

'AN AMAZING RIDE'

ACD Applauds Collins, Meets New Clinical Center CEO

BY CARLA GARNETT

Presiding over what might have been his final meeting as chair of the advisory committee to the NIH director, Dr. Francis Collins received an impromptu standing ovation that left him visibly moved. It was Dec. 9—the second and final day of the group's deliberations. NIH principal deputy director Dr. Larry Tabak had just outlined several possible administration/HHS transition scenarios, when various ACD members raised questions about the status of the NIH director position in the weeks just before and after Inauguration Day, Jan. 20.



NIH director Dr. Francis Collins presides over what might have been his last ACD.

Collins explained that, like all political appointees after a presidential election, he had submitted a resignation letter, required by law, to the President.

That's when Dr. Brendan Lee of Baylor College of Medicine, attending his first ACD meeting, thanked Collins for his service to the group, to NIH and to the medical research community at large. Spontaneous,

rousing applause erupted, resulting in a standing ovation around the table.

"This very likely being my last ACD meeting," Collins said after the adulation subsided, "I want to give a shout-out to this particular group—and their particularly effective way of wrestling with difficult issues. The members of the ACD have worked tirelessly these last 7½ years and given us at NIH the kind of advice we so desperately needed from really wise people. I'm grateful to all of you here and to all the others who have sat around this table over those years...It has been an amazing ride."

At the 15th meeting of the advisory group since he became NIH director in August 2009, Collins mentioned several achievements over his tenure that he said owe their beginnings to the ACD: the formation of the National Center for Advancing Translational Sciences, shaping of the

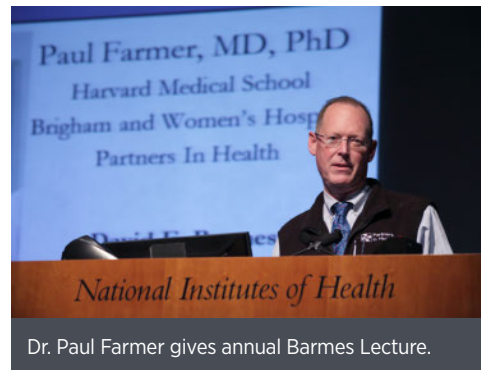
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Dear deer cross here. See p. 2 for annual census.

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Dr. Paul Farmer gives annual Barmes Lecture.

Physician Gives Hope, Healing To World's Poor

BY DANA TALESNIK

Dr. Paul Farmer has spent decades providing medical care and expanding health access to the world's poor, shattering the myth that it's untenable to treat the sick in settings of privation. Treating underserved populations is not a pipe dream, Farmer said, when you have "the staff, stuff, space and systems" to make it a reality.

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TRAINING IN MENTAL HEALTH

Olivet Aims to Speed Compassionate, Effective Intervention

BY RICH MCMANUS

There is a canard in health care about a 17-year gap between science and service, and between research and clinical practice. Jeff Olivet, CEO of the Center for Social Innovation (C4) in Needham, Mass., is determined to narrow that gap through the creative and compassionate application of new learning and teaching methods.

These approaches, which he described



Jeff Olivet

SEE OLIVET, PAGE 4

Huberman To Give NEI Audacious Goals Seminar, Jan. 24

Dr. Andrew D. Huberman will present “Visual restoration: bridges and gaps to curing blindness in humans,” part of the National Eye Institute Audacious Goals Initiative (AGI) Seminar Series in Neuroregeneration, Tuesday, Jan. 24 at 3 p.m. in Lipsett Amphitheater, Bldg. 10.



Huberman is an associate professor at Stanford University School of Medicine, departments of neurobiology and ophthalmology, and a faculty member of Bio-X, Stanford’s interdisciplinary biosciences program. His seminar will summarize strategies for neuroregeneration of the visual system, reveal what scientists have learned by studying organisms with robust regenerative capacity and describe how medicine is applying this knowledge to some day reverse vision loss in humans.

The NEI AGI Seminar Series in Neuroregeneration explores topics relevant to regenerative neuroscience and medicine, with special emphasis on the visual system. For more information about the series, visit <https://nei.nih.gov/audacious/>.

Use Social Media Wisely, Responsibly

Social media can be a great way of sharing your opinions and life events with friends and family. The opportunity to find, share and comment on information, data and imagery is unprecedented. But it is important to recognize that the use of social media can also present certain risks.

One of the best things you can do to safeguard yourself, as well as NIH, is to add a disclaimer to all of your social media accounts. Examples can include simple statements such as “All views/posts are my own” as part of your account’s personal/biography section. This is the same location where it is permissible to identify your affiliation with NIH. But be aware that a violation of policy could occur if the NIH name or logo is prominently featured. Also, remember the “rule of 3.” In identifying yourself as from NIH, it should be with at least two other “facts” in your profile.

In the same spirit, do not use your .gov address to identify yourself on social media sites. Use a personal email account to avoid giving the appearance of the federal footprint or any inference of government policy or opinion.

For further guidance, visit <https://www.nih.gov/guidance-private-account-social-media-use-individuals-nih>.

Collins Receives FASEB Award

The Federation of American Societies for Experimental Biology will present its 2017 Public Service Award to NIH director Dr. Francis Collins for his outstanding accomplishments in the communication of science.

“Francis Collins is a model of scientific citizenship,” said Dr. Hudson Freeze, FASEB president. “His passion for public education has been an inspiration and his leadership has motivated thousands of scientists to join him in public outreach. His tireless efforts have earned him our admiration and gratitude.”

Collins’ public outreach has included appearances on the *Colbert Report*, *The Charlie Rose Show*, *CNN*, *CNBC*, *National Public Radio* and many other programs, FASEB noted. The group also cited the Director’s Blog and Collins’ communication with thousands of his Twitter followers.

“Whether on camera, in print, online or in song, Francis has the remarkable ability to explain complex scientific concepts to general audiences,” said Freeze. “These extraordinary efforts to underscore the importance of research, combined with his compassion for those in need of new medical interventions, have earned the respect and trust of Americans from all segments of society.”

NINR Video Now Available

Video of the 2016 NINR Science and the Public Lecture “The Most Important Conversation We’re Not Having,” presented by Ellen Goodman, is now available. In her lecture, Goodman describes The Conversation Project, a campaign to change the way people talk about, and prepare for, their end-of-life care. The video is available on NINR’s YouTube channel at <https://www.youtube.com/user/NINRnews>.

Deer Survey Shows Herd Reaching Healthy Size

Many of us enjoy the presence of white-tailed deer roaming the grounds of the main campus, promoting a bucolic perspective in an otherwise urban landscape. Yet, in 2014, the deer population in our densely developed, enclosed campus was reaching a point that jeopardized their health and well-being, particularly due to nutritional deprivation. The herd had reached 45 deer on a 322-acre campus with a “livable square footage” able to sustain a herd of up to 26.

