



Immunotherapy Benefits NIH Scientist/Author

BY ERIC BOCK

One morning in January 2015, Dr. Barbara Lipska sat down at her desk and went to turn on her computer. Her hand disappeared. She couldn't see anything in her right visual field. The terrifying experience was like a freaky magic trick.

"The first thought that entered my mind was...brain tumor," said Lipska, director of NIMH's Human Brain Collection Core and author of *The Neuroscientist Who Lost Her Mind: My Tale of Madness and Recovery*, at a recent NIMH Director's Innovation Speaker Series lecture at the Neuroscience Center.

The vision problems persisted through

the morning. The next day she was diagnosed with three brain tumors. Shortly after, she underwent radiation and neurosurgery to remove the biggest one, which was bleeding and blocking her vision. She had been previously diagnosed with melanoma and had the skin tumor resected. Melanoma, however, commonly spreads to other parts of the body, including the brain.

Lipska searched for alternative therapies because she was certain the tumors would come back. After consulting with her family and many doctors about her options, she enrolled in an immunotherapy clinical study led by Dr. Michael Atkins, deputy director of the Lombardi Comprehensive Cancer Center at Georgetown University Medical Center.

For most of his career, Atkins said, melanoma was known as "the cancer that gives cancer a bad name." Its incidence was

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Dr. Barbara Lipska discusses ordeal with cancer at NIMH lecture series.



Inn picnic entertains kids, staff. See page 2.

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FORTIFYING NIH'S 'FORESTS'

Tree Population Grows on Campus

BY CARLA GARNETT

If a tree falls in the forest and nobody is around to hear it...Brandon Hartz will surely replace it in due time. At least that's how it works on NIH's Bethesda campus. The agency's landscape architect has been busier than usual over the past year or so, overseeing the planting of more than 200 new trees since spring 2017.

"We've lost—due to old age, storm damage and safety concerns—a lot of trees," Hartz reported recently. In 2016, 198 trees were lost; in 2017, the campus lost 125 trees.

On its 300-acre Bethesda campus, NIH has about 8,500 trees (of at least 2 inches dbh, or diameter at breast height—a standard arboreal measuring unit). The Forest Conservation Plan that the agency maintains with the state of Maryland requires

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Intern from Puerto Rico Receives Governor's Medal

BY DANA TALESNIK

Yashira Ortega-Sustache was planning to apply for an NIH internship when Hurricane Maria struck Puerto Rico last September. The category 5 hurricane destroyed her



Yashira Ortega-Sustache

father's small business, damaged the family's home and left them without power for months. Nearly a year later, her home is still without internet access, which she needed to complete and submit her NIH application.

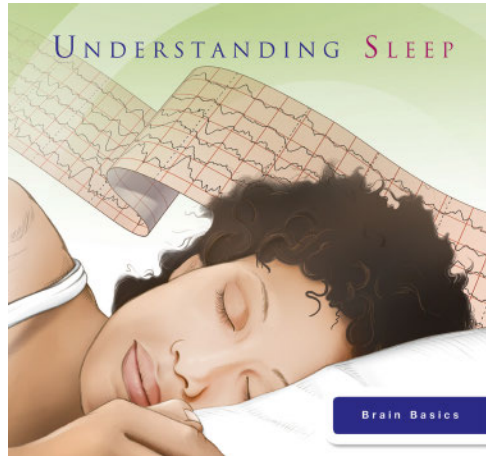
"It really was a miracle for me to come here," she said. "Now, I'm getting to do something I really love."

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NIH Publications Win ‘Blue Pencil’ Awards

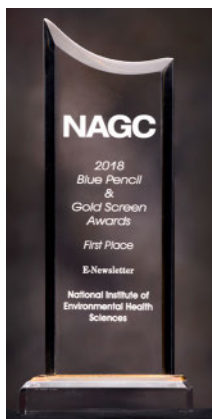
Two NIH publications recently won first-place honors in the annual Blue Pencil and Gold Screen Awards presented by the National Association of Government Communicators.

