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MARCH 4, 2011

VOL. LXIII, NO. 5

*The Second Best Thing About Payday*

# nih record

*Fought for Freedom, Respect*

## Black History Event Honors African Americans' Civil War Contributions

By Valerie Lambros

This year's Black History Month observance focused on the role of African Americans in the Civil War. The country marks the 150th anniversary of the start of the conflict this year.

The event, sponsored by the Office of Equal Opportunity and Diversity Management and the NIH Black Employment Program committee, provided "an opportunity to hear more about the contributions of African Americans to this nation," said Dr. Lawrence Tabak, principal deputy director of NIH, in welcoming remarks.

He recalled several prominent black scientists who have guided NIH, including the



*Historian Royce Kinniebrew gives keynote address at Black History Month observance.*

**SEE BLACK HISTORY, PAGE 6**

## USAID's Shah Calls for More Science to Sustain Global Health Gains

By Steve Goldstein

Paying tribute to NIH as an institution that envisions the world as it could be, not as it is today, USAID administrator Dr. Rajiv Shah extolled the role of scientific research in raising health standards around the world.

In a health address at NIH, Shah called for a new global health system that better connects NIH research discoveries with development efforts on the ground "and produces real breakthroughs in our capacity to improve the health of the poor."

Harnessing the power of invention—scientific, technological and behavioral—on behalf of the developing countries is what will make a real impact on improving global health, he declared. "We cannot simply seek to do more of the same in an effort to provide services using currently available tools and technologies," he said. "Instead, we need to focus our efforts on facilitating a continuum of invention and innovation from bench to bush."



*Dr. Sean Eddy of HHMI Janelia Farm explains how researchers read the code of the human genome.*

## Scientists Shed Light on Future of Genomics

By Jeannine Mjoseth

Prominent investigators in genomic research shared their visions of the field's future with a crowd at Natcher Conference Center on Feb. 11. The meeting, hosted by the National Human Genome Research Institute, marked the release of its new strategic vision for genomics, which was published Feb. 10 in *Nature*.

Joining NHGRI director Dr. Eric Green for

**SEE GENOMICS, PAGE 4**



## briefs



### Author Skloot To Give Rall Lecture

The annual J. Edward Rall Cultural Lecture is titled "The Immortal Life of Henrietta Lacks," and will be given by Rebecca Skloot, an award-winning science writer whose articles have appeared in the *New York Times Magazine*, *O, The Oprah Magazine* and others. The talk will be held Monday, Mar. 14 from 10 to 11 a.m. in Masur Auditorium, Bldg. 10.

Skloot's debut book *The Immortal Life of Henrietta Lacks* became an instant *New York Times* bestseller. It won the *Chicago Tribune* Heartland Prize and the Wellcome Trust Book Prize and was named Best Book of 2010 by Amazon.com and a Best Book of the Year by *Entertainment Weekly*, *O, The Oprah Magazine*, *The New York Times* and numerous others. It is being translated into more than 20 languages and adapted into a young adult book and an HBO film produced by Oprah Winfrey and Alan Ball.

Skloot has worked as a correspondent for NPR's *Radiolab* and PBS's *NOVA scienceNOW* and is guest editor of *The Best American Science Writing 2011*. She has taught at the University of Memphis, the University of Pittsburgh and NYU.

Seating is on a first-come, first-served basis. Once Masur hits capacity, people will be directed to Lipsett Amphitheater for overflow seating.

An online simulcast of the lecture will be available at <http://videocast.nih.gov>. For more information, contact Sarah Freeman at (301) 594-6747 or [sarah.freeman@nih.gov](mailto:sarah.freeman@nih.gov).

### STEP Forum on Pain Management, Mar. 22

The staff training in extramural programs (STEP) committee will present a Current Controversies in Medicine forum on the topic "I Haven't Got Time for the Pain—Is It Ever That Simple?" on Tuesday, Mar. 22, from 9 a.m. to noon in Rockledge II conference center, Rm. 9112-9116.

Many diseases, syndromes and conditions cause chronic and acute pain that affect quality of life. Pain is the most common reason people seek treatment; however many people still experience pain unnecessarily. Join us for this informative forum to learn about the latest breakthroughs in traditional

and non-traditional options for the treatment and management of pain.

### Alternative Testing Panel To Meet

The National Toxicology Program Interagency Center for the Evaluation of Alternative Toxicological Methods, which is headquartered at NIEHS, is convening an international peer review panel Mar. 29-30 in the Natcher Conference Center. The panel will evaluate results from an international validation study of an *in vitro* test method using a human cell line to detect endocrine-disrupting compounds. The meeting is free and open to the public. Register by Mar. 15 at <http://iccvam.niehs.nih.gov/contact/reg-form-EDpanel.htm>.

### Women's History Month Program Set, Mar. 16

NIH's annual Women's History Month observance will be held on Wednesday, Mar. 16 from 11 a.m. to noon in Wilson Hall, Bldg. 1. This year's theme is "Our History is Our Strength." NIH deputy director for extramural research Dr. Sally Rockey will be the keynote speaker. She will share information on her career trajectory, how she became interested in extramural research administration and reflections on the impact of women in science at NIH.

### NIH Golf Association To Begin Play

The NIHGA is an 18-hole co-ed league that welcomes golfers of all skill levels to play in a friendly, competitive environment. Play occurs mid-week at a different nearby course approximately every second week beginning in April. The NIHGA currently has 6 teams of about 25 players each. The league plays 8 stroke play events, followed by a double-elimination team match play tournament of up to 7 outings. Handicaps are maintained by the league. Play in any or all of the outings at some of the best golf courses in the Maryland/Virginia area, as your schedule permits. And enjoy the benefit of mid-week, group-outing prices, usually in the \$50 range. There are prizes for longest drive and closest-to-the-pin at every event. The year is capped off with a scramble that includes golf, cart and dinner as well as trophies and other prizes. For more information about the league, including the 2011 schedule, see [www.recgov.org/nihga](http://www.recgov.org/nihga) or contact Howard Somers at [somersh1@netscape.com](mailto:somersh1@netscape.com).