With no hunting permitted, no known predators, relocation outlawed and the increased threat of accidents and other human safety concerns rising during mating season, NIH decided to implement a long-term deer management program that included a humane, non-lethal stabilization of the population through anesthetization and spaying of adult females, as recommended by deer population control experts.

The deer management program is now in its third of 4 years. On the first weekend in December, a group of NIH volunteer veterinarians—the NIH wildlife veterinary volunteers—with the help of wildlife biologist consultants, conducted their annual deer survey on the Bethesda campus.

For the 2016 count, NIH has reached a healthy herd size with 24 deer—3 adult males, 1 male fawn, 1 untagged female fawn and 19 tagged females. In 2015, 29 deer were counted. With each year, NIH has approached a more favorable deer density, starting with 90 per square mile in 2014 to approximately half that density in 2016.

As a reminder, if you notice an injured or distressed wild animal on campus, call (301) 496-5685 or dial 311 from an NIH phone and an on-call veterinarian will be contacted to assist.



Either the deer on the NIH campus are law-abiding users of crosswalks, or they crossed here by accident. Regardless, their numbers are managed in order to prevent malnutrition.

YOU'RE NEVER TOO OLD

Peace Corps Director Discusses Volunteer Opportunities

BY SHANA POTASH

If you think you're too old to experience the Peace Corps, think again. During a recent visit to NIH, agency director Carrie Hessler-Radelet described opportunities for people of all ages, noting that the oldest current volunteer is 87.

Hessler-Radelet said she found her passion for public health as a Peace Corps volunteer in the 1980s, teaching school in Western Samoa. She's headed the organization since 2012 and has led extensive reforms to increase diversity, improve support for its volunteers and increase the impact of their work. The agency's mission is to promote world peace and friendship by providing trained volunteers who can encourage mutual understanding between the U.S. and the more than 60 participating countries.

Fogarty International Center director Dr. Roger Glass hosted Hessler-Radelet for a "fireside chat" at Stone House to discuss volunteer opportunities, including those related to global health and research. They also reflected on overlapping interests between the Peace Corps and NIH. Both are engaged in capacity-building of health care workers in Africa and the Peace Corps is involved in implementation research and evaluations in diseases ranging from malaria to cervical cancer.

While the majority of people who serve

are in their 20s, about 9 percent are over the age of 50. Of that group, most are older than 60, Hessler-Radelet estimated. "They are retirees who still have a lot of energy and want to use their skills and talents."

Federal workers who are nearing retirement but haven't done so yet can go into the Peace Corps, continue to accrue benefits and postpone retirement by several years, she explained, adding, "It's a great strategy."

The Peace Corps can also be a springboard into the federal workforce. Volunteers who successfully complete their service qualify for noncompetitive eligibility hiring status. And they bring back "an amazing skill set," according to Mitzi Kosciulek of the NIH Office of Human Resources, who joined in the discussion. She said more than half the people NIH recruiters meet at Peace Corps job fairs are referred on to hiring managers for consideration.

"They were the best years of my life," said returning volunteer Colleen Dundas, who served in Malawi from 2013 to 2015 and now works on national outreach efforts in the NIAMS Office of Science Policy, Planning and Communications. "I learned so much in terms of resiliency, understanding people, skills you can't even put on a resumé and skills you can, like program management, grant writing and public health work."

In addition to the well-known 2-year program, Hessler-Radelet pointed out that there also are short-term service opportunities. The Peace Corps Response program places experienced professionals in specialized assignments lasting 3 to 12 months. And the Global Health Service Partnership

program recruits doctors and nurses with a U.S. license for 1-year assignments teaching in medical and nursing schools in developing countries. It currently operates in Liberia, Malawi, Tanzania, Swaziland and Uganda.

People interested in joining the Peace Corps can now choose to apply to specific programs and countries, selecting the path that best fits their personal and professional goals; the revised online application process takes about an hour to complete.

"I've followed the Peace Corps since President John F. Kennedy put it in place," Glass said as the gathering wound down. "The idea that you have people of all ages providing service in an incredibly unique way is really wonderful."

More information can be found at www.peacecorps.gov. **R**



Peace Corps Director Carrie Hessler-Radelet joins FIC director Dr. Roger Glass for a "fireside chat" to discuss the agency's volunteer opportunities.

PHOTO: ERNIE BRANSON



ON THE COVER: *Photomicrographs of the drug AZT at magnifications of 30x and 50x*

IMAGE: LARRY OSTBY, NCI

The NIH Record

Since 1949, the *NIH Record* has been published biweekly by the Editorial Operations Branch, Office of Communications and Public Liaison, National Institutes of Health, Department of Health and Human Services. For editorial policies, email editor or phone (301) 496-2125.

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NIH National Institutes of Health
Turning Discovery Into Health

Olivet

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at a recent NIMH Director's Innovation Speaker Series lecture, take as their inspiration the technological savvy of online companies such as Zappos, which can deliver a new pair of shoes to your doorstep in pretty much the time it takes to think about it, and the social crusading of luminaries such as the 19th century mental health reformer Dorothea Dix.

Certainly one of the longest journeys between clinical insight and eventual therapy was the 2,500 years it took to eradicate smallpox, noted Olivet. In 479 BC, Thucydides recognized that smallpox survivors never got smallpox again. Ancient Chinese practitioners also took note of the link between exposure and immunity, making a powder of smallpox scabs that were then blown into the nostrils of patients. Finally, the smallpox vaccine was introduced in England in 1796, and smallpox was eradicated from the planet in 1980.

Dix, Olivet noted, was “a one-woman dissemination machine, who through the careful collection of data and a relentless focus on social change and equity” was able to inspire creation of more than 100 state mental hospitals in the U.S. between 1841 and 1881. These provided literal asylum from penal institutions, where many mentally ill inmates were treated inhumanely.

“Research and advocacy are a powerful combination,” said Olivet, whose current work is inspired by Dix’s “deep, compassionate, human, connected ideas.” He is convinced that “if we bring open ears, creativity, heart and open eyes” to the stubborn problems of homelessness and mental illness in the U.S., much suffering can be alleviated.

Olivet and his team realize that “it’s not good enough just to have good information and push it out to the world. We need really great adult learning and we need to make it sticky. Beautiful design really matters. You get really awesome stuff when it’s all put together.”

Back in 2009, C4 took on the challenge of training a mental health workforce online. With support from NIMH, they developed an 8-week course called Critical Time Innovation (CTI), an online experience that merged insights from both



“We are finding that integrating the voice of lived experience is crucial,” said Olivet, who includes on his staff many who are in recovery.

