

# nih record



**ABOVE** • An NIH'er takes the mound in place of Secretary Sebelius at "HHS Night at the Ballpark." See story on p. 5.

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*Offers Hope, Encouragement, Support*

## HHS Secretary Visits NIH, Addresses Town Meeting

By Carla Garnett

**W**hen HHS Secretary Kathleen Sebelius visited NIH on Aug. 1, she brought messages of hope, encouragement and support—hope that progress-crippling budget cuts will end soon, encouragement that medical research is a top priority at the highest levels and support for ambitious science endeavors such as NCATS and the big data and BRAIN initiatives.

In a 2½-hour visit that included a stop at the Children's Inn, a lab tour and a briefing with several institute directors, Sebelius ended the morning with a town meeting in Masur Auditorium.

"Sequestration is probably the dumbest economic policy I have ever seen in my entire life—let's

SEE SEBELIUS VISIT, PAGE 4



HHS Secretary Kathleen Sebelius at Masur Auditorium town meeting with NIH director Dr. Francis Collins

*Respect for Privacy*

## NIH Restricts Access to Henrietta Lacks' Genomic Data

By Rich McManus

Last March, the scientific community—and later, by happenstance, the descendants of Henrietta Lacks, whose cervical cancer (HeLa) cells began growing in 1951 and have been crucial enough to science to have been cited in 74,000 research papers since then—learned that German researchers had published the first whole genome sequence of a HeLa cell line.

Once again, it seemed, Lacks' gift to science was being exploited without either her consent (admittedly not required in 1951) or that of her surviving family members, whose trials were recounted in the best-selling book *The Immortal Life of Henrietta Lacks*, published in 2010 by Rebecca Skloot.

Within days of the German paper's appearance, NIH director Dr. Francis Collins and NIH deputy director for science, outreach and policy Dr. Kathy Hudson were able to persuade the

SEE LACKS, PAGE 6

## Lecture Launches New Natural Products Interest Group

By Ellen O'Donnell

Are you interested in the scientific aspects of natural products such as herbs, fungi and dietary supplements? If so, you may wish to check out the new NIH natural products scientific interest group.

Recently, the group held its inaugural event—a talk in Lipsett Amphitheater by Dr. Jon Clardy, the Hsien & Daisy Yen Wu professor in the department of biological chemistry and molecular pharmacology at Harvard Medical School. Clardy, an NIH grantee, is a pioneering researcher on biologically active small molecules.



Dr. Jon Clardy

SEE NATURAL PRODUCTS, PAGE 8



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NIH...Turning Discovery Into Health



**APAO Solicits Award Nominations**

The NIH Asian & Pacific Islander American Organization (APAO) will continue its tradition of honoring employees in the NIH Asian Pacific American community for their excellence. Nominations are solicited for three categories: Scientific Achievement Award—for significant accomplishments in biomedical research; Leadership Excellence Award—for non-scientists who exhibit leadership excellence, mentorship and empowerment of Asian and Pacific Americans to promote diversity and support the overall mission of NIH; and a new category, the Kuan-Teh Jeang Distinguished Service Award, established to honor the late Dr. K-T Jeang. It recognizes an APAO member who has made an outstanding contribution or demonstrated continual high quality service to the NIH Asian Pacific American community.

Nominees must work or have worked (within the previous year) at NIH. Awardees will be honored at the NIH APAO Awards holiday luncheon in December in Wilson Hall, Bldg. 1.

Submit a 1-page narrative/statement explaining why you think an individual deserves recognition and include a CV of the nominee. A review committee composed of APAO members and non-members representing several ICs as well as former award recipients will evaluate nominations. Submit nominations electronically by Monday, Sept. 30 to Dr. Shioko Kimura at [kimuras@mail.nih.gov](mailto:kimuras@mail.nih.gov). For details, ask for the 2-page award nomination form.

**Principles of Clinical Research Class**

Registration for the 2013-2014 "Introduction to the Principles and Practice of Clinical Research" is now open. The course will run from Oct. 15 through Mar. 24, 2014. The deadline for registering is Oct. 9. Classes will be held on campus on Monday and Tuesday evenings from 5 to 6:30. There is no charge for the course but purchase of a textbook is suggested. A certificate will be awarded upon successful completion of the course, including a final exam. For more information or to register, visit [www.cc.nih.gov/training/training/ippcr/application.html](http://www.cc.nih.gov/training/training/ippcr/application.html) or call (301) 496-9425.

**'Adventure in Science' Seeks Faculty**

Adventure in Science (AIS), a non-profit science education program for children, is planning its 21st year at NIH and is looking for volunteer teachers. The program, which meets on Saturday mornings October through March in



*Children benefit from hands-on learning experiences at Adventure in Science classes.*

Bldg. 10, is designed to show 8- to 11-year-olds the fun of science using hands-on activities—from building (and launching) model rockets to dissecting frogs. AIS teachers are mostly volunteers from the NIH community, from postdocs to institute directors. This is a great opportunity to exercise your teaching skills with an enthusiastic audience. You can volunteer for only one Saturday, or for several. More information about teaching in AIS can be found at [www.adventureinscience.org](http://www.adventureinscience.org) in the section "About Us."

If you are interested in volunteering, contact Vathani Arudchandran, (301) 827-1813, ([Arulvathani.Arudchandran@fda.hhs.gov](mailto:Arulvathani.Arudchandran@fda.hhs.gov)) or Ed Max, (301) 827-1806, ([edward.max@fda.hhs.gov](mailto:edward.max@fda.hhs.gov)). Enrollment is currently full for children in the program beginning in the fall. Registration for the following year's program will open next spring and will be announced on the web site.