### Circus Night Benefits NIH Children's Charities

Ringling Bros. and Barnum & Bailey Circus will bring the 140th edition of "The Greatest Show on Earth" to Verizon Center on Wednesday, Mar. 23. The 14th annual Children's Premiere Night, hosted by R&W and benefiting the NIH Charities, begins with a free pre-show at 6 p.m. followed by the main event at 7. Tickets are on sale at the R&W activities desk in Bldg. 31, Rm. B1W30 or by calling (301) 496-4600. Orders can be placed for tickets at any R&W store. Tickets available include Circus Celebrity—front row/interactive seating where you become part of the show \$80 (reg. \$110), front row \$53 (reg. \$75), VIP \$39 (reg. \$52), section 111 & 112 (best seats) \$24 (reg. \$35).



## Ranganathan Named Senior Advisor to Collins, Hails from Pharma

Dr. Rajesh Ranganathan, who was recently named NIH director Dr. Francis Collins's senior advisor for translational research, has made a career out of diving into fields in need of new direction and inhabiting positions that never existed prior to his inventing them. Which is a good thing given that he has been charged with helping Collins shape and stand up the proposed National Center for Advancing Translational Sciences.

Ranganathan, who arrived at NIH last Nov. 1 as a contractor and became a federal employee on Jan. 28, comes to campus from pharmaceutical company Novartis, for whom he worked for more than 7 years. He had been recruited to the drug company from academia in 2003 to "shake the system loose from within," he said.

"They hired me to a position that had no predecessor," he explained. "My job was to help determine what was good science and what wasn't."

Ranganathan quickly acquainted himself with the wide range of therapeutic areas being pursued by Novartis at 7 sites around the world and set about exposing them to academic-style review to "terminate, start or reshape programs." Along the way, he also founded a global office of training and education in drug discovery for the company's more than 5,000 scientists.

He established a postdoctoral training program at Novartis that focused on the intersection of basic science and translation of therapies to the bedside. He also helped lay out the company's scientific research strategy for 2010-2015.

**Why leave such an influential post?**

"I could easily have stayed at Novartis for 20 years and been very happy and productive," he said. "But the NIH job spoke to my entrepreneurial inclinations...What I always look for in a job is a broader calling. And what Dr. Collins articulated was music to my ears."

Just as in pharma, Ranganathan begins an NIH job that has no predecessor. "It's a new arena, with

new challenges," he said. "The potential to have broad impact in biomedical science is, for me, the biggest attraction."

"I am a Ph.D. scientist," he continued, "but I have always been interested in clinical applications of my work. Looking back, my biggest regret is that I didn't get an M.D., which would have given me a chance to help patients directly. But this [new] job offers the potential of indirectly helping those in need."

Before working at Novartis, Ranganathan was a scientific consultant for Care Capital LLC. Earlier, he held a Helen Hay Whitney postdoctoral fellowship in Nobel laureate Dr. Linda Buck's group at Harvard Medical School and the Fred Hutchinson Cancer Research Center.

Ranganathan received his Ph.D. from MIT, where he worked with another Nobel laureate, Dr. H. Robert Horvitz, and discovered a novel serotonin-gated chloride channel with a role in behavior modulation. He has two degrees from Amherst College: a B.A. with honors in biology and a B.A. in chemistry.

"His research expertise and his experience within the pharmaceutical industry will be invaluable to me and to the NIH as we work toward enhancing the translation of research into medicine," Collins said. ☐



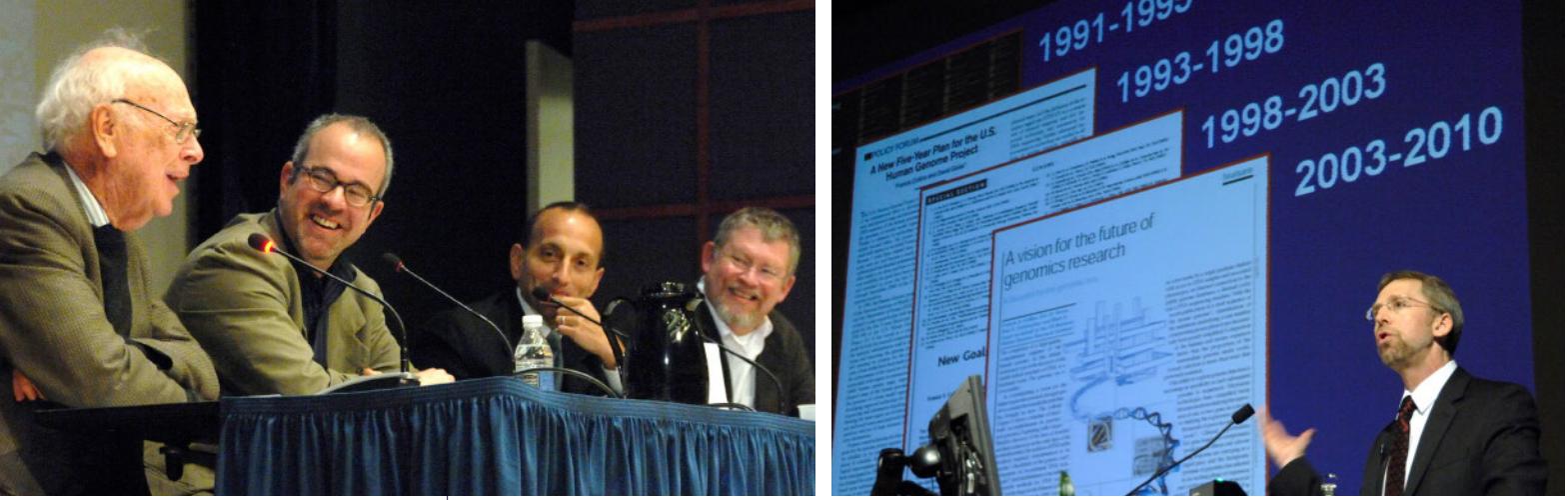
## Intramural Training Directors Hold Summit