The NINDS publication *Understanding Sleep* won Most Improved Publication. “I was very pleased to see NINDS was recognized for our total redesign



and rewrite of text [originally] presented on 8½ x 11-inch glossy paper to an extremely colorful, illustrated, reader-friendly fold-out booklet,” said Paul Girolami of the NINDS communications office.

Winning first place in the e-newsletter category was the *NIEHS Environmental Factor*.



“This is a terrific honor for the institute and for our newsletter team,” said Christine Bruske Flowers, director of NIEHS’s Office of Communications and Public Liaison. “NIEHS supports a tremendously broad research portfolio, and our writers, editors, photographer and webpage designers do a fabulous job of presenting that research to the world each month in our newsletter.”

The NINDS brochure can be viewed at <https://catalog.ninds.nih.gov/pubstatic//17-NS-3440-C/17-NS-3440-C.pdf>. The NIEHS e-newsletter is at <https://factor.niehs.nih.gov>.

Anti-Retaliation Open House, Aug. 30

NIH has declared August as Anti-Retaliation Month to inform employees, managers and supervisors that retaliation is not tolerated and to promote anti-retaliation resources. EDI will hold an open house for all employees on Thursday, Aug. 30 from 1 to 3 p.m. in Bldg. 2, 3rd floor. Discuss the equal employment opportunity process and anti-retaliation and meet EDI staff. For more information, visit www.edi.nih.gov.



At left, Cyntana Thomas, 2, daughter of inn employee Dennis Thomas, marvels at bubbles as they float through the air. At right, 6-year-old Emma Sotelo of Texas shows off her butterfly face paint.

PHOTOS: P. JENNIFER FORESTER, SONJA LUECKE

Children’s Inn Holds Outdoor Carnival

The Children’s Inn at NIH recently held an old-fashioned outdoor carnival to bring joy to children and families staying at the inn. Board members, trustees and inn staff members and their families also were invited to join in the fun.

Carnival games set up in the inn’s parking lot included a duck pond, disc drop, knocking over cans, bean bag toss, bowling, a bubble machine and more. Attendees also fearlessly volunteered for the pie attack—inviting children and teens to gently smash cream pies into their faces.

Everyone had a chance to win prizes, enjoy barbecue and Ben & Jerry’s ice cream. A caricature artist and face-painting rounded out the fun.

The inn’s Teen Ambassadors—high school students selected to participate in a volunteer program that emulates the activities of a board of directors—ran the carnival game stations and helped children with physical or other health challenges participate in the activities.



At left, Dr. Anthony Fauci, director of NIAID, poses with Zilly, the Children’s Inn therapy dog. At right, Muna Albusaidi, 8, beams as she shows off the caricature of her made at the inn’s summer carnival.

Volkow Participates in Politico Summit

On July 16, NIDA director Dr. Nora Volkow (fourth from l) participated in the second *Politico Pro Summit*, which brought together subscribers, experts and key decision-makers from the executive branch, federal agencies and Congress for a full day of in-depth conversations about various policies. Volkow was on a panel called “Seeking Light in the Opioid Tunnel,” moderated by *Politico* health care editor Joanne Kenen (r). Other panelists included Dr. Rahul Gupta (c), commissioner and state health officer in West Virginia; Dr. Jeanmarie Perrone (l), director of medical toxicology at the University of Pennsylvania Perelman School of Medicine; and Dr. Anne Schuchat (second from l), principal deputy director of the Centers for Disease Control and Prevention.



PHOTO: POLITICO

Krebs Shares Vision For Improving Pain Management

BY ELLEN O'DONNELL AND ROBERT PINES

When faced with chronic pain, many patients and health care providers may not know about treatment possibilities beyond the standard drugs, or the evidence on them. Against the backdrop of the current opioid epidemic, NCCIH recently sponsored a lecture by Dr. Erin Krebs on ways to improve pain management in primary care. The event was part of the center's Integrative Medicine Research Lecture Series.

"Two of our top scientific priorities at NCCIH are to improve understanding of pain and identify effective complementary and integrative health approaches to improve, treat and manage pain—the number one reason Americans turn to these approaches," said Dr. David Shurtleff, NCCIH acting director. "Pain is front and center in the opioid crisis. There is much to learn about how to best optimize pain management and reduce reliance on opioid medications."

