

nih record



ABOVE • Fascination with gray matter begins for some kids at Brain Awareness Week, which featured NIH exhibits. See story below.

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'A Light for the World'

Vaccine Research Center Celebrates First Decade

By Rich McManus

When NIH director Dr. Francis Collins called the Vaccine Research Center “not only a light for NIH and the United States, but also a light for the world” on the occasion of its 10th anniversary celebration Mar. 31 at Natcher Bldg., he could have been anticipating the breadth of the succeeding scientific symposium. The 4½-hour session ranged the globe as top experts in the field unpacked everything from the design of sophisticated new molecules built to block HIV infection, to new strategies for creating a universal flu vaccine, to evidence—harvested largely from many thousands of animal fecal samples from the wilds of Africa—of HIV’s primate origins.



VRC director Dr. Gary Nabel has led the center for all of its history and credited its people as its main strength.

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Male/Female Differences Offer Insight Into Brain Development

By Charlotte Armstrong

In nearly all neuropsychiatric disorders there are differences in prevalence and age of onset between males and females. In illnesses such as schizophrenia, the symptom profile and response to treatment differs markedly between males and females. Despite these observations, according to speakers at a recent workshop on sex differences in the brain, scientists in many cases are studying mostly males in their animal research on the brain, or including both sexes, but not examining whether they differ.

Brain-based male/female differences—a frequent topic of popular media coverage—in fact offer an invaluable scientific opportunity for learning how the circuitry of the brain develops. Speakers at the NIMH-sponsored workshop, “Sex Differences in Brain, Behavior, Mental Health and Mental Disorders,” offered a series of provocative findings and a view of the potential this work has for revealing how

SEE SEX DIFFERENCES, PAGE 4



Students (l) at Brain Awareness Week get a lobe lesson from Dr. Daniel Stimson of NINDS.

Six NIH Institutes Host Exhibits Brain Awareness Week Teaches Kids Power of the Human Brain

More than 300 students from the Washington, D.C., area participated in the 12th annual Brain Awareness Week celebration recently at the National Museum of Health and Medicine, Walter Reed Army Medical Center. Students in grades 5 through 8 engaged in interactive activities sponsored by 6 NIH institutes that focused on brain health and research.

Brain Awareness Week is an annual interna-

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briefs

STEP Forum on Knowing Your DNA Sequence

The staff training in extramural programs (STEP) committee will present a Science in the Public Health forum on the topic "Knowing Our DNA Sequence: What It Means for You and Me," on Tuesday, May 3, from 8:30 a.m. to 12:30 p.m. in Rockledge II, Rm. 9112-9116.

Is genome-based medicine the future of health care? Since the completion of the human genome sequence we have begun to determine the genetic makeup of individuals. Genome sequence information is already being used to advance our understanding of human biology and origins. Soon our personal genome sequences may be part of our medical records. Join us as we explore the current state of personalized medicine, its potential impact on health and disease and what the future may hold for us.

Bench-to-Bedside Awardees Lecture, May 5

The Clinical Center and the translational research interest group will present the following Bench-to-Bedside Lectures on Thursday, May 5, 1-3 p.m., Lipsett Amphitheater, Bldg. 10. Ann C.M. Smith, senior genetic counselor, Office of the Clinical Director, NHGRI, will discuss "A Hard Day's Night: Treatment of the Circadian Sleep Disturbance in Smith-Magenis Syndrome." Dr. Mike Iadarola, chief, neurobiology and pain therapeutics section, NIDCR, will speak on "New approaches to pain control using agonists and allosteric modulators of TRPV1, a key peripheral integrator of pain and inflammation."

The Bench-to-Bedside Awardees Lecture Series highlights novel research projects resulting from partnerships formed under the Bench-to-Bedside Award Program. For more information, visit www.cc.nih.gov/cc/btb/lectures.html.

Mold Your Future at Career Symposium, May 10

The NIH Office of Intramural Training & Education invites all NIH graduate students and postdoctoral trainees—basic scientists and clinicians—to participate in the NIH Career Symposium on Tuesday, May 10 at the Natcher Conference Center and Lister Hill Auditorium from 8 a.m. to 4:30 p.m. The symposium provides an opportunity for fellows and graduate students to learn about scientific career options and to explore factors that lead to career success. Former HHS Secretary Donna Shalala, president of the University of Miami, will keynote this all-day event. To register, visit www.training.nih.gov.

Plain Language/Clear Communication Awards Ceremony, May 17 in Masur

NIH will celebrate outstanding writing and production from across the agency at the Plain Language/Clear Communication Awards ceremony on Tuesday, May 17 at 1 p.m. in Masur Auditorium, Bldg. 10. All are welcome to attend.

Health and science writer Maggie Fox, managing editor for technology and health care at the National Journal Group and long-time correspondent for Reuters, will give the keynote address on "Losing the Static: How Compromise Helps People Hear You."

The Office of Communications and Public Liaison, OD, sponsors the Plain Language/Clear Communication initiative and the awards program. Keep an eye on www.nih.gov/clearcommunication/plainlanguage.htm for a growing number of helpful resources.

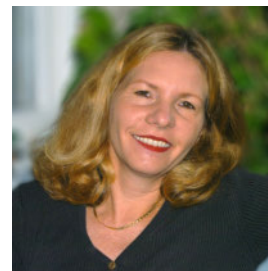
Sign language interpretation will be provided. For other reasonable accommodation, call (301) 496-5787 or the Federal TTY Relay (1-800-877-8339) before the event.