The NIH intramural training directors committee, chartered by NIH deputy director for intramural research Dr. Michael Gottesman, held its first summit recently at the Lawton Chiles International House on campus to develop recommendations on training the scientific workforce of the future. Through monthly meetings and annual summits, the committee supports the training mission of the Intramural Research Program by examining and developing training policies on timely and important topics.

## Branch Provides Emotional Support to Patients, Caregivers

The diagnosis of a brain tumor elicits many different and sometimes difficult emotions, not only for the patient, but also for members of the patient's family who are affected by the disease. To help patients and their caregivers cope, the National Cancer Institute's Neuro-Oncology Branch (NOB) has expanded its emotional support services to include a combined patient/caregiver group, a caregiver-only group and a patient-only support group.

The NOB brain tumor support group provides an environment and an opportunity for patients, families and friends to express their feelings and learn new ways to manage all aspects of this disease. Each group meets monthly. Neuro-Oncology Branch patients who are interested in joining a group can contact Nancy Garren at (301) 496-6380 or email her at garrenn@mail.nih.gov for more information.



## GENOMICS

CONTINUED FROM PAGE 1

### **Top, l:**

*During a panel discussion, Dr. James Watson (l), co-discoverer of the structure of DNA, says having his genome sequenced provided key information on how he metabolized a blood pressure medication.*

### **Top, r:**

*NHGRI director Dr. Eric Green provides an overview of a new strategic plan, "Charting a course for genomic medicine from base pairs to bedside."*

### **Below, l:**

*Dr. Eric Lander, director of the Broad Institute, talks about the first analysis of the human genome sequence.*

### **Below, r:**

*Dr. Maynard Olson, professor emeritus of genome sciences and medicine at the University of Washington, speaks on the potential for moving genomic research into the real world.*

PHOTOS: BILL BRANSON

the day-long symposium “A Decade With the Human Genome Sequence: Charting a Course for Genomic Medicine,” were NIH director Dr. Francis Collins; Dr. James Watson, Nobel laureate, founding director of what became NHGRI and co-discoverer of the molecular structure of DNA; Dr. Eric Lander, director of the Broad Institute; and Dr. Maynard Olson, professor emeritus of genome sciences and medicine at the University of Washington.

“We’re celebrating the day by marveling at the past and anticipating the future,” said Green. “Science changed when we generated that first sequence of the human genome and what a remarkable decade it has been since.” He noted that the strategic plan was released on the 10th anniversary of the initial sequence and analysis of the draft human genome in *Nature* magazine.

Collins noted that, in the 10 years since release of the sequence, researchers have discovered the molecular basis of 4,000 disorders and 1,000 genetic variations that make a small contribution to common complex diseases and point towards potential therapeutic targets.

Collins, who led the Human Genome Project from 1993 until its completion in 2003, spoke about the importance of building “the bridge between basic discoveries and new therapeutics.” One way to do this, he said, is through NIH’s proposed National Center for Advancing Translational Sciences. The center would focus

on accelerating the development and delivery of new, more effective therapeutics and serve as a resource for the entire translational science community as it moves promising products through the development pipeline.

Olson also commented on the need to integrate information that can now be readily gathered into the practice of medicine.

“The potential is finally here to move genomics out into the real world,” he said. “I guarantee if you start getting molecular data into health records and not just into some artificial study... there will be a tremendous dialogue between the clinical community, patients and society at large.”

Research on the ethical, legal and social implications of genomic research and medicine will be crucial to this dialogue and to genomics’ acceptance into mainstream medical care, said Dr. Amy McGuire, associate professor of medicine and medical ethics and associate director of research at the Center for Medical Ethics and Health Policy at Baylor College of Medicine. She noted that she had worked on ethical, legal and social issues that arose in 2007 when Watson’s personal genome was sequenced and analyzed at Baylor.

Watson said that having his genome sequenced provided him key information on how he metabolized certain drugs like beta-blockers, a blood pressure medication. Doctors advised him to take one pill per week rather than one daily.





Above, alongside NGHRI's Dr. Mark Guyer (l), Dr. Bradley Bernstein of Harvard Medical School discusses how the epigenome, chemical compounds that modify or mark the human genome, regulate human genes. Below, NIH director Dr. Francis Collins talks about his lab's discovery of the gene that causes progeria.

"That was an extremely useful fact, which I wouldn't have known without having my genome sequenced," he said. He declined the offer to know his genetic risk for Alzheimer's disease, which afflicted his grandmother.

"A tremendous amount about medicine has been cracked open, but it's just barely a start. Most of what we need to know about the genome still lies before us," said Lander. He is well known for advocating large DNA sequencing projects such as the Cancer Genome Atlas, a comprehensive effort to understand the genomic basis of cancer. Referring to the recently completed 1,000 genomes project, he recommended a "1 million genomes project" to provide a truly comprehensive resource on human genetic variation.