PHOTOS: ERNIE BRANSON

traditional problem-based learning and communities of practice. Some of the class was with a live instructor, but most of it was self-paced learning, Olivet explained. A fictional character they dubbed “Michael” proved central to the learning process as

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“We are moving to a learner-centric mode from a resource-centric mode. Our guiding principal is ‘You know what you need.’”

-JEFF OLIVET

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he moved through a series of “choose your own adventure” simulations. The online CTI course was designed as an alternative to 2-day in-person training, which had been the previous standard. The online version resulted in better knowledge retention among students as well as dramatic cost savings—\$2,700 per enrollee vs. \$8,116 when it was first developed.

“We now combine the online training with personal coaching,” said Olivet, who

reported that the online CTI course has been presented 12 times since 2013. Some 177 agencies have subscribed, involving about 900 trainees, and the cost is now down to about \$542 per agency, or \$108 to train a person on CTI. “We would like everybody to be doing CTI,” Olivet said, “and we believe online learning is a cost-effective, scalable way to support it.”

Another key mental health training module is motivational interviewing (MI). Here again, the standard training for years had been 2 days of classwork, followed by practice sessions. Olivet’s team developed a multi-faceted product suite that includes an MI simulation game. More than 1,000 people at some 270 agencies have trained on it so far. “The learning goes really deep,” said Olivet. “It beats a webinar, or just putting the information out there.”

Building on NIMH’s pioneering work on first-episode psychosis, Olivet and his team have recently launched a new project in partnership with NIMH and first-episode psychosis experts across the country to support dissemination of Coordinated Specialty Care (CSC). Borrowing filtering concepts from Zappos, the online CSC OnDemand tool allows users “to create their own pathway through the curriculum, which includes videos, podcasts, hand-outs

and case studies,” said Olivet. “There is a core set of modules as the starting point, then an almost infinite set of pathways through the material. We are moving to a learner-centric mode from a resource-centric mode. Our guiding principle is ‘You know what you need.’”

In addition to these high-tech curricula, Olivet and his team have also experimented with video games for young adults with psychosis. They have found that it is important to a person who has had psychosis to be able to pick such things as shoes and a look for his or her avatar. “The game is not about illness or treatment,” he continued, “but about integration of recovery into life. Basically, you live your life, and you learn about yourself, your connection to others and recovery.”

Olivet said patients also need to hear from other people in recovery. “It’s critical for finding hope and inspiration.” Video testimony from recovering patients, which is part of the game suite, is “empowering, hopeful and grounding.”

Olivet acknowledges that his center’s freshest tools for young patients can play a role in fostering hope, recovery attitudes, empowerment and overcoming stigma.

“We are finding that integrating the voice of lived experience is crucial,” said Olivet, who includes on his staff many who are in recovery. “People with lived experience have transformed the fabric of our organization,” he said. “They have sharpened the lenses we bring to our products...People are more than their labels.”

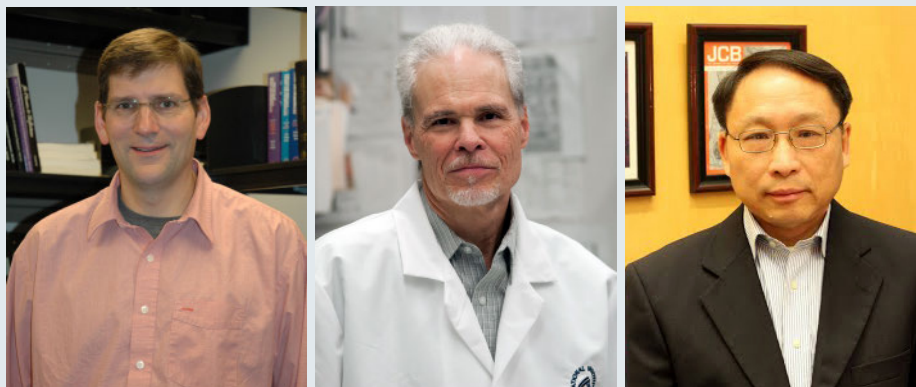
Olivet finished his talk with a brief description of a study he began in fall 2016 on why people of color are overrepresented among the homeless population. “That is a disparity that is under-studied,” he said. The 1-year mixed-methods study will examine 10 communities. “The voices of people of color who have been homeless will guide the way.”

He concluded, “Science plus technology plus story equals real change on a large scale.” He urged NIH, which provides much of the grant money for these studies, to “dig deep and stay focused. We need you more than ever. It’s incredible, the work you do. It’s changing things. What you do matters. You are improving the lives of people who have suffered deeply. And the need is more critical now than it has ever been.” **R**

NEW FELLOWS

AAAS Elevates Three NIH’ers

The American Association for the Advancement of Science (AAAS) awarded the distinction of fellow to 391 of its members in 2016, 3 of whom work at NIH. The NIH’ers, all members of the association’s section on biological sciences, have been elevated to fellow because of their efforts toward advancing science applications that are deemed scientifically or socially distinguished:



Newly named AAAS fellows include (from l) NICHD’s Dr. Thomas Dever, NCI’s Dr. Glenn Merlino and NINDS’s Dr. Zu-Hang Sheng.

Dr. Thomas Dever of NICHD, for distinguished contributions in genetics, molecular biology and biochemistry, particularly for elucidating molecular mechanisms of protein synthesis and translational control by initiation factor phosphorylation.

Dr. Glenn Merlino of NCI, for distinguished service in the development of animal models of human disease with particular reference to studies of the etiology and molecular pathogenesis of melanoma.

Dr. Zu-Hang Sheng of NINDS, for distinguished contributions to the field of axonal transport of mitochondria and endosomes-autophagosomes-lysosomes in maintenance of neuronal homeostasis and synaptic function in health and diseases.

New fellows will be presented with an official certificate and a gold and blue (representing science and engineering, respectively) rosette pin on Feb. 18 at the AAAS Fellows Forum during the 2017 AAAS annual meeting in Boston.

Founded in 1848, the non-profit AAAS is the world’s largest general scientific society and publisher of the journal *Science*. The tradition of AAAS fellows began in 1874. The association includes nearly 250 affiliated societies and academies of science, serving 10 million individuals. *Science* has the largest paid circulation of any peer-reviewed general science journal in the world.

NINR Launches ‘Stories of Discovery’ Web Feature

NINR has launched a new web feature that highlights nursing science. The Stories of Discovery web page puts a spotlight on programs of research from NINR-funded institutions around the country. The discoveries deal with areas including self-management, symptom science and end-of-life care.

“From enhancing self-management of conditions like asthma and HIV, to helping seniors receive continuity of care, these stories are examples of how nursing science is paving the way to improve patient outcomes,” said NINR director Dr. Patricia Grady.