**Wednesday Afternoon Lecture Series Resumes**

The 2013-2014 Wednesday Afternoon Lecture Series kicks off the season with two lectures in early September. On Monday, Sept. 9, Dr. Cori Bargmann (Rockefeller University) will speak and on Wednesday, Sept. 11, Dr. Jeffrey Esko (University of California, San Diego) will give a talk. All lectures are held at 3 p.m. in Masur Auditorium, Bldg. 10.

To learn more about speakers coming to campus this year, visit <http://wals.od.nih.gov>. You can view the entire 2013-2014 series schedule there as well as download the 2013-2014 poster. For day-of-event information, stay abreast of WALS on Twitter at the following account: @NIHWALS.

For any questions or requests, contact Jacqueline Roberts at [robertsjm@od.nih.gov](mailto:robertsjm@od.nih.gov) or (301) 594-6747.

**Diabetic Adults Sought**

NIDDK seeks adults with type 1 or type 2 diabetes to join a study. Researchers want to learn how the body regulates vitamin C in those with diabetes. You will have 2 outpatient visits. We will collect samples of your blood and urine. Study-related tests and procedures are provided at no cost. Compensation will be provided. For more information, call 1-866-444-2214 (TTY 1-866-411-1010) and refer to study 04-DK-0021.

## Nutrition Choices Could Aid in Treating Type 1 Diabetes

By Jan Ehrman

Eating foods rich in certain dietary substances may help children and adolescents with type 1 diabetes stave off some of the potentially adverse consequences associated with the debilitating disease. These foods might help youth continue to make insulin for at least 2 years after they are diagnosed. The NIH-supported findings, published in the July issue of *Diabetes Care*, come from the largest investigation of its kind in the United States.

Diabetes is an insidious condition in which individuals are unable to break down carbohydrates effectively. The prevailing theory is that the disease is the result of an autoimmune attack on beta cells—insulin-producing cells of the pancreas.

Poorly controlled or over time, the illness has far-reaching health consequences. In type 1 diabetes (formerly known as juvenile diabetes or insulin-dependent diabetes), which normally presents before age 20, the pancreas does not produce enough insulin or any. Thus, food cannot be metabolized properly to create energy to nourish the body's cells. Daily insulin shots are required to stabilize blood sugar and prevent acute reactions such as hypoglycemia (low blood sugar) and its related ill effects.

According to the National Institute of Diabetes and Digestive and Kidney Diseases, adults with diabetes have 2 to 4 times the risk for heart disease compared to adults without diabetes. Further, stroke risk is also 2 to 4 times higher among people with diabetes. The chronic condition is also the number one cause of blindness in adults as well as a leading cause of kidney disease, blood vessel disease and limb amputation. In fact, diabetes is a leading cause of disability and premature death in the U.S.

Dr. Elizabeth Mayer-Davis, professor of nutrition and medicine at Gillings School of Global Public Health, University of North Carolina at Chapel Hill, and her colleagues assessed the effects of specific food components on type 1 diabetes in more than 1,300 children and young adults participating in the SEARCH for Diabetes in Youth protocol. Scientists supported by NIDDK and the Centers for Disease Control and Prevention took part in the investigation. What they discovered has implications for both clinicians and patients alike.

“When we analyzed all of the data, what we found was that among these type 1 youth who were still producing at least small quantities of

insulin, those who consumed foods that were rich in leucine (an essential amino acid that the body cannot manufacture) and omega-3 fatty acids experienced a slower loss of capacity to make insulin,” said Mayer-Davis. Foods in these two groups include fish such as salmon or sardines, eggs, dairy products, meats and soy-based foods.

The researcher added that by slowing down the loss of insulin production, in theory these individuals might need less supplemental insulin and may be able to temporarily ward off some of the adverse effects of diabetes.

The findings help lay preliminary scientific groundwork for further investigation into the relationship between nutrition and type 1 diabetes. Meanwhile, Mayer-Davis notes that there is no harm in patients consuming these fatty acid-rich foods, because the nutrients are already part of a healthy diet.

“Type 1 diabetes in youth is extremely difficult for youth to manage and for parents to support. It affects every day, every minute of a patient's life. It's very tough to live with,” Mayer-Davis said. “Whatever we can learn and do to improve the quality of life for these children and adolescents will be truly beneficial.”



Dr. Elizabeth Mayer-Davis

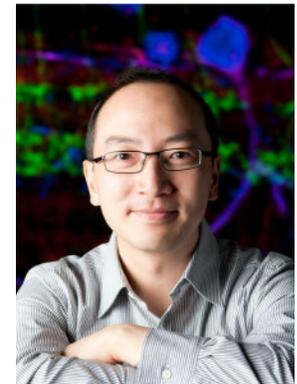
## Li To Give Sayer Vision Research Lecture

Dr. Wei Li, chief of the retinal neurophysiology unit at the National Eye Institute, will deliver the 2013 Sayer Vision Research Lecture on Thursday, Sept. 12 at 10 a.m. in Lipsett Amphitheater, Bldg. 10. His talk is titled “Of Squirrels and Men: A Model for Studying Retinal Neurobiology.”

Li studies how the synaptic circuits in the retina, the light-sensitive tissue in the back of the eye, are normally wired and how they are altered by disease. His laboratory uses the ground squirrel retina as a model system because of two unique features: photoreceptors in the ground squirrel retina consist mostly of cones in an arrangement very similar to that of the central region of the human retina and the squirrel hibernates in winter, which puts its retina through a long period of metabolically challenging conditions. Understanding how ground squirrels compensate for these conditions could provide a strategy for treating retinal disease in humans that may be influenced by metabolic stress.