Videos of each talk are available at <http://bit.ly/hSdSFC>.



## American Medical Association Honors NHGRI's Gahl

Dr. William Gahl, clinical director of the National Human Genome Research Institute, received the Dr. Nathan Davis Award for Outstanding Government Service on Feb. 9 for his work establishing the Undiagnosed Diseases Program, a trans-NIH initiative that aims to provide diagnoses to patients with mysterious medical conditions. Gahl accepted the American Medical Association's highest award on behalf of the thousands of patients with rare and undiagnosed disorders.

"Many of my patients represent the medically underserved," said Gahl, who received the award at the AMA National Advocacy Conference at the Grand Hyatt Washington Hotel in Washington, D.C. "They provide the ongoing assurance that compels me and my colleagues at the bedside, at the bench and in the NIH Undiagnosed Diseases Program to pursue this work with a passion for care and discovery."

One of eight winners of the award, Gahl was recognized as a federal executive branch member in career public service and is the first honoree to represent NHGRI. Fourteen of the 25 past recipients in the same category have been leaders at NIH, including seven NIH center or institute directors.

"As the founding director of the UDP, Dr. Gahl has brokered a unique combination of medical and scientific resources to make genetic discoveries and further the research of undiagnosed diseases," NHGRI director Dr. Eric Green wrote in a nomination letter last fall. "Dr. Gahl has recruited the most contemporary genomic experts and technologies to the UDP, quickly demonstrating the role of detailed genomic studies in unraveling the genetic basis of mystery diseases. These efforts are establishing new paradigms for investigating and diagnosing rare genetic disorders."

This year marks the 22nd anniversary of the Dr. Nathan Davis Awards, which were named for the 19th century physician and AMA founder.

Gahl studies rare inborn errors of metabolism, seeing patients in the clinic and conducting biochemical and biological investigations in the laboratory. He is an international expert in cystinosis, a multisystemic disease that causes kidney failure at a young age due to lysosomal storage of cystine; Hermansky-Pudlak syndrome, a disorder of albinism and bleeding due to improper formation of vesicles within cells; alkaptonuria, a devastating joint disease of adults; and disorders of free sialic acid metabolism. He has published more than 280 articles, reviews and book chapters. Currently, 25 of Gahl's fellows are certified in clinical biochemical genetics. He has won previous awards from the National Organization for Rare Disorders and the Alliance of Genetics Support Groups for his service to the rare disease community.



Dr. William Gahl accepts the Dr. Nathan Davis Award from Dr. Ardis Dee Hoven of the AMA.

PHOTO: TED GRUDZINSKI/AMA



## BLACK HISTORY

CONTINUED FROM PAGE 1

### Top:

*Guest speaker Kinniebrew said, "To understand African Americans in the Civil War, you have to know what came before the Civil War."*

### Below:

*Guests at the Black History Month observance also enjoyed a sampling of foods.*

PHOTOS: ERNIE BRANSON



include the events that led up to the Civil War and how attitudes towards blacks before and during the War Between the States were borne out by the struggles of the people.

*"To understand African Americans in the Civil War, you have to know what came before the*

Civil War," Kinniebrew said. He then took the audience through a historical horror show of myths, misconceptions, abuses and downright lies begun and propagated in such a way as to make everyone believe blacks were incapable of advanced thought, were better off enslaved, or worse, were not really even human.

Kinniebrew said these attitudes weren't just held by plantation owners and the general population, but also by officials and even presidents. The 1847 Dred Scott case that ended up at the Supreme Court ended in Scott and other similarly escaped slaves being denied citizenship and still deemed property. The quashing of the Nat Turner rebellion didn't just end when Turner was caught and killed. Kinniebrew noted that the slave leader was also skinned as a measure of further brutality usually reserved for animals. Even Thomas Jefferson didn't escape the trend of owning people and fathering children through one of his slaves.

*"The people who were able to do this to black people believed these myths," Kinniebrew said. "They thought, 'We can do them like this. They have no rights.'"*

These repellent practices and the revulsion of many people against them came to a head as Northern and Southern states considered the political ramifications, taxes and tariffs that were possible based on whether or not the new Western territories would be counted as free or slave states. While the young U.S. had until that time considered itself a complicated but functional union of states, it was clear the political status quo was not sustainable. Thus began the Civil War.

Kinniebrew spoke of how some figures of the day not only served in the roles they're historically known for, but also in lesser-known roles, as in the case of Underground Railroad conductor Harriet Tubman.

*"She recruited African-American spies and was a spy," he said. In addition to reporting on enemy troop movements for the North, "spies would blow up bridges and obstruct roads and then disappear into the brush they knew so well."*

Tubman also served as a nurse to African Americans fighting in the war, as did Susie King Taylor, a literate black woman who not only worked in the medical field, but also was a teacher and later wrote memoirs of working during the conflict.

Tubman and Taylor were joined in their efforts to provide medical care to black soldiers by physicians such as Dr. Charles B. Purvis, who went on to become a member of the medical faculty of Howard University; Dr. John V. DeGrasse, the first African American to be admitted to the



NIH principal deputy director Dr. Lawrence Tabak addressed the assembly at NIH's annual Black History Month observance.

Massachusetts Medical Society; and Dr. Alexander T. Augusta, who was forced to earn his medical degree in Canada, as schools in the States wouldn't admit him.

Many times, white doctors refused to work with black doctors and so these medical pioneers worked most commonly in what were known as "contraband hospitals," the contraband in question being escaped slaves who were considered merchandise.