Krebs, who is associate professor of medicine at the University of Minnesota, an internist and health services researcher at the Minneapolis VA Health Care System and an NCCIH grantee, discussed "reframing" pain management in primary care. Clinicians in this specialty have a key role in caring for patients experiencing chronic pain, but face barriers in doing so—from being overburdened to working in health systems not designed or equipped to manage chronic pain. Other challenges include health problems that often co-occur with chronic pain (such as depression, anxiety disorders,

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"Bottom line: We just don't know as much as we need to know about opioids."

-DR. ERIN KREBS

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insomnia and substance abuse) and the fact that, as Krebs put it, "Our whole way of thinking about pain care has become very opioid-centered.

"Bottom line: We just don't know as much as we need to know about opioids," she continued. "What we do know suggests that they don't deserve this central role...which has taken a toll on patients, primary care and pain management." One glint of light in the opioid crisis, she said, is that "we have an opportunity to think about pain management and how to do it differently."



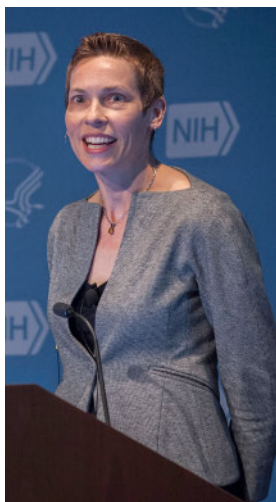
Dr. Erin Krebs urges new thinking on pain management.

PHOTOS: MARLEEN VAN DEN NESTE

Krebs's recommendations on reframing pain management grew out of several concepts in HHS's National Pain Strategy. "Pain care should be patient-centered, accounting for individual preferences, risks and social contexts; comprehensive, meeting patients' biopsychosocial needs; and multimodal and integrated, using evidence-based treatments," she said.

A strong finding from her research is that "patients really want physicians and clinicians to hear them, listen to them and understand their pain experience." Patients "do not think about pain in isolation" and do not simply want pain relief, but also improvements in specific aspects of their daily lives. Providers need to discuss the topic of pain with their patients, she said, but often don't know how to bring this up or what to say. She recommended that providers become informed about nondrug treatment options; use a multimodal approach to address the full range of biological, psychological and social factors operating in pain; and have a coordinated treatment plan. "Just because someone does a lot of [modalities] doesn't necessarily mean they're getting multimodal care—it may be pretty disconnected," she cautioned.

Krebs shared evidence-based recommendations on nondrug therapies that emerged from a 2016 VA state-of-the-art conference she co-chaired on nonpharmacologic approaches for musculoskeletal pain. The convened experts were charged with assessing the evidence and identifying therapies for multimodal treatment of musculoskeletal pain that could be implemented broadly and quickly in the Veterans Health Administration system. Nine therapies showed



"sufficient" evidence: acupuncture, manipulation, massage, exercise, tai chi, yoga, acceptance and commitment therapy, cognitive behavioral therapy and mindfulness-based stress reduction. All, however, had shown small- to medium-sized benefits and worked for fewer than half of the study participants who tried them.

"No one treatment is best for all people," Krebs said. "This isn't surprising, given what we know about the complexity of chronic pain." Patient and provider expectations regarding chronic pain and any therapy being considered thus require attention.

Krebs compared "passive" nondrug therapies (i.e., those delivered by a practitioner) with "active" ones (i.e., those patients engage with themselves) and concluded that "a combination of both types may be best." The lecture is available at <https://videocast.nih.gov/launch.asp?23840>. NCCIH's portal of information on chronic pain is at <https://nccih.nih.gov/health/pain>. **R**



ON THE COVER: *Campus beauty.* In the courtyard of the Clinical Research Center, an anemone gets its closeup.

IMAGE: BRANDON HARTZ, ORF/OD

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Lipska

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increasing and there were few effective treatments for it until 2011. That year, researchers found that 45 percent of melanomas had a mutation in a gene called BRAF.