NINR plans to add more stories as additional discoveries are made. The stories join other features that highlight NINR-funded research including Because of Nursing Research and Notable Advances. The new feature may be found at <https://www.ninr.nih.gov/stories-of-discovery>.



Dr. Paul Farmer (c) meets with NIAID patient Melva Fernandez Quispe and her father Carlos. Melva is a 7-year-old from Peru who has been at the Clinical Center receiving treatment for an infection related to her primary immunodeficiency. Farmer's organization, Partners In Health, was integral in her care for the mycobacteria infection in Peru and helped to arrange her travel and stay at NIH.

PHOTOS: BILL BRANSON

Farmer

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When Farmer last spoke at NIH 7 years ago, he showed a blueprint for a modern hospital in central Haiti. Many skeptics thought it would never get built. When he recently delivered the annual NIDCR/FIC David E. Barmes Global Health Lecture to

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“About 15 million people are alive today because of PEPFAR.”

-DR. PAUL FARMER

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a packed Masur Auditorium, he proudly showed a photo of University Hospital, the largest solar-powered hospital in the developing world. It was built by Partners In Health, the nonprofit he co-founded 30 years ago in central Haiti, which now works in 10 countries around the world.

“When you have the staff, stuff, space and systems you need, not only can you do better research, you can actually make a great difference in people’s lives,” said Farmer, Kolokotronis university professor at Harvard University; chair of the department of global health and social medicine at Harvard Medical School; and chief of the division of global health equity at Brigham and Women’s Hospital in Boston.

Farmer’s interest in Haiti and helping the poor began as a child. Raised in a Florida trailer park, and once living in an abandoned school bus, Farmer grew up picking fruit with Haitian migrant workers. He later met and interviewed more migrant workers on tobacco plantations near Duke University, where he studied medical anthropology on scholarship. Then, as a doctoral student at Harvard, between labs and exams, he began visiting public health clinics in Haiti.

“We live in communities; we’re connected across borders,” said Farmer, who advocates for global health equity. His prescription for achieving health equity is combining research and training with care. “You can’t conduct research on sick people without taking care of them. You can’t train clinicians, doctors and nurses without having the chance to take care of the sick,” he said. “Medical reform links these three things—research, teaching and service—together and that’s what’s right about an American teaching hospital.”

Unfortunately,

when the U.S. responded to the most recent Ebola epidemic in West Africa, he said, much of the funding went toward containment, not toward care. “Containment without care has been the MO [modus operandi] of all medical activity in that part of West Africa since the late 19th century...95 percent of all the deaths were right there.” Countless lives could’ve been saved, he said, if these countries had a health care system. He thanked NIH for taking risks and doing its share in the midst of that health crisis.

“Pandemic disease has been our fate for centuries and will remain our fate,” said Farmer. “I don’t believe the reason that NIH, and NIAID particularly, invested in Ebola was just because they were frightened it would be used as a bioweapon...This is science. This is a pathogen that afflicts people, and non-human primates as well, and that’s reason enough.”

In West Africa, 70 percent of Ebola patients died while nearly all Americans, with proper care, survived. Why? West Africa lacked the staff, stuff, space and systems to care for Ebola patients. Many who died were poor, said Farmer, and many others were middle-class health professionals—more than 200 just in Sierra Leone—and family caregivers.

When Partners In Health arrived in Port Loko, not far from Sierra Leone’s capital,



NIH director Dr. Francis Collins (l), Farmer (c) and Fogarty director Dr. Roger Glass plant an American Beech near Fogarty’s Stone House, a building that symbolizes NIH’s commitment to international cooperation to improve the health of people worldwide. The event was to reciprocate a tree planting in Rwanda, one of the countries where PIH operates.

Freetown, they were set up in an abandoned vocational school with no walls, electricity or running water. In Liberia, nine of the 11 facilities built with support from the U.S. military never cared for a single Ebola patient. Farmer notes, “Local capacity-building has to be linked to actually taking care of people.”

Over the years, some diseases seem to come from obscurity and cross the globe. One such disease is HIV/AIDS. While an infectious diseases fellow in the 1990s, Farmer often heard: Is it sustainable to give people antiretroviral therapy in Africa? The question always frustrated him.

“Think about the absurdity of trying to use the word sustainability as a diagnosis to decide whether that person should receive the only treatments we have for a particular lethal infection or one that causes great suffering,” said Farmer. Is it fair to tell someone—anyone—it’s not cost-effective to provide you with medicine? It’s unsustainable, he said, to argue against treating those with fewer resources.

In the 1990s, Haiti had the highest prevalence of HIV in the western hemisphere. More than 280,000 Haitians were living with HIV and some 30,000 adults and children died of AIDS. At a time when many in the U.S. government believed it too expensive and complicated to treat those infected in the developing world, PEPFAR (the President’s Emergency Plan for AIDS Relief) would become the largest program for global HIV/AIDS prevention, treatment and care.

“About 15 million people are alive today because of PEPFAR,” said Farmer. “It doesn’t solve all problems...but it sure solved a lot of problems for those 15 million people.”

The morning of Farmer’s lecture, a young Rwandan who works at NIH told Farmer that his district in Rwanda has not experienced a single case of mother-child HIV transmission for at least 3 years. “That’s the fruit of science,” exclaimed Farmer. “That’s the kind of effect we can have when we link knowledge that comes out of basic science to clinical trials to an equity platform.”

Another new source of pride for Farmer and Partners In Health is the launch of the University of Global Health Equity in Rwanda.

“In so many places in the world, there’s everything left to do,” Farmer said. “Everyone can find a way to put equity in their agenda.” **R**

CC Patient Provides Resource for Study of Cancer’s Evolution

BY CORA HERSH

In a departure from the typical “big data” approach of genome-wide association studies—sampling tens or even hundreds of thousands of people to look for common inherited variation associated with risk of disease—scientists from around the world have collaborated to learn from an individual case, carefully documented over nearly 30 years.

The team, led by Dr. Michael Dean of NCI’s Division of Cancer Epidemiology and Genetics, charted changes in cancer cells through the course of disease for a female patient with chronic lymphocytic leukemia (CLL) treated at the Clinical Center. CLL is the most common leukemia in adults; it tends to progress slowly, in this case affording researchers the opportunity to delve into the genetic characteristics of each stage.

The patient was diagnosed at age 47 in the early 1970s. From 1984 until 2000, she was seen regularly by Dr. Neil Caporaso, senior investigator in the Occupational and Environmental Epidemiology Branch, as part of a family study of lymphoproliferative disorders. He worked closely with another CLL expert from the FDA, Dr. Gerald Marti, to manage her care. Together they published studies describing her cell morphology, differences and similarities between familial and sporadic CLL and characteristics of familial CLL.