2nd Annual RecGov Fair, May 17

On Tuesday, May 17, the R&W will host the 2nd annual RecGov Fair on the Bldg. 31A patio from 10 a.m. to 2 p.m. More than 30 vendors will participate, offering great discounts and specials to NIH employees. Check out discounts on cell phone services, vacation packages, corporate housing, home services and more. In addition, Chick-Fil-A will be on hand with lunch for sale. R&W will also hold a door prize raffle for all attendees. Enjoy an afternoon of food, discounts and fun.

CSR Names New Ethics Coordinator

MonaLisa Lynch is the new ethics coordinator at the Center for Scientific Review. She comes to CSR from the Department of Labor's Mine Safety and Health Administration, where she served as ethics officer. She was the agency's top technical expert for ethics matters within its nationwide organization of over 2,200 employees. She also led an ad hoc team responsible for reviewing and certifying more than 1,800 confidential financial disclosure reports, resulting in a higher percentage of covered staff than any other agency at the DOL.





NIH director Dr. Francis Collins visited a mobile HIV/AIDS testing and counseling clinic during a tour of NIH-supported research activities in Soweto.

PHOTO: ANN PUDEBAUGH

Collins Visits Research Sites in South Africa

By Ann Puderbaugh

NIH director Dr. Francis Collins recently spent time in South Africa cultivating two new international ventures he's supporting through the Common Fund and visiting a number of NIH-funded research sites.

In Cape Town, he participated in a 2-day gathering of geneticists in discussing how to shape the Human Heredity and Health in Africa Initiative, which aims to encourage the study of genomics and environmental determinants of common diseases with the goal of improving the health of African populations. A partnership with the Wellcome Trust, the program will help develop the necessary expertise among African scientists and establish networks of African investigators.

In Johannesburg, Collins joined the inaugural meeting of the Medical Education Partnership Initiative (MEPI), which is intended to strengthen training in sub-Saharan Africa to improve the quality and quantity of health care workers available.

With funding from the U.S. President's Emergency Plan for AIDS Relief and NIH, the program supports awards in a dozen African countries, jointly administered by Fogarty and the Health Resources and Services Administration. Seventeen NIH institutes and centers and the Common Fund are participating in the initiative that will invest up to \$130 million over 5 years.

"This is a hopeful time," observed Dr. Francis Omaswa, co-leader of MEPI's coordinating center. He opened the gathering, calling it "the largest-ever meeting of African medical educators...we are making history...this is really a milestone in Africa's development."

The more than 230 participants included several African ministers of health, deans and faculty of the region's leading medical schools, two U.S. ambassadors and numerous African and American collaborators.

Despite its enormous population and burden of disease, sub-Saharan Africa has only a fraction of the health care workers it needs, Collins told the group.

MEPI will also encourage researchers by addressing the lack of infrastructure and support to make research a viable career, protected time to conduct investigations and the data management necessary for population studies, Collins said.

MEPI is unique in that it empowers African leaders to define local needs and develop the most appropriate solutions, said Eric Goosby, the U.S. global AIDS coordinator. He called for "sustained intellectual honesty" and an acknowledgement of "the important role that research plays in anchoring an inquiring mind" in clinical as well as scientific work, both "essential to improving the quality of care."

MEPI's African leaders should think creatively and experiment with new ways of teaching, said Fogarty director Dr. Roger Glass. "We have great hopes for what you can achieve."

Collins also visited the University of Cape Town and several field research sites in the area, in addition to meeting with scientists from NHLBI's Center of Excellence, focused on addressing the growing problem of chronic disease. In addition, he met with scientists at the University of Witwatersrand's research operation in Soweto and visited a mobile HIV/AIDS diagnosis and counseling unit. During a trip to Durban, he toured the NIAID-funded Centre for the AIDS Programme of Research in South Africa at the University of KwaZulu-Natal and visited its rural Vulindlela research site. 📍

NIAID Fellows Recognize Outstanding Mentors

NIAID recently awarded its third annual Outstanding Mentor Award to Dr. Rick Fairhurst, chief of the malaria pathogenesis and human immunity section, Laboratory of Malaria and Vector Research, and to Dr. Kanta Subbarao, chief of the emergency respiratory viruses section, Laboratory of Infectious Diseases. The award acknowledges exemplary mentoring and guidance to the institute's research trainees.



Drs. Kanta Subbarao (l) and Rick Fairhurst

"We are now publicly recognizing the many mentors at NIAID who are dedicated to sharing knowledge and inspiring and instilling confidence in our fellows," said Wendy Fibison, associate director for NIAID's Office of Training and Diversity.

Subbarao is working to better understand the pathogenesis of influenza and the development of vaccines against pandemic strains of the virus. One of her mentees said she "embodies everything I have ever hoped for in a mentor."

Fairhurst focuses on mechanisms of malaria pathogenesis, human genetic resistance to malaria and acquired immunity to malaria and travels frequently to malaria-endemic areas. One of the nominations in support of his award noted that the term mentor is "overused and underexplained." It described Fairhurst as a trusted counselor, a teacher and an inspiration—"Rick redefines the word mentor to me."

Both awardees have trained numerous students from both the United States and abroad. They received their awards at NIAID's fifth annual Fellows Retreat, held recently at the National Press Club in Washington, D.C.



SEX DIFFERENCES

CONTINUED FROM PAGE 1

Above:

A recent NIMH-sponsored workshop showed that brain-based male/female differences offer an invaluable scientific opportunity for learning how the circuitry of the brain develops.

genes, hormones and experience shape the developing brain.