The Sayer Vision Research Fund was established in 2006 at the Foundation for the National Institutes of Health by Dr. Jane M. Sayer, a research scientist with the National Institute of Diabetes and Digestive and Kidney Diseases, to honor her family and the memory of her parents, Winthrop and Laura Sayer. The fund incorporates her desire to contribute to groundbreaking medical research at NIH while specifically raising the profile of vision research. In partnership with NEI, the fund supports the Sayer Vision Research Lecture Series, given by a scientist of national or international prominence. From time to time, the fund also supports an award to a promising young NIH investigator in eye research, of which Li is the first recipient.

Individuals who need sign language interpreters or reasonable accommodation to participate in this event should contact Mica Gordon, (301) 451-6763, gordonmi@nei.nih.gov.





## SEBELIUS VISIT

CONTINUED FROM PAGE 1

### **Above, l:**

*Shown during the Secretary's visit to the Children's Inn at NIH are (from l) inn CEO Kathy Russell, inn dad Carlos Martinez, Tia Ford, Sebelius, Kayla Martinez, Collins, inn mom Dorelia Rivera and Dr. Raphaela Goldbach-Mansky of NIAMS's Pediatric Translational Research Branch.*

### **Above, r:**

*With Collins (r), Sebelius views ongoing research in NCI's Laboratory of Molecular Biology of Lymphoid Malignancies as postdoctoral fellow Dr. Anna Mazzucco (l), staff scientist Dr. Ryan Young and Dr. Louis Staudt (r), deputy chief of the NCI Metabolism Branch, explain the work. "The Secretary is looking at a lymphoma cell line growing in tissue culture derived from a particular type of aggressive lymphoma known as diffuse large B cell lymphoma," Staudt said. "Some cells were treated with the drug ibrutinib, which blocks B cell receptor signaling and thereby kills these lymphoma cells."*

PHOTOS: BILL BRANSON

just start there," she said, in answer to a question about whether current austere funding conditions should be considered the "new normal." "Getting rid of sequestration—which is a multi-year noose around the neck of the government's budget, so however bad it is this year, it gets worse. The noose is tightening and the targets are getting lower. Getting rid of that framework is the top priority for [the Office of Management and Budget], the top priority for the President, the top priority for this administration moving forward."

Acknowledging NIH's loss of \$1.5 billion (and \$15.5 billion suffered by HHS overall) due to the cuts, Sebelius said she has "some hope that there is a growing sentiment not just among allies in the Senate, but a growing number of members on the House side that this policy doesn't make sense."

The secretary emphasized that NIH, medical research and scientific advances are among the Obama administration's top concerns not simply for the health of citizens but also for the well-being of the economy.

"On behalf of the 300 million Americans who are not in the room today, I just want to say thank you," she said. "There couldn't be more important work anywhere in the world. We are trying to make sure that even in the most difficult budget times, you continue to have resources to keep that work going forward... We are investing tens of billions of dollars each year to make sure this institute stays the world-class scientific and biomedical research institute. I believe and I know the President believes that it is by far one of the most important investments we can make as a country. That investment pays off not only here but [also] in communities

across the country... Everyone agrees that funding science at this moment in time is one of the single best investments this country can make, and cutting back on scientific research and funding is idiotic in a global economy... Your interests are at the top of the funding chain—not just at HHS but government-wide."

***"NIH continuing to be the gold standard of the world in terms of a research facility is critical. There is support at the very highest levels, starting with the President. Our directive each and every year—even in very difficult budget times—is 'keep your hands off NIH.'"***

Humorously referring to herself as a "recovering governor," Sebelius said she was gratified to see firsthand the value to a community of NIH extramural investment. The University of Kansas last year was designated a national cancer center by NCI, a goal Sebelius began working toward when she served as head of the state.

"The research you're doing on everything from heart attack to stroke to HIV/AIDS, cancer, universal influenza vaccine, Alzheimer's, the new brain-mapping project—every place I look the efforts here are going to have a huge impact on not only the future health of this country but I think the future financial well-being of the country," she said. "The National Center for Advancing Translational Sciences that has been a huge focus of [NIH director] Dr. [Francis] Collins has enormous potential and is a



At a brief meeting with NIH institute and center directors, Sebelius is greeted by (from l) NIAID director Dr. Anthony Fauci, NINDS director Dr. Story Landis and NIBIB director Dr. Roderic Pettigrew.

great illustration of what a leader does even in a very difficult time. To look at the assets of a great institution like the National Institutes of Health, but recognize there are some missing pieces and [that] in order to take advantage of some of the major breakthroughs, you need to put a big bet down.”

Asked whether science ever comes up as a solution in top-level cabinet talks, Sebelius said, “I know it may be hard to feel the love sometimes. I can tell you that the President is totally fascinated with science and research and is always a little unhappy if he didn’t hear something in advance of it coming out in the newspaper...He is interested not only in the breakthroughs and the research and the impact, but also understands what a critical component of our economy research is. Staying at the forefront of the world...NIH continuing to be the gold standard of the world in terms of a research facility is critical. There is support at the very highest levels, starting with the President. He is interested and eager to learn...You have brought out his inner nerd. Our directive each and every year—even in very difficult budget times—is ‘keep your hands off NIH.’”

Opening the town meeting and introducing Sebelius as “a remarkably quick study” who has had to “become an expert on an extraordinary range of issues...from disaster response to vaccine production to health care insurance to the innovative science for which NIH is so well known,” Collins said, “on behalf of the 19,000 NIH employees, I’d like to extend a warm welcome to my boss—and yours too, by the way.”

In parting comments, Sebelius hinted that NIH might expect another visitor—even higher on the leadership hierarchy. “I want to recognize Dr. Collins and the incredible team of institute leaders,” she concluded. “The team around the director is just dazzling. I will take it on as my personal mission to work on getting my boss back out here to reaffirm the very important role that you play. That’s my take-away from this.”



Above, NICHD’s Dr. Constantine Stratakis (l) smiles as he watches Alexis Campbell meet HHS Secretary Kathleen Sebelius, as HHS Deputy Secretary Bill Corr looks on. At right, Ryan Kennedy of the Clinical Center tosses the ceremonial first pitch July 23 at Nationals Park.