The gene provides instructions to a protein responsible for cell growth and division. This discovery led to the development of therapies targeting the mutation. Scientists also learned more about how cancer cells interfere with the immune system's ability to attack the cells.

The study Lipska enrolled in evaluated the effectiveness of a combination of two immunotherapy drugs. Atkins said the drugs "acted on different parts of the immune response." Previous studies had suggested a combination produced dramatically better results.

Lipska started immunotherapy in April 2015. "Everything was going well. I was physically fit, emotionally strong and otherwise healthy. It seemed that I would have no problems. I had some rashes and other little things—but they were nothing compared to the very real possibility that I would die," she said.

About a month later, her behavior changed. She irritated easily, yelled more and got lost in her neighborhood. At first, her family attributed her behavior to the stress of undergoing cancer treatment. She became convinced everyone was trying to hurt her. One day, she tried to fire her exterminator for spraying pesticides.

Her daughter emailed Atkins after Lipska falsely claimed she was poisoned by a pizza

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"We're striving to make cancer a curable disease. With these new treatment options—and Dr. Lipska is living evidence—I think that's possible."

—DR. MICHAEL ATKINS

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slice that was stuffed with plastic. Atkins ordered more testing immediately. A brain scan found more than 20 tumors in her brain—15 of them new.

"This was not a good situation. We had never seen this before," Atkins said. Doctors began to think about alternatives. She was prescribed a steroid to decrease inflammation and targeted therapy designed for BRAF mutation.

Despite the circumstances, Lipska didn't worry at all. "I didn't have insight or awareness of the situation," she explained. "I was the one spared of worry."

A few weeks later, Lipska underwent another scan. Atkins saw there were significantly fewer lesions and the ones that remained had shrunk. Lipska also rapidly regained her sanity.

"I remember the facts, but to this day, I don't remember any emotions associated with these events," she said.

Lipska stopped taking all therapy in June 2016. Since then, Atkins has been monitoring

her in case the melanoma recurs. Another 20 patients who received treatment have ended therapy and 18 are in remission. One patient died of a different cancer and another was treated successfully with surgical resection of a recurrence. In the Georgetown Lombardi series, 80 percent of those with metastatic melanoma who received the combination immunotherapy are cancer-free after 3 years.

"This treatment accomplished what patients want, which is the treatment ends and the benefit persists. We call that treatment-free survival," Atkins said. "And Dr. Lipska is actually the poster child for treatment-free survival."

Before her diagnosis, Lipska was an avid marathoner and triathlete. Once her treatment ended, she's been able to get back in shape. In June, she competed in a triathlon with her daughter.

"We're striving to make cancer a curable disease. With these new treatment options—and Dr. Lipska is living evidence—I think that's possible," concluded Atkins.



"Dr. Lipska is actually the poster child for treatment-free survival," said Dr. Michael Atkins, shown in photos above.

PHOTOS: CHIA-CHI CHARLIE CHANG



At a visit to NIEHS, Clinical Center CEO Dr. James Gilman is joined by NIEHS/NTP director Dr. Linda Birnbaum (r) and NIEHS clinical director Dr. Janet Hall. Gilman is holding an award given by NRC Health in acknowledgment of the CC's emotional support for patients' families.

PHOTO: STEVE MCCAWE

Clinical Center's Gilman Visits NIEHS

Dr. James Gilman, CEO of the Clinical Center, shared an overview of the hospital he called "the House of Hope" during a recent talk at NIEHS. His visit included a tour of the NIEHS clinical research unit (CRU)—an operation far smaller than the center in Bethesda.

"When we discuss policies or other changes, Jan [NIEHS clinical director Dr. Janet Hall] always raises the question of how it will affect the NIEHS facility," Gilman said, adding that learning more about the CRU was one inspiration for his visit. NIEHS also has a clinical research group located in Bethesda; its scientists conduct studies in both locations.

"What we do changes as the needs of American people change over time," he explained, pointing to AIDS and Ebola as two examples. Throughout his talk, Gilman praised the patients who come to NIH for experimental treatments.