Studies that do track sex have reported intriguing findings related to brain development and function. Speaker Dr. Elizabeth Sowell, at the University of California, Los Angeles, noted that there are gender differences in the trajectory of gray matter maturation in adolescent girls and boys that may have lasting effects on the brain. Dr. Cheryl Sisk of Michigan State University reported on work in rats showing that pubertal hormones influence the addition of new cells to areas of the brain that show sex-related differences, thus demonstrating the role of these hormones in maintaining these structural differences.

Several speakers talked about sex hormone effects on learning and memory. Dr. Larry Cahill, University of California, Irvine, noted that, in women, stress hormones affect memory differently, depending on the phase of the menstrual cycle. Men and women viewing emotionally charged films show activation of different sides of the amygdala, a part of the brain that is central to emotional memory: in men, the right amygdala is activated, in women, the left amygdala is activated. Even the activity of the amygdala at rest is different in men and women. Dr. Tracey Shors of Rutgers University reported that, in work with rats, stress improves learning in males, but impairs it in females.

Even prenatally, stress has different effects on male and female offspring. Dr. Tracy Bale, at the University of Pennsylvania, reported on research in mice showing that maternal stress early in pregnancy affected how male offspring responded to stressful situations; they responded more like females. This work suggests differences in effects of early vs. late prenatal stress and may offer clues to why prenatal stress is

associated with greater risk of such disorders as depression, anxiety, schizophrenia and autism.

One of the goals of this research is to identify how sex differences are established and maintained in the brain. Genes on the X and Y chromosomes set in motion the processes of sexual differentiation. The expression of numerous genes on non-sex, or autosomal, chromosomes, also differs according to whether they are inherited from the mother or father, a process called imprinting. Understanding imprinting could lead to therapies for disorders that are shaped by paternal or maternal inheritance of an abnormal gene.

During development, sex hormones have so-called organizational effects on the brain that persist once established, even if the hormones are removed, and activational effects, which depend on the continued presence of hormones.

Finally, experience can shape gene expression and with it, sexual differentiation and behavior. Speaker Dr. Anthony Auger of the University of Wisconsin reported that in rats, mothers groom male and female offspring differently; the differential can alter gene expression and can contribute to sex differences in the brain, with lasting effects on social and emotional behavior. Social deficits are a feature of some neurodevelopmental disorders; knowledge of these mechanisms could provide clues to therapy.

NIMH intramural investigator Dr. Jay Giedd, who has been using MRI to conduct a long-term study of brain development, emphasized that there is enormous variability among individuals. Differences between groups do not imply individual differences. Trajectories, rather than one-time measurements, determine IQ, health and illness and male/female differences.

Developmental trajectories also predict periods of vulnerability to illness and effective intervention. Dr. Arthur Arnold of UCLA speculated that identifying the factors that protect one or the other sex from disease could lead to novel therapies that enhance those factors.

In any event, the full range of sex differences in neural connectivity—and their implications for understanding and treating mental illness—remain to be fully explored. ①

feedback

Wondering about some aspect of working at NIH? Ask anonymously at www.nih.gov/nihrecord/index.htm (click on the Feedback icon) and we'll try to provide answers.

Have you posted a question, but not seen a response yet? Check out the frequently asked questions at <http://nihrecord.od.nih.gov/faq.htm>. We try to answer as many original queries as space allows, without repeating.

Feedback: With all the additional traffic on Rockville Pike due to BRAC construction and BRAC impending use, Wilson Dr. gets terribly backed up when employees are trying to leave. I fail to understand why our NIH traffic gurus think it makes sense to jam everyone into the same exit? Why not let people exit onto Cedar? Also, there used to be an option to exit (right turn only) onto Rockville Pike near the intersection but that is blocked with a ramp and gate—why?

Response from the Office of Research Services: NIH is considering a number of transportation-related options including the increased use of exits onto Old Georgetown Rd. to alleviate the expected congestion. Also, the South Dr. entrance/exit on Old Georgetown, currently closed to complete the construction of the Porter Neuroscience Research Center, may be available sooner than originally anticipated.

In addition, NIH is looking at a number of options to increase exiting campus during rush hour. The possible reconfiguration of West Dr. at West Cedar Ln. to allow exiting of high-occupancy traffic is one option we are analyzing. This entrance is currently used exclusively for patients. Any proposed modification must have minimal impact to patients entering campus and not negatively impact traffic on Cedar Ln.

As to the intersection blocked by a ramp, we believe you are referencing North Dr., not Wilson Dr. If so, during construction of the MLP-10 parking garage, the state required that exiting be right turn only. Several years ago, the exit was closed due to budget constraints. Given the even more difficult budgetary situation, we do not anticipate receiving funding to allow for that exit to reopen at this time. It currently is open until 10 a.m. as an entrance only and requires guard/police staffing at all times it is open. Budgetary constraints may

also affect other entrances/exits in the upcoming fiscal years.

NIH has no control over the traffic lights on Rockville Pike. Although the timing of the signal light at Wilson Dr. is under the jurisdiction of the Maryland State Highway Administration, they allow Montgomery County to control the lights. Repeated requests by NIH to increase the exit timing of lights at this intersection have been unsuccessful. 🗨️



On hand for the presentation of a gift from the NIH Federal Credit Union to the Children's Inn at NIH are (from l) Steve Levin, vice president of marketing, NIHFCU; Juli Anne Callis, chief executive officer, NIHFCU; Kathy Russell, inn chief executive officer; Fern Jennifer Stone, the inn's director of development & public relations.