## NIH’ers Featured at ‘HHS Night at the Ballpark’

NIH’ers were front and center July 23 at the 5th annual “HHS Night at the Ballpark.”

Ryan Kennedy, an information technology project manager in the Clinical Center’s clinical research informatics department, threw the ceremonial first pitch. He won the Designated Pitcher drawing held by HHS Secretary Kathleen Sebelius.

Also on hand from NIH was Dr. Constantine Stratakis, senior investigator in NICHD’s Division of Intramural Research, who accompanied one of his patients, 11-year-old Alexis Campbell of East Moriches, N.Y. She is being treated at the Clinical Center for Carney complex disease, a genetic disorder.

Greeted as a special guest during the game, Campbell watched herself on the Nationals’ big screen and was out on the field when the first pitch was thrown.

More than 4,000 HHS employees attended the game. The Washington Nationals lost to the Pittsburgh Pirates.



Above, Washington Nationals mascot Screech greets Kennedy and Sebelius.

Below left, Crystal Brown (l) of NICHD, Campbell and Stratakis pause for a photo on Nats’ field. Stratakis has known the Campbell family for a long time, and has treated Alexis’ mother, Kathleen, since Kathleen was 11 years old. Below right, Campbell watches herself on the Nationals’ big screen.

PHOTOS: CHRIS SMITH, ROSALINA BRAY





## LACKS

CONTINUED FROM PAGE 1

### Above:

On hand at the Aug. 7 media telebriefing were (from l, listing their relationship to Henrietta Lacks) Shirley Lacks, daughter-in-law; David Lacks Jr., grandson; NIH deputy director for science, outreach and policy Dr. Kathy Hudson; NIH director Dr. Francis Collins; Veronica Spencer, great-granddaughter; and Jeri Lacks-Whye, granddaughter.

PHOTO: CHRISTOPHER MYERS

authors to remove the sequence from an open-access database until they could formulate a plan that would both honor the Lacks family's privacy and also allow the scientific community to continue studies of the first-ever human cell line.

In the intervening months, Collins, Hudson and their colleagues traveled to Baltimore on three occasions to work with members of the Lacks family to draft a plan that protects and keeps personal family genetic information, while allowing science to go forward. That agreement was made public Aug. 7 in a telebriefing conducted at Johns Hopkins University, in whose hospital Lacks was a patient 62 years ago.

"This is a novel and, I believe, historic agreement," said Collins. "It will protect the family's interest and advance research."

Shortly after the German paper appeared, NIH leadership learned that Dr. Jay Shendure of the University of Washington also was readying publication of a paper describing the whole genome sequence of a second HeLa cell line in the journal *Nature*.

"We all said, 'Hey, let's hold up just a minute and take stock of where we are,'" said Collins. He said the U.S. team, like their German counterparts, not only agreed with NIH but also voluntarily complied.

Hudson described for reporters a "controlled access pathway" that NIH-funded scientists will now have to follow in order to work with HeLa genome data. Briefly, investigators will have to apply to NIH for access to the data, consent to abide by terms of the agreement, acknowledge the Lacks family in any papers or presentations and deposit any future data in the NIH HeLa dbGaP (database of Genotypes and Phenotypes, hosted by NLM's National Center for Biotech-

nology Information). They must also agree not to contact members of the Lacks family.

Further, NIH announced establishment of a new working group that will review scientists' proposals to work with the HeLa genome sequence; it will report to the advisory committee to the NIH director. Two members of the Lacks family are included in the review panel.

Collins called the decision to protect Henrietta Lacks' privacy one of the most challenging scientific, societal and ethical issues of his 20-year career at NIH. "Philanthropy is the altruistic donation of precious resources for the benefit of others. We should all count Henrietta Lacks and her family among the greatest philanthropists of our time," he said.

"The circumstances surrounding this agreement are unique, since no consent was obtained for the derivation of the cell line and the identity of blood relatives is widely known," he added. "This plan for data access for the HeLa genome sequence should not be seen as setting a general precedent for other immortalized cell lines."

Henrietta's granddaughter, Jeri Lacks-Whye of Baltimore, said, "Today's release of the HeLa genome sequencing is a historic game-changing event. In the past, the Lacks family has been left in the dark when it came to science. For more than 60 years, our family has been pulled into science without our consent and researchers have never stopped to talk to us, to share information with us or give us a voice in the conversation about HeLa cells until now.

"We are proud of everything the HeLa cells have done for science and for society," she continued. "And we are excited to be part of the important ongoing HeLa research to come...The family has always felt strongly about the importance of sharing Henrietta's story and honoring her legacy by making sure people know who she was and what her cells have done for science."

David Lacks Jr., grandson of Henrietta, spoke frankly and somewhat humorously about the evolving nature of scientific understanding that unfolds to this day with HeLa cells.

"If you're watching that movie *Wall Street*, where Michael Douglas is on the beach with a big cell phone, you're like wow, that's so cool. Now, you look at a cell phone today, it could do a hundred thousand more things than that cell phone could ever do, and we carry them commonly in our pocket. So, that's the same analogy I see with genome. Right now, it's at the early stage of where the cell phone was beginning and who knows where it could be 20 years from now?"

He said his family is trying to avoid a “free for all” where anyone with access to a computer can find out what his relations’ medical risks are. “I’m not supposed to be going bald,” he joked, “and that’s certainly not the case.”

Collins pointed out to reporters that “it is possible with a DNA sequence to make some general statements about what that person’s potential future medical problems might be...but that’s very sort of weak and squishy right now... Over time, as we learn more and more about how the genome can be used to predict a future illness, as we understand heritability better, then perhaps this privacy issue will grow and not shrink.”