Emblematic of the importance of the CLL families, her cells would later contribute to larger studies of chromosomal mosaicism, genome-wide association studies and exome sequencing in familial CLL. “We are deeply grateful to all participants in our family studies program whose generosity allows us to do this type of intensive interdisciplinary research, often without personal benefit to themselves,” said Dr. Margaret Tucker, director, Human Genetics Program. “We could not do this without them.”

As is common with CLL, the patient



The team studying leukemia included (from l) Drs. Mike Dean, Margaret Tucker and Neil Caporaso.

experienced extended periods of good health following effective treatments. In a remarkable display of foresight, Caporaso and Tucker took steps to collect and freeze tumor cells over the last 18 years of the 29-year disease course. CLL is particularly opportune for these studies because the tumor circulates in the blood, so carefully collected samples can later be cell sorted to obtain samples of both normal and tumor cells for analysis. At the time sample collection began, there were few research tools available to study the different cell types.

Using such varied techniques as single nucleotide polymorphism (SNP) microarray analyses, transcriptome sequencing and whole genome sequencing, investigators describe, in a paper published Dec. 16, 2016, in *Nature Communications*, the branching mutational path of the patient’s cancer cells. Six overall mutation profiles, or clusters, emerged throughout the disease course and varied in relative percentage from year to year. The clusters were characterized by particular DNA abnormalities such as SNP and gene deletions or duplications or the emergence of extra chromosomes.

Close examination of these patterns, such as which mutations occur together, could reveal details about the molecular mechanics of cancer evolution. “One of the more surprising observations,” noted Dean, “is that certain chromosome alterations tracked closely to treatment patterns. We saw specific chromosome changes appear immediately following therapy, suggesting the ability of cancer cells to adapt to and resist treatments.” **R**



At left, Dr. Lisa Cooper (c) comments during a recent meeting of the advisory committee to the director. At right, Dr. Brendan Lee (l) takes part in his first ACD meeting.

PHOTOS: ERNIE BRANSON

ACD

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BRAIN and Precision Medicine Initiatives, tackling the study of diversity in the scientific workforce, working with the Lacks family on use of HeLa cells in research, finding ways to integrate data science more fully into medical research and, most recently, implementing recommendations to improve the Clinical Center.

In addition, Collins publicly thanked colleagues who work closest with him. “I also want to say how remarkable it has been to have around me at NIH the most amazing staff, at all levels,” he said.

On his professional future, Collins said he will maintain his NHGRI lab, regardless of whether he holds the director’s seat in the new administration. He also said that with its non-partisan mission, NIH is regarded well in the nation’s legislative body and the agency’s forecast is favorable.

“We do have champions [in the Congress],” Collins said. “They are wonderfully substantive, dedicated leaders who really believe that what we’re doing is one of the most important activities of government...Despite the uncertainties that everybody feels when there’s a transition... the support we have from the U.S. Congress ought to be a source of optimism for what this enterprise can do going forward.”

The ACD also met the newly appointed first-ever CEO of the Clinical Center, Dr. James Gilman, a major general retired from the U.S. Army who spoke briefly at the meeting.

“I actively sought out this job,” he said, “because I believe that patients getting care in the Clinical Center—who derived the benefit of that care by virtue of their willingness to be research subjects—are about as close as I could ever get again in my

professional career to taking care of service members and their families, which I did and I loved doing for 35 years.”

Explaining that he is gradually getting the hang of “NIH culture and NIH-speak,” he quipped, “They told me that EOD meant the day I started work; it didn’t mean ‘explosive ordnance disposal.’ And I was kind of happy to hear that.”

Gilman, slated to begin sometime this month, will oversee day-to-day operations

and management of the hospital (see sidebar).

A number of other topics were covered at the 113th session of the ACD: Working groups on HeLa, scientific workforce diversity and physician-scientist training programs reported progress since the committee’s June meeting. An update on the Environmental influences on Child Health Outcomes (ECHO) Program was given by recently appointed ECHO director Dr. Matthew Gillman. NCATS director Dr. Chris Austin was tapped for the institute/center director’s report. NIAID director Dr. Anthony Fauci offered an overview of NIH efforts against the Zika outbreak. The status of CC improvements and the potential for efficient and stable NIH funding were also addressed.

Both days of the meeting are archived online—Day 1 <https://videocast.nih.gov/summary.asp?Live=21446&bhcp=1> and Day 2 <https://videocast.nih.gov/summary.asp?Live=21450&bhcp=1>.



Newly appointed Clinical Center CEO Dr. James Gilman (r) addresses the ACD gathering. When he begins at NIH this month, he’ll work closely with Dr. John Gallin (l), NIH associate director for clinical care and chief scientific officer.

Gilman Named Clinical Center CEO

Dr. James K. Gilman, a retired major general in the U.S. Army, has been named inaugural chief executive officer of the Clinical Center. He is a cardiologist and highly decorated leader with experience in commanding operations of numerous hospital systems. As CEO, he will oversee day-to-day operations and management of the CC, focusing on setting a high bar for patient safety and quality of care, including the development of new hospital operations policies.

“His medical expertise and military leadership will serve the Clinical Center well as it continues to strive for world-class patient care and research excellence,” said NIH director Dr. Francis Collins, who made the appointment.

Gilman served 35 years in the Army, most recently as commanding general of the U.S. Army Medical Research and Materiel Command, Ft. Detrick, Md. He led several Army hospitals during his long career—Brooke Army Medical Center, Ft. Sam Houston, Tex.; Walter Reed Health Care System, Washington, D.C.; and Bassett Army Community Hospital, Ft. Wainwright, Alaska. He also served as director of health policy and services responsible for all aspects of professional activities and health care policy in the Office of the Surgeon General, U.S. Army Medical Command. Gilman has received numerous military awards and decorations, among them the Distinguished Service Medal, Legion of Merit and Meritorious Service Medal.

He holds a bachelor of science in biological engineering from Rose-Hulman Institute of Technology, Terre Haute, Ind., and received his M.D. from Indiana University School of Medicine. He completed a residency in internal medicine and a fellowship in cardiovascular diseases at Brooke Army Medical Center, where he later became chief of cardiology and was responsible for training cardiology fellows. He is board-certified in internal medicine with a subspecialty in cardiovascular disease. Following his retirement from the Army in 2013, Gilman served as executive director of Johns Hopkins Military & Veterans Institute in Baltimore until June 2016.

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NINR director Dr. Patricia Grady (l) lauds Dr. Sandra Millon-Underwood for a career focusing on minority populations, including African-American women with breast cancer.

impediments to quality treatment, including fear and mistrust of medical institutions, myths and misperceptions about breast cancer treatment and screening, inadequate follow-up, bias and cost.