Credit Union Supports New Playground at Inn

The NIH Federal Credit Union plans to help design and build a new playground at the Children's Inn at NIH. The inn, which marked its 20th anniversary in 2010, has long wanted to update its playground and outdoor play area, which sits on a hill. The location has made it difficult for children with physical challenges and older caregivers to access the playground easily.

The NIHFCU has pledged support of the new playground over a 5-year period. The new playground will be designed to appeal to all children, regardless of age, physical strength or abilities. The entrance to the play area from the inn will be a "garden path" that will include walkways with seating for children and families, mazes and labyrinths, interactive sound and music elements, a tree house, swings and a jungle gym, art and sculpture such as whirligigs and wind socks and creative night lighting.

The credit union will cover the costs of installing decorative wind poles within the playground, as well as several paths, bridges and elevated walkways connecting the inn to the playground.

Since the inn opened in 1990, more than 10,000 children and families have stayed there. It can accommodate up to 59 families.



VRC ANNIVERSARY

CONTINUED FROM PAGE 1

Above, from l:

NIH director Dr. Francis Collins opened the anniversary, calling the VRC “an exciting and highly productive part of the NIH community.”

Dr. Glenda Gray of the University of Witwatersrand explained why a vaccine is so important to her country: “HIV is not in recession in South Africa.”

Nobel laureate Dr. David Baltimore, professor of biology at Cal Tech, said the VRC embodies science’s relentless search for an effective HIV vaccine.

Dr. Beatrice Hahn of the University of Alabama, Birmingham, has traced the origins of HIV-1 to Africa in the 1920s.

PHOTOS: MICHAEL SPENCER

Still, the birthday present all in attendance most keenly desired—an effective AIDS vaccine—remains an elusive goal.

“I consider it the outstanding failure of modern biology,” said Nobel laureate and Cal Tech biology professor Dr. David Baltimore, in closing remarks, “that we have not yet delivered [a vaccine] when society is most in need.

“But that’s not for a lack of will, or of skill,” he continued, “but because of the inventiveness of nature, which is ahead of our technology.”

The VRC, Baltimore said, embodies the hopes of a scientific community “that has not yet given up...Let a thousand flowers bloom,” he said, before launching into a description of efforts in his own laboratory to “engineer immunity” to HIV by creating neutralizing antibodies that could be delivered by intramuscular injection.

According to VRC director Dr. Gary Nabel, the center’s first and only leader, the past 2 years have seen dramatic progress in structure-based design of candidate HIV vaccines. “I consider pre-2009 the Dark Ages,” he said.

Two antibodies (originally derived from a patient with HIV infection)—VRC 01 and VRC 02—have been developed to block HIV from entering human immune cells and appear to be effective against most strains of HIV. These antibodies, and others recently isolated, “open a new window on broadly neutralizing antibodies,” said Nabel. “I expect dozens, and perhaps hundreds, more as we converge on a common, shared epitope.”

Right from the start, the VRC fashioned itself as a center for all of vaccinology, not just AIDS, explained two of the center’s founding influences, NIAID director Dr. Anthony Fauci and NCI director (and former NIH director) Dr. Harold Varmus. They made the case for a vaccine center

to the Clinton administration in the mid-1990s.

The crucial meeting, said Fauci, took place Dec. 3, 1996, at the White House, when the NIH scientists briefed Clinton and Vice President Al Gore on HIV biology, capturing their attention. Five months later, at a commencement address at Morgan State University in Baltimore, Clinton announced plans for a new vaccine center on the NIH campus. Barely 2 years after that, Clinton presided over the laying of the cornerstone of the Dale and Betty Bumpers Vaccine Research Center, which opened in 2001.

While the bulk of the symposium focused on HIV, Nabel, Fauci and others underscored the VRC’s valuable contributions to vaccines for:

Influenza—A universal vaccine—based on a DNA prime and vector boost—has emerged as a possibility within the past 4 years.

Ebola—A vaccine that proved effective in non-human primates is now in human trials.

SARS—Fauci said the virus was first characterized on Mar. 24, 2003, and that by Dec. 13, 2004, a SARS vaccine entered clinical trials. “That’s truly the world’s indoor record,” he quipped. “That is light speed.”

Epstein-Barr virus—Varmus emphasized the importance of an EBV vaccine to global health since it could prevent infectious mononucleosis and certain neoplastic diseases with which it is associated.

West Nile virus—The VRC is a major leader, Fauci said, in proof-of-concept studies of a DNA vaccine.

Chikungunya virus—The VRC has crafted a VLP (virus-like particle) vaccine that is entering phase I trials with Merck. Chikungunya, noted Fauci, is a serious disease in the developing world.



NCI director Dr. Harold Varmus was among the first at NIH to recognize the importance of a physical and intellectual center for vaccine study on campus. He said the VRC sends an important signal about maintaining strong support for vaccine studies in an era that has become suspicious of the therapy.

Said Nabel, "The complementarity of different vaccine approaches has been extremely helpful."

Two of the day's speakers made it clear that vaccinology these days cannot be practiced without a passport. Dr. Beatrice Hahn, professor of medicine and microbiology at the University of Alabama at Birmingham, collects fecal samples at sites throughout Africa to study viral pathogens and parasites. She gave evidence that HIV-1 originated around 1920 in chimpanzees and

estimated that the virus spent 60-80 years in people without being recognized. "AIDS afflicted chimpanzees long before humans," she said.