Author Skloot was on hand at the telebriefing; Lacks-Whye explained that it was Skloot who first notified the family in March that Henrietta’s genomic profile was publicly available.

“It was shocking and a little disappointing knowing that Henrietta’s information was out there,” said Lacks-Whye. “It was like her medical records were just there for anybody to view, just with a click of a button...It seemed like history was repeating itself.” But she said NIH’s concern in the matter “has kind of made things more settling.”

Lacks’ great-granddaughter, Veronica Spencer of Baltimore, thanked Skloot during the briefing for all she has done for the family. Skloot attended all of the NIH negotiation sessions by telephone and called the day “a really historic moment...This is the first time in history where scientists have stopped and said, wait a minute, before we go on, let’s see what the Lacks family thinks.”

David Lacks Jr. called the negotiations a “pleasure and an enjoyable experience” and expressed regret that the agreement will add an extra step for scientists. “I do want the science community to know that we are pro-science... We just wanted to add the extra step to protect our privacy...we don’t know [what future] genome science will reveal about us.”

Collins, too, called the day “a remarkable, historic moment.” He described the negotiations, which took place during evening hours, as “profound in terms of their significance.” He told the Lacks family, “Your voices are going to be the most important ones at the table.

“So the legacy of Henrietta Lacks continues and expands,” he concluded. “Maybe it’s just beginning—our ability to understand what she has given us.” ●



*Photographer David Berg of the Ottery Group of Kensington, Md., takes pictures of the exterior of Bldg. 7. Photographic documentation of historically eligible buildings is required by the Maryland State Historic Preservation Office prior to demolition.*

*Once State-of-the-Art*

### **Bldg. 7 To Be Demolished, Along with Bldg. 9**

On July 30, a photographer spent the day documenting the exterior and interior of the storied Bldg. 7, located just west of Bldg. 5 along Memorial Dr. His photos will be entered into the Historic American Buildings Survey, a print and online repository of structures, landscapes and objects deemed to be of historic and/or architectural value ([www.nps.gov/history/hdp](http://www.nps.gov/history/hdp)). Following decontamination of both Bldg. 7 and nearby Bldg. 9, NIH intends to demolish the functionally obsolete structures, thereby freeing up the site for a new research facility.

Bldg. 7 was built in 1947 as the first structure of its kind for NIH, a contained laboratory facility with changing rooms for male and female scientists. It was designed with unique ventilation features to isolate the spread of germs discovered and used in the research of infectious diseases. Indeed, at the time, it was lauded in the contemporary press as the nation’s latest weapon in the war against infectious diseases. Between December 1945 and June 1946, “Q fever” was diagnosed in 47 employees in Bldg. 5; some of those infected died. Thus great precautions were taken in the design of Bldg. 7, to prevent any future loss of life. The facility was dedicated to those who had died and was therefore named the Memorial Laboratory Bldg.

Its architectural and engineering innovations were lauded in *Architectural Record*, *Life* and *The Nation’s Business*, decontamination locks being the most innovative feature of the building. The 1963 *NIH Almanac* refers to the building simply as Bldg. 7, and from that point onward the designation “Memorial Laboratory” fell out of common usage. Memorial Dr., the existing service road that runs between South and Center Drives, will remain in use and continue as a point of reference to the inherent risk associated with scientific discovery.

Home, over the years, to scientists from many institutes and centers, Bldg. 7’s last occupants were NEI scientists before they moved into the recently renovated Bldg. 6 in 2009. Construction of the Memorial Laboratory in 1947, which cost over \$1,000,000, was overseen by Gilbert Stanley Underwood, the supervising architect of the Treasury.—**Phil Neuberg**



## NATURAL PRODUCTS

CONTINUED FROM PAGE 1

### Above:

Clardy said, “We’re not the only ones who do farming. There are animals that have been doing it as a specialized form of symbiosis much longer than we have.”

Natural products have transformed our understanding of biological processes and provided many important types of therapeutic agents, he said. In recent years, though, their role in biomedical discovery research has been decreasing. However, there are ways that the field could be retooled so that it is more compatible with the current discovery environment. Among the public-health needs for these kinds of small molecules are novel antibiotics, primarily to address antibiotic resistance, and antifungals for the destructive fungal and fungal-like diseases emerging in humans, animals, plants and the ecosystem.

Clardy told stories from his laboratory illustrating ways that bacteria (a particular interest of his) interact with humans and certain insects. These interactions typically are mediated by the kinds of small molecules that are logical targets of natural-product research and are relationships of mutualism, or a two-way street of benefit to both parties.

As one example, “We’re not the only ones who do farming,” Clardy said, referring to humans. “There are animals that have been doing it as a specialized form of symbiosis much longer than we have,” such as beetles, ants and termites. In their farming, they grow and/or carry bacteria that make small molecules. These small molecules combat parasites or pathogens that attack the insect or its food supply and they can also have other functions such as antibiotic, antibacterial or antifungal. The insect uses its own sophisticated chemistry in creating these molecules and “while the names and molecules change, the strategy is consistently the same.” Since there are about 6,000 species of beetles, 200 species of ants and 300 species of termites, there are many research possibilities in this arena alone.

“What I find interesting,” Clardy said, “is that these ideas were not thought up by scientists, but

came from small molecules and were evolutionarily selected.” The trick is to find these molecules (“the known unknowns”) and their antecedent genes or gene clusters. To do so, researchers can take advantage of the widespread genomic sequencing of bacteria.

Clardy recommended expanding use of efficient, algorithmic and systematic approaches. An advantage is that, in bacterially produced natural products, the phenotype is clear. Challenges, however, include if bacteria stop their aggressive molecular activity when removed from their host or if there is horizontal gene transfer. His other recommendations included obtaining more and better bioinformatic tools, having different skill sets on a team, working on at least a fairly large scale and using high-throughput screening.