To help address these disparities, Millon-Underwood developed an intervention, Nurses Affecting Change Partner in Pursuit of the Promise B'CAUSSSE (Breast Cancer Awareness, Understanding, Screening, Survivor Support and Empowerment).

Through this intervention, clinicians are trained to understand the needs of women in low-income areas who are at increased risk for breast cancer and to allay their fears and concerns. The intervention facilitates access to screening and quality care and engages patients in their own care.

Citing former Surgeon General David Satcher, Millon-Underwood noted that “the research enterprise is a relay, not a sprint.” She encouraged attendees to pass the baton of nursing science by training the next generation and disseminating findings that can have real effects on the lives of women and their families.

Citing another significant influence on her career—her own father—Millon-Underwood encouraged those in attendance to continually look for and respond to the community’s needs. Using her father’s words, she reminded those in attendance that if they think there are issues that don’t affect individuals at the community level, they should “keep living.”

Video of Millon-Underwood’s lecture will soon be available on NINR’s YouTube channel at <https://www.youtube.com/user/NINRnews>. **R**

NINR Lecture Explores Health Disparities in Cancer

Dr. Sandra Millon-Underwood, professor at the University of Wisconsin-Milwaukee, closed out NINR’s 30th-anniversary commemorative year with a NINR Director’s lecture, “Evidence-based Interventions to Address Health Disparities in Cancer.”

In introductory remarks, NINR director Dr. Patricia Grady lauded Millon-Underwood’s career focusing on minority populations, including African-American women with breast cancer, citing her “dedication to improving access for women, minorities, the disadvantaged and the underserved to state-of-the-art cancer prevention and control programs.”

Millon-Underwood described the disparate burden of breast cancer on African-American women, noting that this population is more likely than white women to die from the disease, to be diagnosed at a later stage and to be diagnosed with triple-negative breast cancer.

Additionally, many African-American women face



NIDA, NIAAA Support Surgeon General’s Report

NIDA and NIAAA directors Dr. Nora Volkow and Dr. George Koob, along with several other public health officials, participated in the recent launch of surgeon general Dr. Vivek Murthy’s new report on alcohol and drug misuse. *Facing Addiction in America: The Surgeon General’s Report on Alcohol, Drugs and Health* was unveiled at an event held at the Paramount Theater in Los Angeles. The report provides an in-depth look at the science of addiction, calls for a cultural shift in the way Americans talk about the issue and recommends actions to prevent and treat substance use disorders. On hand were (from l) Dr. Jinhee J. Lee, Substance Abuse and Mental Health Services Administration (SAMHSA); Dr. A. Thomas McClellan, Treatment Research Institute; Koob; Dr. Keith Humphreys, Stanford University; Volkow; Murthy; Kana Enomoto, SAMHSA; Dr. Constance Weisner, Kaiser Permanente; Dr. H. Westley Clark, Santa Clara University; and Dr. Jorielle Brown Houston, SAMHSA.

NEXT ‘MIND THE GAP’ WEBINAR SET

Dill To Discuss Conduct Of Qualitative Research Projects

The next Medicine: Mind the Gap webinar explores how to approach and conduct qualitative research projects and will familiarize participants with qualitative data collection and analysis techniques and tools. Sponsored by the NIH Office of Disease Prevention, the webinar will be led by Dr. LeConté Dill, an assistant professor in the department of community health sciences at the State University of New York Downstate School of Public Health.



Join the discussion on Thursday, Jan. 19 from 11 a.m. to noon. Registration is required and you will receive a confirmation email that contains detailed information about the webinar.

Through both lecture and real-time mini-exercises, participants will learn about understanding the role of theory in qualitative research, formulating research questions, sampling and recruitment, designing and implementing data collection tools and techniques, finding themes in the data and disseminating findings.

Dill will demonstrate multiple uses of qualitative data through her experiences as a public health practitioner and researcher working with community groups, local health departments and academic partners.

As a community-engaged researcher, Dill examines the relationship between adolescent development and processes of the built environment, such as gentrification, foreclosures and violence. Her recent work explores the multiple experiences of violence, coping and resistance among urban girls of color.

Dill will accept questions before and during her presentation via WebEx, email at prevention@mail.nih.gov and on Twitter with #NIHMtG.

Register at <https://nih.webex.com/nih/onstage/g.php?MTID=e041cadfcdeb06d1da-fa9327aa94eb98d>.



Scientific staff members who recently joined NIGMS include (from l) Dr. Anissa Brown, Dr. Manas Chattopadhyay, Dr. Haluk Resat and Dr. Desiree Salazar.

NIGMS Adds Four Members to Scientific Staff

Four scientific staff members recently joined NIGMS in several program areas.

Dr. Anissa Brown is a program director in the Division of Training, Workforce Development and Diversity (TWD), where she oversees the Building Infrastructure Leading to Diversity (BUILD) initiative. Formerly, she was an acting health science administrator and program analyst in the Office of AIDS Research of the NIH Division of Program Coordination, Planning and Strategic Initiatives. Brown earned a B.A. in biological sciences and psychology and a Ph.D. in biology from the University of Delaware, where she was also a graduate fellow.

Dr. Manas Chattopadhyay is a scientific review officer in the Office of Scientific Review. He coordinates the review for the Support of Competitive Research program as well as for applications in the areas of biochemistry, cellular and molecular biology. Before joining NIGMS, Chattopadhyay was a staff scientist in the Laboratory of Biochemistry and Genetics at NIDDK, where he was also a research fellow. He earned a B.Sc. in zoology, botany and chemistry from the University of Calcutta and a Ph.D. in biological science from the Bose Institute and Jadavpur University, both in India. Chattopadhyay conducted postdoctoral research at Jikei University School of Medicine in Japan and at NIDDK.

Dr. Haluk Resat is a program director in the Division of Biomedical Technology, Bioinformatics and Computational Biology. He oversees grants in bioinformatics, computational biology, systems biology and biological networks modeling. Resat comes to NIGMS from Washington State University, where he was an associate professor in the Voiland School of Chemical Engineering and Bioengineering. He has also worked as a senior research scientist at the Department of Energy's Pacific Northwest National Laboratory. Resat formerly was an associate professor on the faculty of science at Koc University in Turkey. He earned a B.S. in physics and electrical engineering from Bogazici University in Turkey and a Ph.D. in physics from Stony Brook University. Resat was a

postdoctoral fellow at Icahn School of Medicine at Mount Sinai and the University of California, San Diego.

Dr. Desiree Salazar is a program director in TWD. She administers Innovative Programs to Enhance Research Training and BUILD grants. Salazar also manages the Research Supplements to Promote Re-entry into Biomedical and Behavioral Research Careers program. She was most recently a scientific program manager at the American Society for Cell Biology. Formerly, Salazar was a program education coordinator for the Institutional Research and Academic Career Development Awards (IRACDA) program at the University of California, San Diego. She earned a B.S. in neuroscience from the University of California, Los Angeles, and a Ph.D. in biological sciences from the University of California, Irvine. Salazar conducted postdoctoral research and was an IRACDA fellow at the University of California, San Diego.