Dr. Glenda Gray of the University of Witwatersrand in South Africa underscored why the hunt for an HIV vaccine is so crucial. In her country of 49 million people, HIV prevalence is around 11 percent, or 5.6 million people. Thirty percent of the pregnant women in South Africa harbor HIV, she said, and life expectancy there is only 49 years.

"The fabric of society is incredibly damaged by the high rate of death in women at the peak of their child-bearing years," she said.

Only one-third of the patients who need antiretroviral therapy in South Africa actually get it, she continued, and about 10 million men need circumcision, which can lower the transmission of HIV.

Given the challenge of outlining where the field moves next, Cal Tech's Baltimore applauded the recent focus on antibodies. "That is the most important attitudinal change," he said. He is encouraged by mouse studies in his lab whereby an adeno-associated virus acts as a delivery system for antibody production.

Concluded Nabel, "I hope that by the 15th reunion, we'll be talking about the [HIV] vaccine."

Meet the Combatants: HIV vs. VRC

The Vaccine Research Center is not just the gleaming tower on the west side of campus, colloquially known as Bldg. 40 (and a decent place to talk about science over pizza, noted NIAID director Dr. Anthony Fauci, who visits a few times each month for updates). There are three complementary components: NVITAL (NIAID Vaccine Immunogenicity T-Cell and Antibody Laboratory) in Gaithersburg, a small GMP (Good Manufacturing Practices) vaccine pilot plant in Frederick, Md., and a core clinical facility in the Clinical Research Center, not to mention the "Vaccines for Life" van that serves as a mobile HIV clinic.

The VRC has 211 employees, has published more than 670 papers, has created 37 products used in trials and has completed 41 clinical trials. Twelve trials are ongoing or planned for 2011. Nearly 5,000 research subjects have been enrolled in VRC trials over the last decade, for all diseases under its purview.

On the other side of the ring is HIV. At least 33 million people around the world are living with HIV, said Fauci. For the past 10-15 years, the number of new HIV infections in the U.S. alone has hovered stubbornly in the neighborhood of 56,000.

HIV has infected more than 60 million people since the first



NIAID director Dr. Anthony Fauci gave the "30,000-foot overview" of VRC activities in the past decade.

cases were reported almost 30 years ago, in June 1981, said VRC director Dr. Gary Nabel, and there have been more than 25 million deaths. Each year, about 1.8 million people die of AIDS, creating a situation where, with 2.6 million new infections each year, the number of people living with HIV continues to increase.



BRAIN WEEK

CONTINUED FROM PAGE 1

Above, clockwise from 1: Students at this year's Brain Awareness Week have fun at the Cool Spot Carnival.

Students were offered a number of opportunities to learn basic brain anatomy and function. Some seemed to enjoy holding a real human brain.

A student tries on the pull-apart model of a human brain for size.

Students are fooled into thinking that a rubber hand is part of their own bodies.

PHOTOS: MELISSA J. BRACHFELD

Below: Activities included a "Brain Derby" that elicited eager responses from the kids. Several youngsters earned certificates dubbing them "brain scientists."



tional partnership of government agencies, scientific organizations and university and volunteer groups. It was begun 16 years ago by the Dana Alliance for Brain Initiatives, a non-profit organization of more than 200 preeminent neuroscientists dedicated to advancing brain education.

NIH received positive feedback from both students and teachers. Each institute contributed activities from a unique perspective:

NIDA Offers 'Derby' Atmosphere

Teams of students competed in the "NIDA Brain Derby," fielding questions about the brain, neuroscience and the neurobiology of drug abuse. Youngsters had the opportunity to learn basic brain anatomy and function as well as how different drugs—including nicotine (cigarettes)—can affect the brain and alter its normal function. Winning teams received a "brain scientist" certificate. NIDA also distributed student and teacher packets of print materials.

NINDS Brings the 'Lobe-oratorium'

NINDS's "Brain Lobe-oratorium" featured neuroscientists who described the functions of the four lobes of the human brain using life-size brain models and a full-color, interactive exhibit. Visitors learned about the parts of the brain involved in perception, thinking, personality and behavior through a kid-friendly series of questions and answers, eye-catching photos and a pull-apart model of a human brain. In addition to the model, students could touch and hold a real human brain.

NIAAA Says, 'Pick Your No's'

NIAAA's "Cool Spot Carnival" started with a presentation on alcohol and adolescent brain development. Students learned about the effects of alcohol on teen/tween brains and the lifelong consequences of underage drinking. When asked, "What can happen to your brain if you drink alcohol?" one middle schooler answered, "Alcohol can impair nerve cell growth." Students also played a football-toss game while wearing "fatal vision goggles" to simulate being under the influence of alcohol.



Another game, Pick Your No's, demonstrated effective ways to say no to alcohol.

NIMH Talks Memory, Brain Damage

At the NIMH activity station, students were fooled into thinking that a rubber hand was actually part of their own bodies and they learned how mirror therapy can reduce phantom limb pain in amputees. Students also explored "Memory and the Brain," learning how recollections are stored and what happens when even a small part of the brain is damaged.

NIA Describes the Brain as It Gets Older

NIA engaged students in a discussion about brain aging, focusing on how the brain and cognitive function—thinking, learning and memory—changes with age. Students learned about new evidence linking healthy lifestyle habits with prevention of cognitive decline, like Alzheimer's disease, in later life.