Dr. Josephine Briggs, NCCAM director, noted, “I am delighted to have NCCAM sponsor this new scientific interest group (SIG). It will help encourage the kind of dialogue between biologists and chemists that may facilitate mutual understanding and collaboration. There is an extraordinary chemical diversity out there to be captured.”

To join the SIG, email Dr. John Williamson at [williamsonjs@mail.nih.gov](mailto:williamsonjs@mail.nih.gov).

### NIDDK Alumnus Bieri Mourned

Dr. John Bieri, former NIDDK biochemist, died on July 30 at age 93.



From 1955 until his retirement in 1983, he served as head of the nutritional biochemistry section in the Laboratory of Nutrition and Endocrinology. His research focused on metabolism of vitamins A and E and essential fatty acids.

While at NIDDK, Bieri developed the NIH standard diet for laboratory rodents. Following retirement, he was a visiting lecturer at the University of Maryland and a consultant to industry. He was the recipient of the Public Health Service Superior Service Award and a fellow of the American Society for Nutrition.

Bieri is survived by his wife of 70 years, Shirley Bloch Bieri of Silver Spring, a son, 2 daughters, 4 grandchildren, 2 step-grandchildren and 2 great-grandchildren. He is also survived by 2 brothers.

## Katz Named Director of NIAMS Branch

Dr. James D. Katz has been named director of the Rheumatology Fellowship and Training Branch, NIAMS. He will oversee the Rheumatology Fellowship Training Program and direct the intramural Community Research and Care Branch.

Katz received his medical degree from Case Western Reserve University in 1986, and completed his internship and residency in internal medicine in 1989 at Western Pennsylvania Hospital. In 1991, he completed rheumatology fellowship training at the University of Connecticut Health Center. He is a fellow in the American College of Rheumatology and the American College of Physicians.



Most recently, Katz served as director of the division of rheumatology at George Washington University, where he led the Rheumatology Fellowship Program from 2001 to 2007. He published studies on decision-making skills in physician trainees and has received a number of honors and awards for his clinical expertise, teaching and mentoring.

Katz has also published papers in myositis, osteoarthritis and diagnostic imaging and pain management in rheumatology. He was recently appointed to the Food and Drug Administration's arthritis advisory committee. In addition, he was selected as a rheumatology consultant to the White House medical unit.

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## Compost Program Set to Pilot, Sept. 3

Beginning Sept. 3, a pilot program for post-consumer compost collection will begin in the Bldg. 10 cafeterias. The program is sponsored by NIH's Division of Environmental Protection and Division of Amenities and Transportation Services in coordination with Eurest Dining Services. Plans are to expand to the remaining cafeterias on campus if the pilot is successful.

NIH now has an opportunity to dramatically reduce the amount of solid waste currently generated as a result of food service operations. Signs will list acceptable and non-acceptable items. Be sure to put your food waste, napkins and biodegradable cups and containers in the appropriately labeled bin.



*Rob Thomas (l) engages students in a chemistry class at a local high school.*

## Calling All Scientists for Education

Are you a scientist looking for a way to share your expertise with the local community—and to support science teachers? If so, the American Association for the Advancement of Science and the Senior Scientists and Engineers (SSE) invite you to join the AAAS/SSE STEM (science, technology, engineering and mathematics) Volunteer Program.

The program pairs experts in STEM fields (current employees and retirees) with kindergarten-through-grade-12 teachers who request their help. The dynamic teaming helps teachers enrich the curriculum. It also gives volunteers a way to connect with their peers outside the lab and learn about teaching science from education experts—all while engaging the next generation of scientists.

Volunteers don't navigate the transition from bench to classroom on their own. They have a handbook that covers the essentials of working in schools and they get support and training from other volunteers who are already active in the program. In fact, the camaraderie among volunteers is one of the best perks of the job, according to current volunteer Gary Temple, a retired scientist and former NHGRI employee.

The program is so popular with teachers in the areas it currently serves—Montgomery, Fairfax, Arlington and Prince William counties and the District of Columbia—that AAAS can't keep up with demand. "There is a persistent shortage of biomedical scientist volunteers," says Rob Thomas, team leader of the Montgomery County program. Only 5 of the 30 SSE volunteers in the county are current or retired NIH employees. That's a number Thomas would like to see increase.

Volunteers are encouraged to commit to working in the classroom from 1 to 4 hours per week, depending on their schedules, for an entire school year. Since volunteers become such an integral part of the classroom, "they are almost like a member of the faculty," says Thomas.

They also discover unexpected benefits of participating in the program. For example, Temple says, "I was concerned that when I retired, I might lose touch with advances in biomedical science. I've discovered, in fact, that school volunteering stimulates me to keep up with an even broader spectrum of biomedical science topics. Plus, I'm challenged to find effective ways to communicate the essence and excitement of these advances to 6th- and 7th-grade students."

Now is the perfect time to sign up, since the next orientation meeting is Monday, Sept. 9 in Chevy Chase. To volunteer, contact Thomas at robert.james.thomas@verizon.net. For more information, visit [www.seniorscientist.org](http://www.seniorscientist.org).

## Investigational Malaria Vaccine Found Safe, Protective

An investigational malaria vaccine has been found to be safe, to generate an immune sys-



*This Anopheles gambiae mosquito is obtaining a blood meal as it feeds on a human host.*

PHOTO: CDC/JIM GATHANY

tem response and to offer protection against malaria infection in healthy adults, according to the results of an early stage clinical trial published Aug. 8 in the journal *Science*.

The vaccine, known as PfSPZ vaccine, was developed by scientists at Sanaria Inc., of Rockville, Md. The clinical evaluation was conducted by researchers at NIAID, the Army and the Navy.