"There are 18-25 million people in the U.S. with rare diseases," he noted. Those who participate do so in the hope that it will help, but with no guarantees. "We promise to use what we learn to provide help for others," Gilman said. "They are doing something for all of us."

"Patients are our partners," he continued, stressing the importance of bedside manner in a facility that must balance patient care with basic scientific research.

In response to a question from the audience, Gilman compared the CC with the Department of Defense hospitals he oversaw during his Army career.

"There is the same attitude, that we are here to provide a service," he said. That attitude is reflected in the center's new mission statement: We provide hope through pioneering clinical research to improve human health.—**Kelly Lenox**

20-YEAR EFFORT

Hospice Suites Debut at Clinical Center

The Clinical Center opened its first hospice unit on July 10. Located on the 3SEN-Medical Oncology floor, the unit consists of two rooms that have been converted into a home-like environment where families can stay with adult patients. Each suite has a bedroom and a community area, including a kitchen and family sitting area.

About 50 patients die each year at the CC, some suddenly, with no need of hospice care, and others whose passage is lengthier. NIH research has shown that people at the end of life need care in the areas of physical comfort, mental and emotional needs, spiritual issues and practical tasks. Their families need support as well.



Cutting the ribbon to open the hospice suites are (from l) Dr. Ann Berger, chief of the Pain and Palliative Care Service, NIH director Dr. Francis Collins, Clinical Center CEO Dr. James Gilman and Dr. Gwen Wallen, chief nurse officer.

"I think this is a wonderful development," said NIH director Dr. Francis Collins, who attended the ribbon-cutting with his wife Diane Baker. He acknowledged that "noble efforts made to try to save lives... don't always result in [a] happy outcome... We owe it to them in those

circumstances where our best efforts are not succeeding to care for them in a place like this, to provide them with that kind of dignified loving surrounding while making it possible for them to be with their families in these final moments in a way that might otherwise be very difficult to arrange. Many of them are from far away."

Collins credited CC staffers from social work, biomedical engineering, administrative management, primary care, spiritual care and many other departments as well as staff from many of the institutes, especially NCI and NIAID. "And certainly nursing's leadership—especially oncology and critical care—have and will continue to play a really major role."

He also thanked Dr. Ann Berger, chief of the hospital's Pain and Palliative Care Service, for her long advocacy of in-house hospice at NIH. "Ann is a true pioneer in her field," said Collins. "She helped found her department nearly 20 years ago, before it was well known as a discipline. And almost since then she fought to make this unit happen."

Dr. Gwen Wallen, the Clinical Center's chief nurse officer, noted that hospice staff have received special training, including invaluable advice from established caregivers at Montgomery Hospice and Casey House. One key insight, Wallen said, "is that these units need to be high-touch, not high-tech...I just want to thank everybody and those who were willing to take the chance to make this happen."



At the ribbon-cutting, Collins chats with (from l) Dolores Elliot, a clinical nurse specialist, Ann Mitchell, president and CEO of Montgomery Hospice, and Lauren Freedman of Casey House.

PHOTOS: MARLEEN VAN DEN NESTE

Intern

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Ortega-Sustache is pursuing a double major in biology and nursing at the University of Puerto Rico. In June, she arrived at NIH, where she spent 2 months studying gene mutations in NIDDK's Laboratory of Biochemistry and Genetics as part of C-SOAR (College Summer Opportunities to Advance Research).

"Yashira is helping to develop a nematode model for the ultra-rare disease NGLY1 deficiency," said Carina Graham, a postbac fellow at NIDDK. "She's replicated patient alleles with CRISPR-Cas9 genome editing, run drug assays and confocal microscopy experiments to analyze phenotypes and helped quantify the robustness of potential suppressing mutations. She's a truly special student on an amazing journey; I'm consistently impressed with her eagerness, persistence and work ethic."

This is Ortega-Sustache's first time in the Washington metropolitan area and her first experience doing lab research, an opportunity that almost seemed out of reach after the hurricane.