Due to a lack of understanding about basic hygiene, most soldier deaths during the war were from disease and infection rather than actual fighting. Unfortunately for African-American soldiers, this rate of death off the battlefield was exponentially higher than their white counterparts because of malnutrition, inadequate shelter and clothing and inferior or absent medical attention. There just weren't enough doctors who would treat black soldiers and treat them well enough to keep them from dying.

But African-American soldiers, who fought for the North, as well as more awkwardly for the South under the orders of their masters, did use the conflict to their advantage when possible. Slaves working in fields would hear Union soldiers coming and flee their plantations. Many used the chaos to escape and rescue family members. Kinniebrew also told the story of enslaved sailor Robert Smalls, who was placed in charge of his master's ship while the white crew went ashore.

"He seized the opportunity to sail his master's ship up the coast to freedom, picking up his relatives and friends along the way," he said. "He went on to become a congressman from South Carolina."

To end the lecture, Kinniebrew reached back to the tradition of spirituals that served as work songs in the fields, but which also could be used to speak in code right under foremen's noses. Some songs spoke of following the constellations at night to escape. Others referred to getting in the river to mask your scent from hunting dogs. Kinniebrew said one song made him think of the struggles of blacks to care for each other in the medical community. In a baritone, he sang to the audience that song, *Building Me a Home*.

MARCH 4, 2011

VOL. LXIII, NO. 5

nih record

## NIAID's Kapikian To Receive Hilleman/Merck Award

Dr. Albert Z. Kapikian will receive the 2011 Maurice Hilleman/Merck Award on May 22 at the 111th general meeting of the American Society for Microbiology. Kapikian is chief of the epidemiology section of the Laboratory of Infectious Diseases, NIAID, a position he has held since 1967.

Known as "the father of human gastroenteritis virus research," Kapikian and his colleagues discovered the Norwalk virus in 1972. This was one of the first viruses to be associated with acute epidemic gastroenteritis in humans. A year later, Kapikian and fellow NIAID scientists Dr. Stephen Feinstone and Dr. Robert Purcell first identified the virus that causes hepatitis A. In 1974, while conducting studies in infants and young children hospitalized with diarrhea, Kapikian and his colleagues detected and visualized human rotavirus. This was the first reported detection in the United States of the virus, which had been discovered in Australia a year earlier.



Rotaviruses have emerged as the leading cause of severe diarrhea in infants and young children worldwide. Each year, they account for approximately 500,000 deaths, mostly among children under the age of 5 in developing countries. Kapikian led a nearly 25-year effort to develop a rotavirus vaccine. He and his research group defined the mode of transmission of rotavirus, identified the viral proteins critical for triggering an immune response and formulated a vaccine aimed at protecting against several important rotavirus strains. Their efforts, in partnership with Wyeth-Ayerst Laboratories, led to the development, testing and FDA approval in 1998 of the first rotavirus vaccine. Kapikian's work has led to second-generation rotavirus vaccines and ongoing efforts to improve rotavirus vaccines and expand their use in the developing world.

ASM's Maurice Hilleman/Merck Award recognizes major contributions to vaccine discovery, vaccine development and/or control of vaccine-preventable diseases. At the meeting, Kapikian will deliver a lecture titled, "A Strategy for the Development and Implementation of an Affordable and Sustainable Multivalent Rotavirus Vaccine Designed for Developing Countries."

## NCI Launches Interactive Cancer Control Community of Practice

On Feb. 23, the National Cancer Institute launched Research to Reality (R2R) on the Cancer Control P.L.A.N.E.T. portal. R2R is an online community of practice that links cancer control practitioners and researchers, providing opportunities for discussion, learning and the sharing of evidence-based practices, resources and tools. The R2R community facilitates partnerships and strengthens collaborations among individuals and organizations engaged in cancer control and prevention. R2R has several interactive features, including monthly cyber-seminars, discussion forums, featured partners, community profiles and an events calendar. To join the community and the conversation or to learn more, visit <https://researchtoreality.cancer.gov>.

## GLOBAL HEALTH

CONTINUED FROM PAGE 1

**Right:**  
USAID administrator Dr. Rajiv Shah (r) gives annual Barmes Lecture.

**Below:**  
Shah (c) is flanked by Lois Quam, the new Global Health Initiative executive director, and Fogarty director Dr. Roger Glass.

PHOTOS: MICHAEL SPENCER



Shah repeatedly cited intramural and extramural research supported by NIH as crucial to enhancing human welfare across the globe.

The USAID chief delivered the David E. Barmes Global Health Lecture on Feb. 15 in Maser Auditorium. In his introduction, NIH director Dr. Francis Collins noted that this was believed to be the first-ever address to NIH staff at-large by a sitting USAID administrator and symbolized a closer relationship between the two agencies. Collins noted that a research committee was established last summer by USAID, NIH, CDC and some other agencies to improve cooperation—all of a piece with the Obama administration's emphasis on a one-government,

better-coordinated approach through its wide-ranging Global Health Initiative.

Collins has developed a warm personal relationship with Shah and the two share a connection with the University of Michigan, where Collins taught and where Shah received his undergraduate degree.

The Barmes Lecture is sponsored by Fogarty and NIDCR, where the late Dr. Barmes worked. Among those attending was former Minnesota health executive Lois Quam, the newly named executive director of the Global Health Initiative. Shah and Quam had a working lunch following the lecture and met with senior NIH staff.

Shah opened his remarks by praising NIH for representing one of America's competitive advantages: advancing science, technology and innovation aimed directly at improving human welfare. "If we can harness that capability for the poorest communities in the world, we can leave an unparalleled legacy in global health in this next decade," he said.

The litany of health challenges is long and daunting, Shah explained. A woman in southern Sudan is more likely to die in childbirth than finish high school. Due to the HIV epidemic, a child born in Swaziland has half the life expectancy as one born 11 years ago. A girl born in Chad is only 10 percent more likely to learn how to read than she is to die before she turns 5 years old.