NIDA director Dr. Nora Volkow presents certificate to Dr. Lloyd Johnston.

NIDA Recognizes Johnston, Developer of 'Monitoring the Future Survey'

The National Institute on Drug Abuse honored its grantee Dr. Lloyd Johnston, who 42 years ago designed and began the nation's annual Monitoring the Future (MTF) survey. NIDA recognized him for his many years of contributions to public health on the eve of his departure as the survey's principal investigator.

Johnston is an Angus Campbell collegiate research professor and university distinguished research scientist at the University of Michigan's Institute for Social Research. He has been the lead investigator for MTF since its inception in 1975, and will continue to advise the new survey leadership.

The MTF survey, which is released each December, tracks annual drug use trends in 8th, 10th and 12th grade students, including attitudes and perceived risks of specific drugs. In 1975, Johnston oversaw the first nationwide survey of about 16,000 seniors in more than 130 public and private high schools nationwide, recruiting all of the high school principals himself. The survey has now grown to more than 45,000 participants from close to 400 schools around the country.

Johnston believes that rapidly identifying upswings in substance use, including new substances arriving on the scene, and documenting the benefits of intervention, are among MTF's major achievements during his tenure.

On Dec. 13, just after the 42nd news conference outlining survey findings, NIDA director Dr. Nora Volkow surprised Johnston with a certificate of appreciation from NIDA as well as letters from NIH director Dr. Francis Collins and congressional representatives from Michigan. For Johnston's full bio, visit <http://monitoringthefuture.org/invest.html>. For a more in-depth article spanning his career, see <http://home.isr.umich.edu/research/researcher-profiles/lloyd-johnston/>. For videos, go to <https://www.drugabuse.gov/related-topics/trends-statistics/monitoring-future>.

NCI's Williams Is Mourned

Dr. Joy Ann Williams of Bethesda passed away at the age of 55 on Nov. 18, 2016, after a 4-year battle with ovarian cancer. She was born in Arlington, Va., and obtained bachelor's degrees in biology and piano performance from Oberlin College and Conservatory. She earned a master's degree in molecular biology and a Ph.D. in immunology from the University of Maryland.



Dr. Joy Ann Williams

As a graduate student, she worked at the National Cancer Institute as a pre-doctoral Intramural Research Training Award fellow in the Laboratory of Genetics under Dr. Michael Potter. She then worked as a biologist under her graduate mentor, Dr. Emily Shacter, first in the Laboratory of Genetics, and later in the FDA Center for Biologics Evaluation and Research. The year after earning her Ph.D., Williams joined the laboratory of Dr. Richard Hodes in NCI's Experimental Immunology Branch as a postdoctoral fellow. She then worked as a regulatory/research scientist at the FDA. In 2006, Williams' love of basic research brought her back to Hodes' lab at NIH as a staff scientist.

Williams had an intense and infectious love of science, said coworkers. She brought intellect and commitment to her work and was a successful and productive scientist, they recall. In her most recent work, she advanced the understanding of the biology of thymic development and the cross-talk between thymic epithelium and the developing T-cell repertoire. Her acknowledged expertise in this area, both intellectual and technical, made her a resource at NIH as well as to the international immunology community; she generously helped those who approached her.

This generosity and sincere interest in helping others were constants in Williams' life, colleagues said, adding, "Joy was a consummate teacher and mentor." In her years at NIH, she taught courses through the Federation of American Societies for Experimental Biology and at the University of Maryland's University College. Over her years in the lab, post-bacs, post-docs and colleagues had the good fortune of knowing Williams' extraordinary ability to teach and inspire via her unique perspectives and sense of humor.

Williams' love of music continued throughout her life, with performances on piano, flute and accordion. After a 2010 piano concert at the Clinical Research Center, she was quoted in *The Scientist*: "Playing the piano focuses me" and "absorbs my mind in different ways than science." Williams remained active in a variety of music activities, including teaching, accompanying other musicians and performing.

Williams was known for her brilliant smile. She loved to ride her bicycle to work on the Capital Crescent Trail and took delight in her trio of dogs. She was reliably cheerful, optimistic and hardworking. Williams is survived by her husband, Todd R. Smyth, her parents Harrison Brownell Williams and Ann Peterson Williams, her sister Julie Arrighetti, her brother-in-law Craig Arrighetti and her nephew Nicholas Arrighetti.

Gifts in Williams' memory may be directed to support ovarian cancer research at Johns Hopkins Kimmel Cancer Center. Checks should be made payable to Johns Hopkins University. Gifts may be mailed with a memo indicating that the gift is in memory of Joy Ann Williams to the Johns Hopkins Kimmel Cancer Center, P.O. Box 17029 Baltimore, MD 21297-1029 or make a gift online (<https://secure.jhu.edu/form/kimmel>).



Dr. Thressa "Terry" Stadtman in her lab in the 1970s

NHLBI Alumnus Terry Stadtman Dies

Dr. Thressa "Terry" Stadtman, 96, died Dec. 11 at her home. She was a retired senior investigator and former chief of the section on intermediary metabolism and bioenergetics in NHLBI's Laboratory of Biochemistry. She made seminal discoveries on the role of vitamin B12 and the physiological functions of selenium and selenocysteine, the latter an amino acid she discovered.

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"Terry is perhaps best known as a superb mentor."

-DR. MICHAEL GOTTESMAN

• • •

Stadtman was born in Sterling, N.Y., and studied bacteriology at Cornell University, where she received her B.S. in 1940 and her M.S. in 1942. She and her husband Earl Stadtman were one of the first husband-and-wife scientists at NIH, arriving in 1950. She had received her Ph.D. in 1949 at the University of California, Berkeley.

In a career spanning nearly 60 years, Stadtman became known as the "mother of selenium biochemistry." She retired from NIH in 2009. She was elected to membership in the National Academy of Sciences in 1981 and the American Academy of Arts and Sciences in 1982. Among her many awards were the William C. Rose Award of the American Society of Biological Chemists in 1986; the Klaus Schwarz Medal from the International Association of Bioinorganic Scientists in 1988; and the inaugural L'Oreal Lifetime Achievement Award for Women in Science from L'Oreal-UNESCO in 2000. The

organism *Methanospaera stadtmaniae* is named in her honor.

"Terry is perhaps best known as a superb mentor," said Dr. Michael Gottesman, NIH deputy director for intramural research. "She and her husband Earl developed a unique way of conducting research and training scientists, which colleagues called 'the Stadtman way,' referring not only to the extraordinarily high standard of rigor they set in biochemical research, but also to their generous sharing of credit in publications with more junior scientists."