NICHD Shows 'Drunken Brain'

NICHD had a novel, multisensory exhibit titled the "Drunken Brain" where students saw firsthand the effects of alcohol on the brain and how alcohol exposure during pregnancy and adolescence can lead to possible brain damage and alcohol addiction later in life.—Cathrine Sasek

Treatment Found for Common Fever in Children

A preliminary study conducted by an NIH team has identified a promising new treatment for the most common periodic fever disease in children. The syndrome is called periodic fever associated with aphthous stomatitis, pharyngitis and cervical adenitis—or PFAPA—and is characterized by monthly flare-ups of fever, accompanied by sore throat, swollen glands and mouth lesions.

The proposed treatment, which will be validated in a larger study before it is recommended, wards off an inappropriate immune system attack without increasing the frequency of flare-ups, a problem caused by the current standard treatment with corticosteroids. Researchers from NHGRI and NIAMS reported their findings in the Apr. 8 early online edition of the *Proceedings of the National Academy of Sciences*.

“Until now, the basis of PFAPA has been a mystery,” said senior author Dr. Daniel Kastner, NHGRI scientific director. “Advances in genomic analysis have allowed us to define a major role for the innate immune system, the body’s first line of defense against infection. Targeting a specific product of white blood cells at the first sign of fever appears to abort the attacks.”

‘Warm’ Line Helps Tackle Substance Abuse

A free, nationwide service was launched Apr. 8 to help primary care providers identify and advise substance-abusing patients. The service, Physician Clinical Support System for Primary Care (PCSS-P), offers peer-to-peer mentorship and resources on incorporating screening and follow-up into regular patient care. PCSS-P is a project of NIDA and the American Society of Addiction Medicine. NIDA also launched a quick screening tool to help health care providers identify these patients.

The warm line service—“warm” because the response is within 24 hours rather than an immediate response typical of a hotline—is available free to physicians and other health care providers. Providers register with PCSS-P and receive the contact information of a mentor who is a specialist in screening, brief intervention, treatment and referral for patients with substance abuse problems. To use the service, physicians can call (877) 630-8812, or register online at www.PCSSmentor.org.

CAM Talk Lacking Between Patients, Providers

Despite their high use of complementary and alter-

native medicine (CAM), Americans over age 50 often do not discuss CAM use with their health care providers, a survey indicates. The results, from AARP and NCCAM, were released Apr. 13.

Overall, 53 percent of respondents reported that they had used CAM at some point in their lives. Among those, 58 percent said they had discussed CAM with a health care provider. This dialogue is important because, while CAM is a part of health and wellness for many Americans, some CAM products can interact with conventional medicine. CAM is a group of diverse medical and health care interventions, practices, products or disciplines that are not generally considered part of conventional medicine. CAM includes natural products such as herbal supplements and manual therapies and mind/body practices such as chiropractic care, massage, acupuncture and meditation.

Distribution of Cancers Shifts Dramatically in HIV/AIDS Population

As treatments for HIV/AIDS improve and patients are living longer, the distribution of cancers in this population has undergone a dramatic shift in the U.S. While cases of the types of cancer that have been associated with AIDS progression have decreased, cases of other types of cancer are on the rise. NCI and CDC reported these results online Apr. 11 in the *Journal of the National Cancer Institute*.

The CDC uses the presence of certain diseases, including three cancers—Kaposi sarcoma, non-Hodgkin lymphoma and invasive cervical cancer—as part of the criteria to determine whether an HIV-infected person has developed AIDS. The introduction of highly active antiretroviral therapy in 1996 resulted in improved immune function, reduced risk of AIDS progression and greatly improved survival for people infected with HIV. As a result, cases of those AIDS-defining cancers decreased threefold, from 34,000 cases between 1991 and 1995 to about 10,000 cases between 2001 and 2005. In contrast, the total number of all other cancers tripled, from around 3,000 in the earlier period to 10,000 in the latter period. Since 2003, annual counts of these other cancers in the HIV/AIDS population have exceeded the number of AIDS-defining malignancies.

People with HIV infection are known to be at increased risk for certain cancers not classified as AIDS-defining malignancies. Of these, the most common are anal, lung and liver cancers and Hodgkin lymphoma. Higher risks for these malignancies stems from co-infections such as human papillomavirus, hepatitis B and C viruses and Epstein-Barr virus, as well as higher smoking rates in the HIV/AIDS population.—compiled by Carla Garnett



Americans over age 50 often do not discuss CAM use with their health care providers, a survey indicates.

Alumnus Goldwater Dies at 89

Dr. William H. Goldwater, who retired in 1993 after serving 40 years at NIH, died Feb. 23 at his home in Bethesda after a long illness. He was 89.

Goldwater and his family moved to Bethesda in 1959 when he began his career at NIH as an executive secretary of the metabolism study section in the Division of Research Grants. He held positions in the extramural programs of the National Heart Institute and National Institute of Environmental Health Sciences before moving to the Office of the Director in 1970 as special assistant, Office of Extramural Research and Training.

From 1974 to 1984, he was extramural programs policy officer, OERT. In 1985, he was appointed to his final NIH position as director, Extramural Programs Management Office, Office of Extramural Research.

During his federal career, Goldwater received numerous honors including the NIH Director's Award (1978) and the Public Health Service Superior Service Award from the Department of Health and Human Services (1989).

Goldwater was also a fellow of the American Association for the Advancement of Science, a fellow of the American Heart Association and a member of the American Chemical Society.

He attended Columbia University, where he earned his B.A. degree in 1941 and Ph.D. in biochemistry in 1947. After graduation, he spent several years in various academic positions in New York, then became assistant professor of medicine at Tulane University School of Medicine.