Vaccines represent the "most transformative" breakthrough for saving lives, he said. The



development of new vaccines is the best investment that can be made in efforts to combat malaria, tuberculosis and HIV/AIDS. A "cheap, effective" vaccine is the best hope for eradicating malaria, declared Shah. NIH research can help reduce the length of therapeutic regimes for TB as well. Developing a vaccine for HIV/AIDS is necessary for "closing the chapter" on its brutal history.

Shah cited the Center for the AIDS Programme of Research in South Africa, an NIH grantee, for its work on a gel microbicide for women to protect themselves from HIV infection. He said USAID is prepared to work with NIH to accelerate further testing and regulatory approval of this potential breakthrough. Circumcision campaigns have also been effective, he explained, adding that it was NIH that first discovered the "dramatic effect" circumcision could have in limiting the transmission of HIV. Reducing mother-child transmission of HIV is another approach that can be strengthened.

Equally important must be technologies to protect maternal and child health, from reducing maternal mortality to decreasing birth asphyxia. An NIH-funded study, First Breath, inspired USAID to join the fight against birth asphyxia, Shah noted.

Science and innovation form the tip of the spear in meeting the health challenges in the developing world. To this end, Shah said USAID will develop a "center of excellence" to accelerate product development and field introduction, bringing in industry experts and academic researchers to consult and investing "seed capital" in promising ideas.

USAID will launch a series of new scientific and technical challenge grant programs, designed to trigger innovations such as new diagnostics for community health workers and expanding the use of mobile phones to connect to health facilities.

The world as it could be, Shah asserted in closing, is one where the vaccinations afforded his recently born third child are equally available to a child born in east Africa. "We look forward to being a partner with you, as the inventors and visionaries...that will allow us to succeed," he said. ☐

# digest

## New Possible Risk Factor of Heart Disease Found

Abnormal heart rate turbulence is associated with an increased risk of heart disease death in otherwise low-risk older individuals, according to an NHLBI-funded study in the Feb. 15 *Journal of Cardiovascular Electrophysiology*. Among the nearly 1,300 study participants, heart rate turbulence, which reflects how well the heart reacts to occasional premature contractions, was an even stronger heart disease risk factor than elevated levels of C-reactive protein. CRP is a potential heart disease biomarker that has emerged in recent years. Study participants considered at low risk of heart disease based on traditional risk factors were on average 8 to 9 times more likely to die of heart disease during the roughly 14-year follow-up period if they had abnormal heart rate turbulence values. Traditional risk factors include age, gender, high blood cholesterol, high blood pressure, obesity, diabetes and smoking. Low-risk individuals with elevated CRP in their blood were about 2.5 times more likely to die than those with normal or low CRP.

## Pesticides Linked to Parkinson's Disease

New research shows a link between use of two pesticides, rotenone and paraquat, and Parkinson's disease. People who used either pesticide developed Parkinson's disease approximately 2.5 times more often than non-users. The study was a collaborative effort conducted by researchers at NIEHS and the Parkinson's Institute and Clinical Center in Sunnyvale, Calif. "Rotenone directly inhibits the function of the mitochondria, the structure responsible for making energy in the cell," said NIEHS's Dr. Freya Kamel, co-author of the paper that appeared online Jan. 26 in *Environmental Health Perspectives*. Paraquat increases production of certain oxygen derivatives that may harm cellular structures. People who used these pesticides or others with a similar mechanism of action were more likely to develop Parkinson's disease. The authors studied 110 people with Parkinson's disease and 358 matched controls from the Farming and Movement Evaluation Study to investigate the relationship between Parkinson's disease and exposure to pesticides or other agents that are toxic to nervous tissue.

## Rehab Study Looks to Get Stroke Patients Back on Their Feet

In the largest stroke rehabilitation study ever conducted in the United States, stroke patients who had physical therapy at home improved their ability to walk just as well as those who were treated in a training program that requires the use of a body-weight supported treadmill device followed by walking practice. The study also found that patients continued to improve up to 1 year after stroke, defying conventional wisdom that recovery occurs early and tops out at 6 months. In fact, even patients who started rehabilitation as late as 6 months after stroke were able to improve their walking. The results were announced Feb. 11 at an American Stroke Association conference. NINDS provided primary funding for the study.

More than 4 million stroke survivors experience difficulty walking. "The results of this study show that the more expensive, high-tech therapy was not superior to intensive home strength and balance training, but both were better than lower intensity physical therapy," said NINDS deputy director Dr. Walter Koroshetz. The walking program involves having a patient walk on a treadmill in a harness that provides partial body weight support. Known as locomotor training, this form of rehabilitation has become increasingly popular.

## Surgery on Fetus Reduces Complications of Spina Bifida

A surgical procedure to repair a common birth defect of the spine, if undertaken while a baby is still in the uterus, greatly reduces the need to divert, or shunt, fluid away from the brain, according to a study by NICHD and four other research institutions. The study appeared Feb. 9 in the Online First version of the *New England Journal of Medicine*. The surgical procedure consists of closing an opening at the back of the fetal spine. The fetal surgery is a departure from the traditional approach, which involves repairing the defect in the spinal column after an infant has been born. The fetal surgical procedure also increases the chances that a child will be able to walk without crutches or other devices. However, infants who underwent this prenatal surgery were more likely to be born preterm than were the infants who had the surgery after birth.—compiled by Carla Garnett



*Stroke patients who received intensive physical therapy improved their ability to walk just as well as those treated with a more complex rehabilitation program involving a body weight-supported treadmill.*

# milestones



NIA's Dr. Marcelle Morrison-Bogorad retires.