Above: Ortega-Sustache works with Dr. Andy Golden, chief of the genetics of early development section in NIDDK's Laboratory of Biochemistry and Genetics, and Carina Graham of the same lab. Below, a view of the devastation caused by Hurricane Maria

NIH PHOTOS: DANA TALESNIK

Determined, Ortega-Sustache applied for the internship by using the internet connection at University Pediatric Hospital in San Juan, where she has volunteered as a clinical research assistant for 3 years. One of her recent projects at the hospital earned her the Puerto Rican Governor's Medal of Honor. Ortega-Sustache was already at NIH for her internship when the award ceremony took place, so her mother accepted the medal for her.

The award-winning project started out as simple data entry of medical records. For 2 years, Ortega-Sustache worked with Dr. Enid Rivera-Jimenez, a pediatric hematologist at the hospital, in compiling a database of children who had sickle cell anemia or Hermansky-Pudlak, a rare syndrome characterized by albinism. During this time, Ortega-Sustache contacted the parents of each patient to confirm the records were accurate and current and to identify patients' medical needs.

After the hurricane, clinicians used the database to track down families and either visit patients' homes

to provide care or bring them to the hospital for treatment. The list allowed the medics volunteering with hurricane relief efforts to provide critical care when phone and power lines and internet were down after the storm hit.

"I didn't do this project because I wanted to have an award," Ortega-Sustache said. "I did this because I want to help people; that's my goal. I've been [involved] in different [volunteer] organizations because I

want to help the community and people who are really in need."

Ortega-Sustache has participated in community service projects for 8 years, from

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"I didn't do this project because I wanted to have an award. I did this because I want to help people; that's my goal."

-YASHIRA ORTEGA-SUSTACHE

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high school and college fundraisers benefiting sick children to visiting with pediatric cancer patients in the hospital playroom. Last year, as president of the Student Pediatric Association at her university, she organized community activities such as visits to critically ill children and started a project to establish a home for abused children. She also worked as part of a council that represented youth at the Puerto Rico department of health.

Ortega-Sustache returns to Puerto Rico this month to embark on a 2-year nursing program toward her dual degree.

"I'm glad to have this lab experience [at NIH] to help me decide whether I want to pursue a doctorate," she said. "I'm still figuring it out. After I finish school, my goal is to come back and work at NIH." **R**

Talented Youngsters Tour NLM, NIH

BY KATHRYN MCKAY

What happens to former students involved in the Johns Hopkins University Center for Talented Youth?

Sometimes they work at the National Institutes of Health.

That's what happened to Adam Korengold and several interns from NLM.



Dr. Terry Yoo talks science with Kiley Alt and her mother.

Recently, they joined about a dozen other NIH employees wearing "Ask Me About My Awesome Job at NIH" buttons for the "Genetics, Bioinformatics, and Biomedicine" event for students from the Johns Hopkins University Center for

Talented Youth and their parents.

Throughout the day, more than 75 tweens and teenagers from the center participated in talks and tours of NLM and NIH. This second annual event was cosponsored by NLM and the National Human Genome Research Institute.



At left, Dr. Rob Rivers, takes time to speak with young people interested in science. He serves as program director in NIDDK's Office of Minority Health Coordination. Adam Korengold (r) of NLM got into a spirited discussion with students about the connections between research and science, communication, elections and even football.

PHOTOS: CHIA-CHI CHARLIE CHANG



As part of the program, staff from NLM, NHGRI and other institutes were invited to speak with the students and parents for small group discussions during lunch.

For Korengold, an applications lead at NLM's Office of Computer and Communications Systems, the chance to meet with students who reminded him of his childhood was irresistible. In speaking with students, he drew upon the connections between research and science, communication, elections and even football.

Ben Kusssmaul addressed both college life and his internship in NLM's Communications Engineering Branch. "I had a great time talking to students with the same passion for science that I had as a kid," said Kusssmaul, a student at Swarthmore College.

What happened to the students who attended the NIH event? They learned more than they expected.

Drs. Terry Yoo and Dina Demner-Fushman of NLM's Office of High Performance Computing and Communications served as keynote speakers. Yoo was particularly enthusiastic about speaking—his two sons participated in the Hopkins program when they were younger.