Malaria is transmitted to humans by the bite of an infected mosqui-

to. After the bite occurs, infectious malaria parasites in the immature, sporozoite stage of their life-cycle first travel to the liver, where they multiply, and then spread through the bloodstream, at which time symptoms develop.

The PfSPZ vaccine is composed of live but weakened sporozoites of the species *Plasmodium falciparum*, the most deadly of the malaria-causing parasites.

“The global burden of malaria is extraordinary and unacceptable,” said NIAID director Dr. Anthony Fauci. “Scientists and health care providers have made significant gains in characterizing, treating and preventing malaria; however, a vaccine has remained an elusive goal. We are encouraged by this important step forward.”

### New Data Reveal Extent of Genetic Overlap Between Major Mental Disorders

The largest genome-wide study of its kind has determined how much 5 major mental illnesses are traceable to the same common inherited genetic variations. Researchers funded in part by NIH found that the overlap was highest between schizophrenia and bipolar disorder; moderate for bipolar disorder and depression and for ADHD and depression; and low between schizophrenia and autism. Overall, common genetic variation accounted for 17-28 percent of risk for the illnesses.

“Since our study only looked at common gene

variants, the total genetic overlap between the disorders is likely higher,” explained Dr. Naomi Wray of the University of Queensland, Brisbane, Australia, who co-led the multi-site study by the cross disorders group of the Psychiatric Genomics Consortium, which is supported by the National Institute of Mental Health. “Shared variants with smaller effects, rare variants, mutations, duplications, deletions and gene-environment interactions also contribute to these illnesses.”

Members of the PGC group reported on their findings Aug. 11 in the journal *Nature Genetics*.

“Such evidence quantifying shared genetic risk factors among traditional psychiatric diagnoses will help us move toward classification that will be more faithful to nature,” said Dr. Bruce Cuthbert, coordinator of NIMH’s Research Domain Criteria project, which is developing a mental disorders classification system for research based more on underlying causes.

### NIH-Funded Study Discovers New Genes for Childhood Epilepsies

A genetic study of childhood epilepsies has linked two new genes to severe forms of disease and provides a novel strategy for identifying therapy targets. The study used a cutting-edge genetic technique, called exome sequencing, to search for new mutations that are not inherited. The results suggest this may be a highly effective way to find and confirm many disease-causing gene mutations.

“It appears that the time for using this approach to understand complex neurological disorders has arrived,” said Dr. David Goldstein, director of the Center for Human Genome Variation at Duke University Medical Center and a leader of the study. “This moderately sized study identified an unusually large number of disease-causing mutations and provides a wealth of new information for the epilepsy research community to explore.”

The study is part of a worldwide \$25 million project, largely funded by NIH, that uses the latest genetic techniques to sequence and analyze DNA from 4,000 epilepsy patients and their relatives. The study, published in *Nature*, found as many as 25 epilepsy-causing mutations in new and previously identified genes.

## FOIL THE FLU!



## Flu Immunizations for NIH Employees Start in September

Beginning Monday, Sept. 9, the Office of Research Services and the Clinical Center will offer free flu shots to anyone who has a valid NIH identification badge.

“It’s really important to protect yourself and those around you from the flu,” says Dr. Tara Palmore, deputy hospital epidemiologist for the CC. “Healthy adults can infect others a full day before symptoms develop. So even if you stay home when you get sick, you may have already transmitted the flu.”

With a particularly susceptible population of immune-compromised patients, the Clinical Center requires all staff who have patient contact—employees and contractors—to get the flu vaccine each year. For all other NIH staff, immunizations are available but not required. Staff who are 65 or older are eligible to receive a high-dose flu shot. For more information about the high-dose shot, visit [www.cdc.gov/flu/protect/vaccine/qa\\_fluzone.htm#what\\_fluzone](http://www.cdc.gov/flu/protect/vaccine/qa_fluzone.htm#what_fluzone).

The flu immunization clinic will be held on the east side of the 7th floor of the Clinical Research Center (take the elevators near the north entrance hospitality desk to the 7th floor). Changing areas will not be available, so wear clothing that will allow you to quickly and easily expose your upper arm. Following immunization, the Occupational Medical Service will send an email with a questionnaire and certificate of immunization.

The best way to reduce your risk of getting sick or exposing patients and others to illness is to get the flu shot every year, says Palmore. “It’s both a benefit we’re providing and an essential preventive health measure.”

For more information, visit [foiltheflu.nih.gov](http://foiltheflu.nih.gov) or call (301) 496-2209.

## 2013 Immunization Schedule

NIH employees and contractors are encouraged to participate. NIH photo ID required. Open to all. No alphabet restriction. Maps for influenza immunization sites are available at [foiltheflu.nih.gov](http://foiltheflu.nih.gov).