He joined the federal government in 1952 as a radiological biologist at the U.S. Naval Radiological Defense Laboratory in San Francisco.

Following retirement, Goldwater remained active in the community with a number of organizations including the National Association for Retired Federal Employees and the Jewish Council for the Aging of Greater Washington.

Goldwater's wife of 62 years, the Hon. Marilyn Goldwater, was a long-time legislator in the Maryland House of Delegates before she retired in 2007. Survivors also include two children, Charles and Diane, both of Los Angeles; one granddaughter, Marissa Skye; and a brother, Robert, of Hartsdale, N.Y.



Dr. William H. Goldwater died on Feb. 23.

NIDDK Mourns Death of Ameen

Dr. Vanessa Z. Ameen, who joined NIDDK's Division of Digestive Diseases and Nutrition as a senior scientific advisor in January 2010, died 13 months later on Feb. 21 at age 57. She suffered a ruptured aneurysm in early February and never regained consciousness.



Specializing in pediatrics and gastroenterology, Ameen was recruited to NIH from private industry, where she had been medical director to several large pharmaceutical manufacturers.

She also brought an academic perspective to NIH. She had been an assistant professor of pediatrics at Temple University, where she was responsible for patient care, teaching, research and administration in pediatric gastroenterology, hepatology and nutrition. She also had taught at Indiana University and the Medical College of Wisconsin.

Ameen had impressed her soon-to-be bosses at NIDDK with her extensive experience in research administration and her expertise in both pediatric and adult gastroenterology. Once hired, she was appointed science officer for the Patient-Reported Outcomes Measurement Information System (PROMIS), a network of NIH-funded facilities working to develop better measures for care. Despite her short tenure at NIDDK, Ameen had earned widespread admiration, both personally and professionally, from her new colleagues.

She "understood the critical need for the development of patient-reported outcomes for diseases such as irritable bowel syndrome," said Dr. James Witter, medical officer in the Division of Skin and Rheumatic Diseases at NIAMS, who worked with Ameen on PROMIS. "She worked diligently and tirelessly to support and promote this important research."

"Vanessa was much more than an expert in her field," said Dr. Jill Carrington, director of gastrointestinal development and epithelial biology and inflammation at NIDDK. "She was a wonderful person who just loved being with people, eating Caribbean food and watching American football."

Ameen is survived by her husband and two children, her mother, two sisters and a brother.



Arthritis Foundation ambassadors and NIAMS staff

Arthritis Advocates Tour NIH

In addition to rubbing elbows with members of Congress, 13 advocates from the Arthritis Foundation's (AF) Ambassador Program got up close and personal with NIAMS researchers during a recent visit to NIH as part of the foundation's recent 2011 Advocacy Summit. The ambassadors volunteer to serve as liaisons between the AF and their congressional district's representative. They inform legislators about the impact of arthritis on their communities and advocate for government policies and funding for research.

In what some ambassadors described as a "once in a lifetime opportunity," they heard presentations about the latest research advances from NIAMS scientists and toured labs where they peered into microscopes to see experiments. NIAMS director Dr. Stephen Katz provided an overview of NIH and NIAMS, which celebrates its 25th year in 2011. NIAMS scientific director Dr. John O'Shea and Dr. Richard Siegel, NIAMS acting clinical director and chief of the Autoimmunity Branch, shared accomplishments in the NIAMS rheumatoid arthritis research and rheumatology training programs. Dr. Robert Colbert, chief of the Pediatric Translational Research Branch, discussed advances in pediatric rheumatology.

During a tour of Siegel's and Colbert's labs, the ambassadors looked into microscopes at cells being studied for research on TNF receptor 1-associated periodic fever syndrome and human induced pluripotent stem cells used for research on skin diseases. The ambassadors also were able to hear how the research translates into patient diagnoses and disease prevention and treatment.

The ambassadors commended NIAMS scientists on research advances that have been "life changing." They enjoyed learning about current research, as well as about discoveries looming on the horizon.

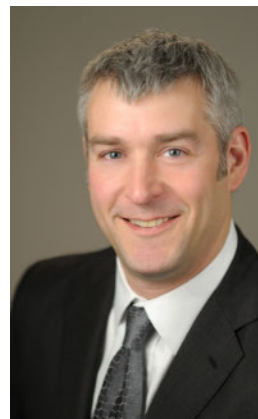
R&W Touted as 'Good Neighbor'

At the annual Red Cross Awards Ceremony, the NIH Recreation & Welfare Association was recognized with the "Good Neighbor" Award. It was given in appreciation to R&W for obtaining, on a weekly basis, the latest DVDs and providing meals for wounded soldiers at Bethesda Naval Hospital. Shown are (from l) Sherrie Brown, senior vice president, Service to the Armed Forces, American Red Cross; Randy Schools, R&W president; David Browne, director of operations and employee services, R&W; and RDML Thomas E. Beeman, deputy commander, National Intrepid Center of Excellence.



McMahon Advises NEI on Translational Research

Dr. Matthew McMahon has joined the National Eye Institute as senior advisor for translational research. He has a broad neuroscience background in academic and industry-sponsored vision research.



After graduate studies in retinal structure, function and visual perception, he served as senior principal scientist for Second Sight, Inc., for 5 years. Second Sight is a medical device company that is developing a retinal prosthesis for the blind. McMahon learned first-hand about the regulatory and financial challenges facing biotechnology companies in translating novel interventions. His team worked with biomedical engineers, ophthalmologists and patients to improve the retinal implant system and to acquire international marketing approvals.

