send thousands of messages through nearly 100 trillion communication points called synapses. Cell-to-cell communication at synapses controls thoughts, movements and senses and could provide therapeutic targets for a number of neurological disorders, including epilepsy.

Nerve cells use chemicals, called neurotransmitters, to rapidly send messages at synapses. Like pellets inside shotgun shells, neurotransmitters are stored inside spherical membranes, called synaptic vesicles. Messages are sent when a carrier shell fuses with the nerve cell's own shell, called the plasma membrane, and releases the neurotransmitter "pellets" into the synapse.

SNAREs (soluble N-ethylmaleimide-sensitive factor attachment protein receptor) are three proteins known to be critical for fusion between carrier shells and nerve cell membranes during neurotransmitter release.

"Without SNAREs there is no synaptic transmission," said Dr. Ling-Gang Wu of NINDS.

Botulinum toxin, or Botox, disrupts SNAREs. In a study published in *Cell Reports*, Wu and his colleagues describe how they used Botox and similar toxins as tools to show that SNAREs may also be involved in retrieving message carrier shells from nerve cell membranes immediately after release.



ROBISON

CONTINUED FROM PAGE 1

What Is Asperger's Syndrome?

Asperger's syndrome is a mild form of autism, characterized by social impairment, communication difficulties and repetitive, restrictive patterns of behavior. People with Asperger's are considered the most highly functioning on the autism spectrum.

Symptoms include lack of eye contact and facial expressions; absence of back and forth conversation; trouble maintaining relationships; having fixated interests; and exhibiting repetitive and/or eccentric behaviors. The cause remains unknown. Treatment generally consists of behavioral therapy.

The condition is named for Hans Asperger, an Austrian doctor who in 1944 observed several children and documented the autistic symptoms that have come to characterize this disorder. Asperger's observations, published in German, were largely unknown for several decades until a British doctor in 1981 published case studies of children with similar symptoms. Asperger's became more widely studied and was classified as a distinct disease in the early 1990s.

was commonly diagnosed. "People like me, and there are lots of us, were told we were stupid, lazy, defiant or different," he said. "I certainly was very lonely as a child. I was a kid who never knew what to say...When you're young, all you feel is the weight of that disability and the sting of rejection."

Living in social isolation, virtually friendless, he spent most of his time studying what he loved: electronics and music. "That was when the first glimmer of a gift emerged in me," he said. This passion led him on an incredible life journey.

Robison started out repairing guitar amps for local musicians. Before long, he was building equipment for Pink Floyd's sound company. He proudly recounts designing the smoking guitars that became a signature special effect for the rock band KISS.

Then Robison began making sound effects for popular video games. At the height of his success, he quit, questioning his skills and his colleagues' perceptions of him. The disability that had cultivated opportunity also created the fear and vulnerability that prevented his advancement.

"It's the perfect example of how autistic disability can take a career away from somebody," he said. "Social disability can cripple the most articulate and seemingly smart and successful person. I could not tell how colleagues felt about me. I convinced myself they thought I was no good, even though they really held me in high regard. I left, wrongly believing I was worthless."

He left electronics to start a luxury car repair business. One day, a customer told him about Asperger's, that he seemed like a classic case. "For the first time, I saw I was not a loser and a reject. I was just a guy with Asperger's." It took years of hard work but he eventually would transform his social life. "I'm the same person I always was but the difference is I've learned not to do the totally weird and bizarre stuff that used to drive people away. I've learned to let people into my world."

Today, Robison is a writer and public speaker who hopes to inspire young people to see beyond their disability toward a bright future. But when he gives speeches, he worries that people will hear his success story and question the need for autism funding. Not everyone is so fortunate. Many people with autism, equal-



"Autism brings us extreme gifts and extreme disability," Robison said. "Our job is to figure out how to bring the gift out" and fully integrate these promising individuals into society.

ly bright and articulate, have lived their entire lives on disability, he said. Many can't progress through the school system. Many end up underemployed or unemployed.