Date	Day	Location	Morning	Afternoon/Evening
9/9	Monday	10-CRC <sup>1</sup>	8–11:30	12:30–3:30
9/10	Tuesday	10-CRC	8–11:30	12:30–3:30
9/11	Wednesday	10-CRC	8–11:30	12:30–3:30
9/12	Thursday	10-CRC	6–11:30	12:30–7
9/13	Friday	10-CRC	8–11:30	12:30–3:30
9/16	Monday	10-CRC	8–11:30	12:30–3:30
9/17	Tuesday	10-CRC	8–11:30	12:30–3:30
9/18	Wednesday	10-CRC	6–11:30	12:30–7
9/19	Thursday	10-CRC	8–11:30	12:30–3:30
9/20	Friday	10-CRC	8–11:30	12:30–3:30
9/21	Saturday	10-CRC	6–8:30	6–8:30
9/23	Monday	10-CRC	8–11:30	12:30–3:30
9/24	Tuesday	10-CRC	6–11:30	12:30–7
9/25	Wednesday	10-CRC	8–11:30	12:30–3:30
9/26	Thursday	10-CRC	8–11:30	12:30–3:30
9/27	Friday	10-CRC	8–11:30	12:30–3:30
9/30	Monday	Rockledge <sup>2</sup>	8:30–11:30	1–3
10/1	Tuesday	Rockledge	8:30–11:30	1–3
10/2	Wednesday	Shady Grove <sup>3</sup>	8:30–11:30	1–3
10/3	Thursday	Shady Grove	8:30–11:30	1–3
10/4	Friday	Shady Grove	8:30–11:30	1–3
10/5	Saturday	10-CRC	6–8:30	6–8:30
10/7	Monday	N/A	Closed	Closed
10/8	Tuesday	NSC <sup>4</sup>	8:30–11:30	1–3
10/9	Wednesday	NSC	8:30–11:30	1–3
10/10	Thursday	Twinbrook III <sup>5</sup>	8:30–11:30	1–3
10/11	Friday	N/A	Closed	Closed
10/15	Tuesday	10-CRC	8–Noon	Noon–3:30
10/16	Wednesday	10-CRC	8–Noon	Noon–3:30
10/17	Thursday	10-CRC	8–Noon	Noon–3:30
10/18	Friday	10-CRC	8–Noon	Noon–3:30
10/16	Wednesday	Poolesville Bldg. 103 Bldg. 110	8:30–10:30 a.m. 11 a.m.–1 p.m.	

<sup>1</sup>Main Campus: Bldg. 10 CRC, 7th Fl. Atrium, East Side

<sup>2</sup>Rockledge: 6610 Rockledge Dr., Rm. 1106 A+B

<sup>3</sup>Shady Grove: 9609 Medical Center Dr., Rockville, Rms. TE408/TE410

<sup>4</sup>Neuroscience Center: 6001 Executive Blvd., 1<sup>st</sup> Fl. Rm. B

<sup>5</sup>Twinbrook III: 12735 Twinbrook Pkwy., Rm. 2E06

## Summer Poster Day Connects Current, Future Scientists

By Sarah Krosnick

In some ways, NIH is similar to a school—large wooded campus, cafeteria, students and teachers, lectures and a science fair. But this is not your typical build-a-volcano science fair. Rather, NIH's annual Summer Poster Day offers summer interns of all ages the opportunity to showcase their research projects, completed with the help of professional scientists. Held in Bldg. 45 on Aug. 8, the day celebrated a community of learning, teaching and sharing among interns, NIH employees and family members.

Participants in the 2013 Summer Intern Program emphasized their appreciation for the depth of research and individualized learning offered by researchers doubling as mentors. Shai Porat, NIDA intern, said, "This was more focused, one-on-one training," than he had experienced in college. Suzanne Xu, NINDS intern, voiced a similar sentiment: "NIH gave me an opportunity to really go in-depth with topics we can't really discuss in school...such as *C. elegans* studies." She particularly enjoyed being responsible for her own personal project while also collaborating with researchers on their work.

Rhea Sharma, NIMH intern, studied the genetic components of schizophrenia and, in the process, explored a "term that's loosely thrown around [in society]...but no one really exactly knows what this disorder is all about." She said her 6-week internship has convinced her that she would like to study both psychiatry and genetics in the future, possibly enrolling in college classes on the subject.

Porat also expects his summer lab experience to "help me when I go back to my home lab...it's going to be great for grad school."

The advantages of the Summer Intern Program are like a 2-way street—not only do students gain invaluable experience in professional labs, but also NIH prepares the next generation of bright young scientists to solve the medical issues of the future.

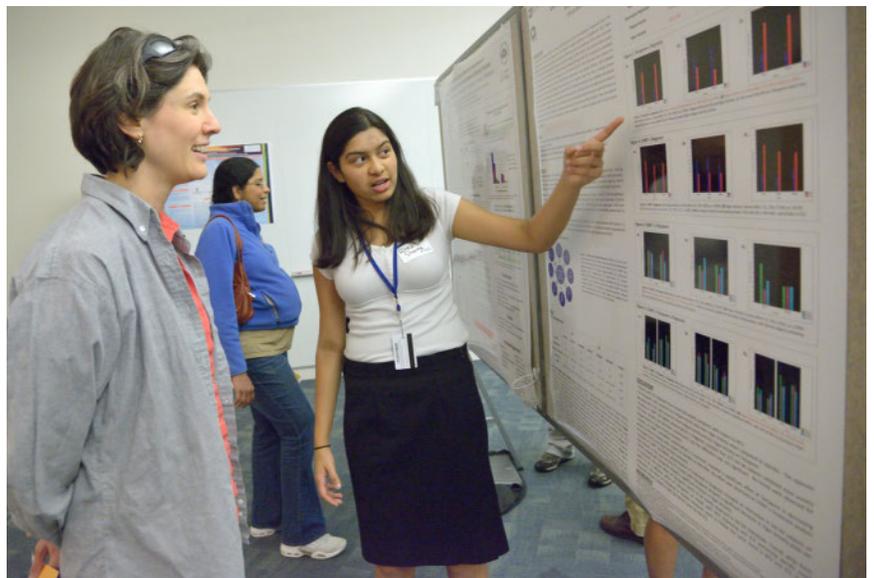
### At right:

*Suzanne Xu (l) of NINDS explains her poster to NHLBI's Melanie Barzik. At far right, Devin Bageac (l) of George Washington University points out to Samuel Bara aspects of his NINDS-sponsored work on the role of the cortex in learning.*

PHOTOS: ERNIE BRANSON



*NIDA's Shai Porat (l) discusses his work on a predictor of relapse in individuals addicted to cocaine with Shae Omonijo, also of NIDA.*



*Julie Gold (l) of the Office of Intramural Training & Education listens to NIMH's Rhea Sharma explain her summer work.*