## Morrison-Bogorad Retires from NIA

By Peggy Vaughn

Dr. Marcelle Morrison-Bogorad was a 15-year-old schoolgirl in her native Scotland when a science teacher encouraged her to pursue her budding passion for science. "She said the brain was the thing to study, that it was something magical," Morrison-Bogorad said.

Taking that early guidance to heart, she devoted much of her scientific career to unraveling the mysteries of the aging brain and age-related neurodegenerative diseases. Now, after 14 years as director of the NIA Division of Neuroscience, Morrison-Bogorad is retiring.

With an honors degree in biochemistry from Aberdeen University and a Ph.D. in biochemistry from Glasgow University in Scotland, she began her professional career in 1971 as one of the first researchers to isolate and study the properties of globin messenger RNAs in red blood cells. In the early 1980s, while working as a researcher and faculty member in the neurology department at the University of Texas Health Science Center in Dallas, a chance encounter at an Alzheimer's Association meeting changed her life.

"I was introduced to a man with Alzheimer's and was struck by the fact that he was there—but not there," she said. "It made me want to find out what went wrong in his brain."

Since 1997, she has directed NIA's Alzheimer's disease research infrastructure network and extramural funding of Alzheimer's and normal cognitive aging research programs.

"Marcelle has been an outstanding leader in the fields of Alzheimer's disease and normal brain and cognitive aging research," said NIA director Dr. Richard Hodes. "Her tremendous drive, scientific curiosity and fierce attention to detail brought out the best in her staff and the many researchers and clinicians who looked to her for guidance and support. She has led the way to new insights about Alzheimer's that show promise for development of new and effective interventions."

Morrison-Bogorad said the world of Alzheimer's and cognitive aging research has greatly evolved over the past decade, in part due to advances in

technology and important new ways of thinking about data sharing. "The science has become more complicated and disciplines are both more specialized and intertwined," she said.

She encouraged the sharing and leveraging of resources—whether they were scientific expertise, funding, specimens or data. One example is the Alzheimer's Disease Neuroimaging Initiative (ADNI), a groundbreaking public-private effort to identify and track Alzheimer's pathology even before symptoms such as memory loss are evident. Led by NIA, ADNI brings together academia, the pharmaceutical and imaging industries and private foundations and organizations through the Foundation for NIH.

"Now more than ever we need openness and collaboration among scientists in order to advance basic, translational and clinical research," she said.

Morrison-Bogorad plans to move to Costa Rica where she and her husband, Alex, are building a mountaintop home.

## NCI's Schatzkin Mourned

Dr. Arthur Schatzkin, an internationally renowned pioneer in the field of nutrition and cancer, died Jan. 20 of brain cancer at age 62. He came to NCI in 1984, and since 1999 served as chief of the Nutritional Epidemiology Branch in the Division of Cancer Epidemiology and Genetics.



Schatzkin was committed to understanding the role of nutrition in cancer etiology and prevention. Early in his career, he was the first to describe an association between moderate alcohol intake and breast cancer risk. He then turned his attention to the role of diet in preventing colorectal cancer. He led the NCI Polyp Prevention Trial, a 4-year randomized study that successfully achieved a low-fat, high-fiber diet and then showed that this intervention, contrary to the prevailing hypothesis, had no effect on adenoma recurrence.

Schatzkin addressed major issues in nutritional epidemiology, including two methodologic limitations: the limited range of reported dietary intake in cohort studies and the measurement error associated with self-reported

dietary assessment. To address the first issue, he conceived and launched the NIH-AARP Diet and Health Study, at the time the largest-ever prospective cohort study. Research from this long-term investigation of approximately 500,000 men and women has produced more than 100 original scientific papers and is a prized resource for a multitude of investigators worldwide.

To address the complex issue of dietary measurement error, Schatzkin played a key role in the Observing Protein and Energy Nutrition biomarker study. He also supported the development of new web-based methods to measure diet, physical activity and energy balance. He published over 300 original research articles. In 2007, he participated on an international expert panel convened by the World Cancer Research Fund and the American Institute for Cancer Research to report on current evidence regarding food, nutrition, physical activity and cancer.

Throughout his career, Schatzkin was dedicated to the advancement of nutritional epidemiology and the mentoring of young scientists. He built a training ground for the next generation of nutritional epidemiologists. During his 11 years as branch chief, the NEB grew from two investigators to a team of over 20 scientists. His leadership and enthusiasm inspired a passion in trainees and senior scientists alike.

Schatzkin is survived by his wife, Dr. Tamara Harris Schatzkin, chief of the geriatric epidemiology section, National Institute on Aging, and their children, Rebecca and Eric.

## Longtime NIDDK Researcher Witkop Dies

By Amy F. Reiter

Dr. Bernhard Witkop died on Nov. 22 at age 93 at his home in Chevy Chase. The renowned organic chemist served at NIH for more than 40 years.

During those years, Witkop—along with his recruit, the late Dr. John Daly, and others—discovered the “NIH-shift,” a term describing the movement of hydrogen, deuterium or tritium to adjacent carbons on aromatic rings during oxidation, a process key in developing many therapies. Witkop also helped to develop selective methods for the non-enzymatic cleavage of proteins, which enabled the sequencing of amino acids in proteins as large as immunoglobulin. This method was later used in the production of human insulin.

Witkop also helped pioneer the NIH Visiting

Fellow Program. Among other foreign scientists, he began attracting visiting researchers to the program from Japan as early as 1955. He traveled frequently to Japan, where he gave talks in classical Japanese. In 1975, Witkop received an Order of the Sacred Treasure, bestowed by the emperor of Japan.