While Robison believes scientific research is important, he said a cure could be decades away; people living with Asperger's and other autism disorders need help now. "We need to develop a broad range of therapies that address the practical problems that people with autism are living with every day."

Robison lauded such places as Ivymount, a school in Rockville helping thousands of special needs students from ages 4 to 21, and its partnership with NIH's Project SEARCH that provides many kids with practical experience leading to employment. But more resources are needed for children and adults. And when promising new approaches are developed—such as new talk therapies—they should be made more widely available in the community, he said.

"Autism brings us extreme gifts and extreme disability," Robison said. "Our job is to figure out how to bring the gift out" and fully integrate these promising individuals into society.

The lecture, "Being Different: Remediating Disability While Embracing Uniqueness," was sponsored by the interagency autism coordinating committee, a federal advisory committee that raises autism awareness; Robison is a private citizen member. His latest book, released this spring, is titled *Raising Cubby: A Father and Son's Adventures with Asperger's, Trains, Tractors and High Explosives*. ①



milestones



Mabry Named Acting Deputy Director of OBSSR

Dr. Patricia L. Mabry has been appointed acting deputy director of the Office of Behavioral and Social Sciences Research.

She joined OBSSR in 2005 as a health scientist administrator and became a senior advisor in 2007. She has been a key figure in bringing systems science methods to the forefront in behavioral and social sciences research and has led the annual training course, the Institute on Systems Science and Health (2009-2012). She has also led the development of several funding opportunity announcements.

Mabry has published in a variety of scientific journals, including *The Lancet*, *American Journal of Public Health* and *PLoS Computational Biology*. In recognition of her scientific leadership in systems science and health, she has been elected a fellow of the Society of Behavioral Medicine.

Mabry earned her Ph.D. in clinical psychology from the University of Virginia. Before coming to NIH as a contractor in 2002, she was an assistant professor in the department of psychiatry and behavioral sciences at the Medical University of South Carolina. She has also worked in small business settings developing computer-assisted smoking cessation treatments and dietary change interventions.

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New Scientific Review Officers at NIGMS

NIGMS recently added two staff members to its Office of Scientific Review.

Dr. Nina Sidorova manages the review of scientific meeting, conference and workshop grant applications and will also handle review of research and research training grant applications in areas including biochemistry and biophysics. She comes to NIGMS from NICHD, where she was an intramural staff scientist. Before joining NIH, Sidorova was a junior research scientist at the Engelhardt Institute of Molecular Biology, Russian Academy of Sciences. She earned a B.S.-M.S. in physics



Dr. Nina Sidorova (l) and Dr. Shinako Takada recently joined NIGMS's Office of Scientific Review.

from Moscow State University and a Ph.D. in biology from the Engelhardt Institute. Sidorova conducted postdoctoral research at NIDDK, CIT and NICHD.

Dr. Shinako Takada handles the review of applications for the Support of Competitive Research (SCORE) program as well as other research and research training grant applications in areas including molecular and cell biology and biochemistry. Prior to coming to NIGMS, she was associate director of the department of DNA MOD engineering at Intrexon Corp. Before that, Takada was an associate professor in the department of biochemistry and molecular biology at the University of Texas MD Anderson Cancer Center. She earned a B.S. in biology from Ochanomizu University and a Ph.D. in medical science from the University of Tokyo, both in Japan. Takada conducted postdoctoral research at the Japanese Foundation for Cancer Research and the University of California, Berkeley.

NAS Elects Two from NIH

Two NIH scientists are among the 84 new members and 21 foreign associates from 14 countries elected to the National Academy of Sciences in recognition of their distinguished and continuing achievements in original research.

Dr. Louis M. Staudt is deputy chief of the Metabolism Branch, Center for Cancer Research, National Cancer Institute. Dr. Wei Yang is senior investigator and section chief, Laboratory of Molecular Biology, National Institute of Diabetes and Digestive and Kidney Diseases.