In 2009, McMahon moved to Capitol Hill as a AAAS science and technology policy fellow for the Senate committee on commerce, science and transportation. He helped draft legislation that authorized funding for science education and research and NASA. Most recently, he served on the House science and technology committee, where he oversaw innovation, manufacturing, technology transfer and bioscience policy.

In the newly created NEI position, McMahon will facilitate existing translational research activities and participate in trans-NIH initiatives. He is also responsible for identifying emerging opportunities to advance small molecules, gene- and cell-based therapies, medical devices and other novel therapeutics through public-private partnering with the pharmaceutical and biotechnology industries.

Said NEI director Dr. Paul Sieving, "Eye and vision research has matured to a point where an increased understanding of disease mechanisms has led to new and novel treatment insights. Such proof-of-concept studies are the lifeblood of translational research and form the basis for pre-clinical studies and subsequent clinical trials. Dr. McMahon is uniquely suited to furthering the NEI's pursuit of the vision translational research enterprise."



NIEHS research fellow Quiana Childress is studying a protein that may play a role in the tissue rejection that some lung transplant patients face.

PHOTO: STEVE MCCAWE

Once Homeless, NIEHS Fellow Pursues Medical School Dream

Quiana Childress, a young NIEHS research fellow, has gone from being homeless in rural Arkansas to following her dream of becoming a doctor. Her life is proof that anything is possible if you never give up.

Childress said that she grew up in the Arkansas Delta. Her family didn't have much money, so she worked as a certified nursing assistant while attending high school. When her home life became unstable and she wound up living in her car, she focused on two things that made her happy—school work and playing varsity basketball.

"Sometimes, I had to wake up at 3 a.m. to study," Childress explained. "I didn't mind the long hours because I loved serving as team captain and getting good grades in school. These were circumstances I could control."

Knowing that she would have a hard time paying for college, even with scholarships, Childress completed a 1-year licensed practical nursing program after finishing high school. After receiving her LPN, she entered the University of Arkansas, Pine Bluff (UAPB) as a biology major. She utilized her nurse's training by working in the infirmary at a nearby all-male maximum security prison, where she became an inspiration to the inmates.

Childress said of the experience, "Some of the guys came up to me and said, 'You inspire us. We didn't all quite have it that bad and we took different routes. You didn't.'"

For most people, college and work would be a big enough challenge, but Childress said she also volunteered for several organizations and took advantage of research opportunities. All of her hard work paid off in 2010, when Childress graduated from UAPB *summa cum laude* with a bachelor's degree in biology. UAPB commencement speaker First Lady Michelle Obama singled her out at the graduation ceremony as an example of triumph over adversity.

At NIEHS, Childress is studying a protein that may play a role in the tissue rejection that some lung transplant patients face. She is applying to medical school and is anxiously awaiting acceptance.

"Regardless of how it turns out," she said, "I want people to know that seemingly impossible situations can be overcome with prayer, perseverance and helping others."—Matt Goad

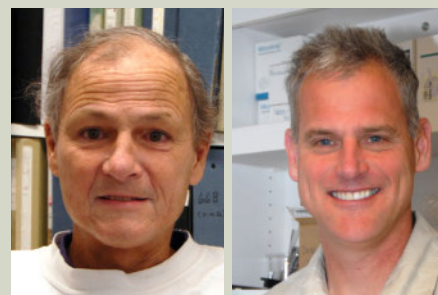
Eight NIH's Elected to AAM

Eight NIH scientists, including six from NIAID, are among 78 microbiologists recently elected to fellowship in the American Academy of Microbiology. Fellows are elected annually through a highly selective, peer-review process, based on their records of scientific achievement and original contributions that have advanced microbiology.

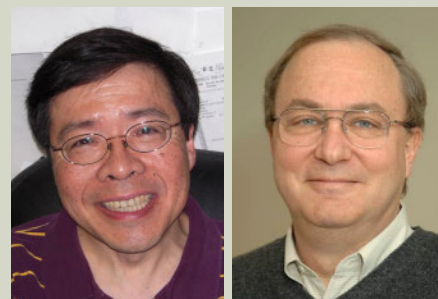
The NIAID inductees are as follows:

Dr. Susan Pierce, chief of the Laboratory of Immunogenetics; Dr. Kuan-Teh Jeang, chief of the molecular virology section in the Laboratory of Molecular Microbiology; Dr. Bruce Chesebro, chief of the Laboratory of Persistent Viral Diseases; Dr. Xin-zhuan Su, chief of the malaria functional genomics section in the Laboratory of Malaria and Vector Research; Dr. Robert Heinzen, chief of the *Coxiella* pathogenesis section in the Laboratory of Intracellular Parasites; Dr. Kanta Subbarao, chief of the emerging respiratory viruses section in the Laboratory of Infectious Diseases.

Also named were Dr. Michael J. Lichten, a research microbiologist in the microbial genetics and biochemistry section of NCI's Laboratory of Biochemistry and Molecular Biology, and Dr. Abner Notkins, chief, experimental medicine section, Oral Infection and Immunity Branch, NIDCR.



Above, Dr. Bruce Chesebro (l) and Dr. Robert Heinzen; below, Dr. Kuan-Teh Jeang (l) and Dr. Michael J. Lichten



Above, Dr. Abner Notkins (l) and Dr. Susan Pierce; below, Dr. Xin-zhuan Su (l) and Dr. Kanta Subbarao