“He brought in the first visiting fellow from Japan at a time when we were still in the shadow of World War II,” said Dr. Kenneth Jacobson, chief of NIDDK’s Laboratory of Bioorganic Chemistry. “He broke the ice.”

Other honors, among many, included election to the National Academy of Sciences and the American Philosophical Society.

Even long after most lights at NIH darkened, Witkop might still be found working in his lab. Thomas Witkop remembers going to visit his father at his West Virginia cabin one evening and finding all signs that his father was present, except his father. “At approximately 4 a.m., he came rolling back up to the cabin. Apparently, he was at the cabin, had some big idea and drove to the lab at NIH in the middle of the night, did whatever he needed to do and then came back.”

Witkop served as head of the NIDDK Laboratory of Chemistry for 30 years. He was appointed an NIH institute scholar in 1987 and a scholar emeritus in 1993.

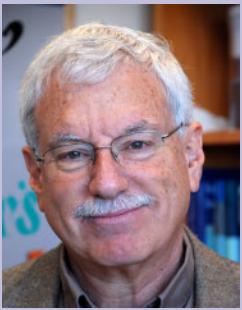
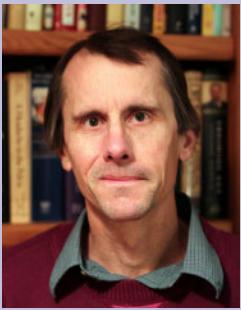
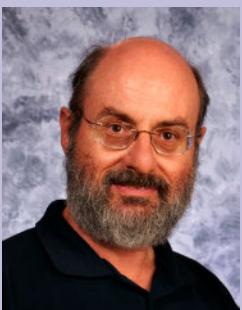
Witkop’s early career coincided with World War II. A German native and Jewish on his mother’s side, he gave much of the credit for his shelter from the Nazis to his mentor at the University of Munich, the Nobel Prize-winner Heinrich Wieland.

After a few years at Harvard University, Witkop came to NIH as a fellow in the Public Health Service in 1950. Thomas Witkop said his father’s NIH service was a high point of his life.

In addition to his son, Witkop is survived by his wife of 65 years, Marlene Prinz Witkop; daughters Cornelia Hess and Phyllis Kasper; a sister; and seven grandchildren. □



*Dr. Bernhard Witkop (l), then-head of the NIDDK Laboratory of Chemistry, discusses research with Dr. John Daly (c) of NIDDK and Dr. Takashi Tokuyama, an NIDDK visiting scientist from Japan, on the NIH campus in the late 1960s.*



The eight NIH'ers who were recently elected AAAS fellows are (top, from l) Dr. Jacqueline N. Crawley, Dr. Bruce A. Fuchs, Dr. Malcolm A. Martin, Dr. James Mason, (bottom, from l) Dr. Mark Mattson, Dr. Thomas B. Nutman, Dr. Alan Sher and Dr. Roy S. Wu.

## NIH'ers Named AAAS Fellows

The American Association for the Advancement of Science (AAAS) council recently elected 503 members, including eight NIH'ers, as 2010 fellows of the association. Honorees were recognized for their contributions to science and technology at the fellows forum on Feb. 19 during the AAAS annual meeting in Washington, D.C. New fellows receive a certificate and a blue and gold rosette as a symbol of their distinguished accomplishments.

From the section on biological sciences:

**Dr. James Mason**, Laboratory of Molecular Genetics, NIEHS: "For distinguished contributions to the field of chromosome structure, particularly showing that there are alternatives to telomerase in maintaining telomeres, especially the use of retrotransposons."

From the section on education:

**Dr. Bruce A. Fuchs**, director, NIH Office of Science Education: "For distinguished service and leadership in improving STEM education as the director of the Office of Science Education, National Institutes of Health."

From the section on medical sciences:

**Dr. Malcolm A. Martin**, chief, Laboratory of Molecular Microbiology, NIAID: "For distinguished contributions in the investigations of HIV-1 pathogenesis using nonhuman primates with the goal of developing vaccines."

**Dr. Thomas B. Nutman**, head, Helminth immunology section, and head, clinical parasitology unit, Laboratory of Parasitic Diseases, NIAID: "For distinguished contributions to the understanding of human immune responses to parasites and of the factors inducing pathogenesis and disease."

**Dr. Alan Sher**, chief, Laboratory of Parasitic Diseases, NIAID: "For distinguished contributions to research on infectious diseases, notably understanding pathogenesis and immunoregulation of parasitic and mycobacterial infections, the role of T cell cytokines in immunoregulation and the role of dendritic cells in host resistance."

From the section on neuroscience:

**Dr. Jacqueline N. Crawley**, chief, Laboratory of Behavioral Neuroscience, NIMH: "For generating new rodent behavioral tasks and applying emerging technologies to investigate genes regulating complex behavioral traits."

**Dr. Mark Mattson**, chief, Laboratory of Neurosciences, NIA: "For elucidating cellular signaling mechanisms involved in neural plasticity and the pathogenesis of neurodegenerative disorders."

From the section on pharmaceutical sciences:

**Dr. Roy S. Wu**, chief of the Clinical Grants and Contracts Branch, Cancer Therapy Evaluation Program, NCI: "For outstanding contributions to the advancement of translational research and mentoring of grantees and young scientists."

Founded in 1848, AAAS is associated with about 262 affiliated societies and academies of science, serving 10 million individuals. An international non-profit organization dedicated to advancing science around the world by serving as an educator, leader, spokesperson and professional association, AAAS also publishes the journal *Science*, which has the largest paid circulation of any peer-reviewed general science journal in the world, with an estimated total readership of one million. 