New NAS members bring the total number of active members to 2,179 and the total number of foreign associates to 437.

The National Academy of Sciences, now celebrating its 150th year, is a private, non-profit society of distinguished scholars. Established by an Act of Congress, signed by President Abraham Lincoln in 1863, NAS is charged with providing independent, objective advice to the nation on matters related to science and technology. Nearly 500 members of the NAS have won Nobel prizes.



Dr. Louis Staudt
PHOTO: RICHARD FOLKERS



Dr. Wei Yang



Members of Congress Visit NIH, Get Science Briefing

PHOTOS: ERNIE BRANSON

A bipartisan delegation of 9 members of Congress, led by House majority leader Rep. Eric Cantor (R-VA), visited the Clinical Center on May 9.

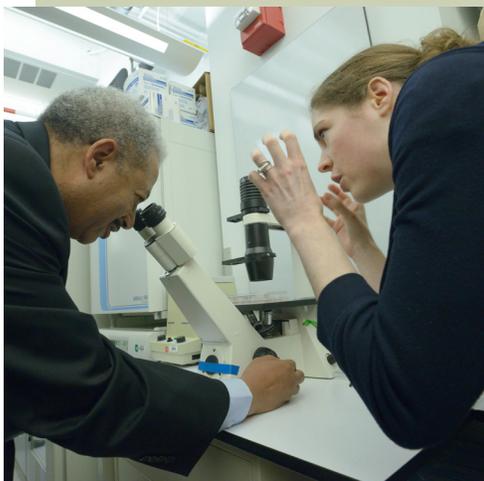
After overviews in the CRC lobby by NIH director Dr. Francis Collins and CC director Dr. John Gallin, the group shared a working lunch with NIH leadership.

Afterwards, they were led on a tour of NCI's Laboratory of Molecular Biology of Lymphoid Malignancies, where Dr. Louis Staudt, deputy chief of the Metabolism Branch in the Center for Cancer Research, briefed them on his research.

"[I explained] how a precise molecular diagnosis of cancer can lead to targeted therapies that produce remissions while having few side effects," he noted. "I provided an example from our ibrutinib trial in which one woman whose tumor was refractory to chemotherapy went into a complete remission that has so far lasted more than 2.5 years. We have overall a 41 percent response rate in the ABC subtype of diffuse large B cell lymphoma."



Left: NIH director Dr. Francis Collins (l) greets Rep. Eric Cantor (R-VA). **Above:** In the NCI Laboratory of Molecular Biology of Lymphoid Malignancies, members of Congress take in a briefing by Dr. Louis Staudt (r), deputy chief of the Metabolism Branch. **Below:** At left, Rep. Chaka Fattah (D-PA) peers through a microscope as postdoctoral fellow Dr. Anna Mazzucco explains which lymphoma cells have been treated with the drug ibrutinib. Staudt and colleagues are using the drug in clinical trials. At right, Collins (c) leads a working lunch with NIH leadership including (from l) NCATS director Dr. Chris Austin, CC director Dr. John Gallin, NIH principal deputy director Dr. Lawrence Tabak, NIH deputy director for science, outreach and policy Dr. Kathy Hudson, NIAID director Dr. Anthony Fauci and NHLBI director Dr. Gary Gibbons.



At left, in the Medical Board Room, Cantor (third from l) and colleagues (from l) Congressman Earl Blumenauer (D-OR), Rep. Ted Yoho (R-FL) and Congressman Michael Burgess (R-TX) share lunch. At right, Congresswoman Renee Ellmers (l, R-NC) talks with Mazzucco and staff scientist Dr. Ryan Young, as he explains the experiment he set up for the tour. He took a cell line model of the ABC subtype of diffuse large B cell lymphoma and treated it (or not) with ibrutinib. The ibrutinib killed the cancer cells in the culture wells, just as it kills lymphoma cells in the Staudt lab's phase II clinical trial.