After Earl's death in 2008, Terry deeded 5.8 acres of her property to form an expansion of Rock Creek Regional Park, now known as the Stadtman Preserve.

Stadtman is survived by hundreds of close friends. She did not wish to have a funeral service. A scientific symposium at NIH will be planned for the spring in her honor.

Former NIH Photographer Hecht Mourned

Gerald "Jerry" Victor Hecht, a public affairs specialist for the former Audiovisual Branch in the NIH Office of the Director and a photographer who captured many signal moments in NIH history, died Nov. 24 of complications from Parkinson's disease.



Retired NIH cameraman Gerald "Jerry" Hecht

Hecht joined NIH in 1959 in the photo section of what is now the Division of Medical Arts. His duties extended beyond NIH to the U.S. surgeon general's office and the office of the HHS secretary.

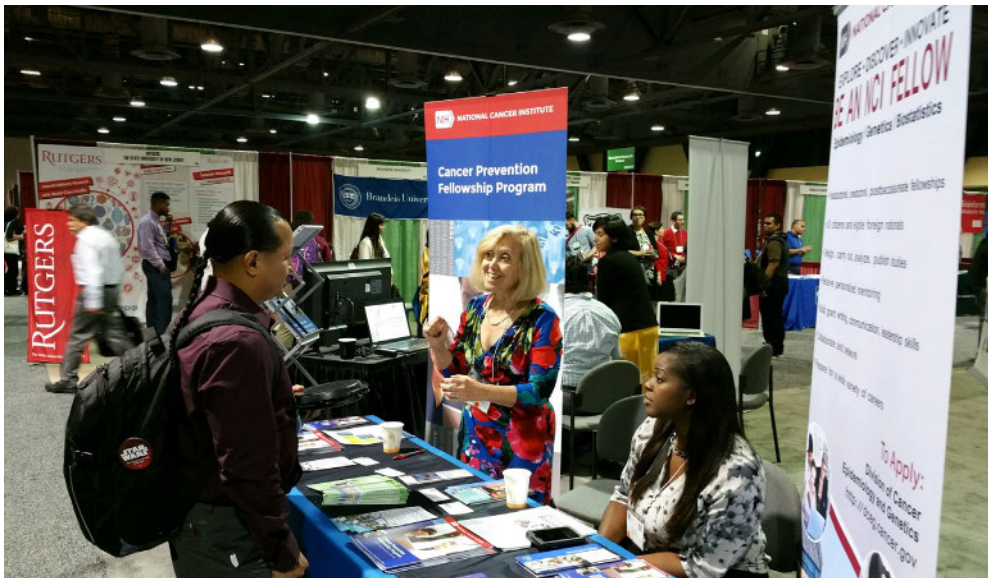
He spent a few years at NIMH, where he helped set up photography, film and television facilities,

then returned to OD. Not only did he take photographs, primarily black-and-white images used in such publications as the *NIH Record*, and *Time* and *Life* magazines, but also he produced and directed films of NIH research for television.

Hecht also made public service announcements for TV, alerting people to health and safety hazards such as tick-borne Rocky Mountain spotted fever, high blood pressure and dental caries. He helped the news media produce stories about NIH for such programs as the *Today Show* and *20/20*. He retired from NIH in July 1987.

A collection of Hecht's prints can be found at <https://history.nih.gov/>.

Hecht was preceded in death by his first wife, Annabelle Hecht. Survivors include his wife Gisele Dahan Hecht; three sons, Barry Alan Hecht, George David Hecht and Roger William Hecht; sister Davina Hecht; and four grandchildren. **R**



ABOVE: ONE NIH recruitment approach sets up in Long Beach, Calif., to participate in the annual conference of SACNAS (Society for Advancing Chicanos/Hispanics & Native Americans in Science).

‘ONE NIH’ Approach Used to Recruit at Conference

Recently, the ONE NIH recruitment approach traveled to Long Beach, Calif., to participate in the annual conference of SACNAS (Society for Advancing Chicanos/Hispanics & Native Americans in Science), one of the largest organizations dedicated to fostering the success of Chicano/Hispanic and Native American scientists, from college students to professionals.

The annual conference attracts more than 4,000 students, faculty and STEM partners who gather to exchange cutting-edge science, mentoring and scientific training opportunities. NIH institutes and centers participate in breakout sessions and exhibits to promote their training programs, fellowships and other opportunities. Reaching underrepresented minority students in science is a major focus for NIH in order to foster diversity in scientific and clinical areas.

The Office of Human Resources’ corporate recruitment unit (CRU) developed an initiative that would allow for multiple ICs to share space, reducing some exhibiting costs and promoting the diverse scientific missions and opportunities of each entity. In 2016, 15 different offices and divisions from 9 ICs participated in this initiative, referred to as the ONE NIH Approach.

The NIH’ers were able to engage with approximately 500 SACNAS attendees to share information about NIH. The ONE NIH booth also hosted Dr. Hannah Valantine, chief, Office of Scientific Workforce Diversity, who engaged with students whose institutions are members of BUILD, a scientific workforce diversity initiative. The CRU has managed the logistics of 7 conferences using the ONE NIH approach over the last 4 years.



Dr. Hannah Valantine, chief, Office of Scientific Workforce Diversity, engages students from institutions that are members of BUILD.



‘Quilts for Kids’ Donated to Inn

Nearly 50 quilts were presented to the Children’s Inn at NIH on Dec. 15 as part of “100 Quilts for Kids,” an annual charity drive run by the Washington, D.C. Modern Quilt Guild. The yearly effort, conducted from Sept. 1 to Dec. 1, encourages guild members to make a quilt and donate it to a child in need. Shown on her way to deliver the year’s haul is 2016 quilt drive chair Alyson Olander of the NIH Online Information Branch in the OD Office of Communications and Public Liaison. Founded in 2010, the guild has grown to approximately 85 members who gather monthly for sew-ins and tutorials at various locations in D.C., Maryland and Virginia.

VOLUNTEERS

NIDCR Study Needs Volunteers

Researchers at NIDCR are conducting a study identifying the conditions of craniofacial abnormalities in an effort to develop treatments specific to the type of abnormality. The purpose of the study is to learn about abnormal development of the face, head and neck and to determine the genetic variants. For more information, call 1-866-444-2214 (TTY 1-866-411-1010). Refer to study 16-D-0040.

Healthy Adults Needed

NCI researchers seek healthy adult volunteers to help in the fight against cancer. White blood cells will be collected through a blood donation process called apheresis. Participants will have a screening visit and apheresis visit. Compensation is provided. For more information, call 1-866-444-2214 (TTY 1-866-411-1010). Refer to study 16-C-0138.