During tours of NIH, NLM and the office of artists from NLM's Lister Hill Audiovisual Program Development Branch, the students and their families had the opportunity to take a behind-the-scenes look at science.

Meeting with scientists, researchers and interns over lunch, the students and their parents had the chance to engage in conversation. Who knows? Maybe one day in the future, one or more of these young scholars will be back on campus, sporting a button that says, "Ask Me About My Awesome Job at NIH." **R**

Fire Marshal Oversees Safety Improvements

Working mostly unseen in the background for the past 31 years is NIH's own fire prevention and protection organization—the Division of the Fire Marshal (DFM) in the Security and Emergency Response Program of the Office of Research Services. Many employees walk through buildings without realizing how many features are in place to protect them from a fire and how these features are installed and maintained.

Fire Marshal J.P. McCabe, with the support of several key managers, has grown DFM from a 2-person staff in 1987 to a 15-person team of fire safety professionals. He thought a comprehensive fire marshal operation, independent of facilities operations, would serve NIH's mission best. DFM staff are available with one mouse click or phone call. They provide prevention, enforcement, engineering, education and investigation services at all NIH-owned campuses and facilities, as well as consultative services to leased facilities in Maryland.

DFM protects patients, employees, visitors and firefighters—a typical mission of any fire marshal operation. However, DFM is also charged with helping keep the Clinical Center accredited and



Fire Marshal J.P. McCabe (l) with his staff

protecting the biomedical research mission. Much equipment and many research animals at NIH are high-value and represent years of research data that would be difficult or impossible to replace. DFM tailors its operations and fire code provisions both to protect people and allow research and patient care to progress unimpeded.

DFM's six fire protection engineers provide start-to-finish construction and renovation project services. Most are professional engineers. They are involved in project planning, design reviews at multiple stages, final permit review, shop drawing review and all construction-related inspections. Staffing levels provide a quick turnaround time to ensure that facilities can keep up with constant improvements, technological changes, new clinical trials and sudden, unexpected medical needs.

Existing buildings are the purview of DFM's five fire prevention specialists/inspectors. They are involved with periodic building inspections, work permits, complaint investigation, public education and crowd control. Many buildings are old and contain mixed occupancies that are challenging from an enforcement standpoint.

McCabe and his staff have evaluated risk versus protection in all NIH buildings through the years. The most significant accomplishment has been the retrofit of most campus buildings with fire sprinkler systems. The antiquated campus telegraphic fire alarm reporting system has been fully replaced with a nearly completed, state-of-the-art mass notification system equipped to provide both fire reporting and two-way communication during any type of emergency.—**Mat Chibbaro**

Trees

CONTINUED FROM PAGE 1

one-to-one replacement. Every time we lose a tree, we have to plant one to take its place.

With funding help from the Office of Research Facilities' Division of Environmental Protection, Hartz authorized 128 trees to be planted last fall. That's in addition to the 70 plantings completed during spring 2017. A contractor team handles the considerable manual labor required to sink new trees into soil, but strategizing where and what to plant is Hartz's purview.

His goal was to enhance wooded areas that could reasonably become official "forests." By Maryland's definition, a forest has 100 trees (of 2 inches dbh) growing per acre. Only 1 percent of NIH land meets the standard.

Hartz targeted 20 native tree species for existing "forests with enhancement needs"—the official designation that most of NIH's wooded areas qualify for.

New trees have been placed along NIH's southern border, near parking lot 41 in the buffer area with the Whitehall condominiums, behind the Gateway Center on Rockville Pike, along Wilson Drive coming onto campus, west of Bldg. 31 where the 15 Quarters homes sit within the perimeter fence and behind the multi-level parking lots.

"The tricky thing about planting in an existing forest is that it's not like starting a new forest, where a tree is going to have as much light and water as you can give it," Hartz explained. "A young tree's got to be able to survive underneath an existing tree canopy. So we focused on plants that can grow well near trees with understory [shorter vegetation living beneath overhanging branches]—dogwoods, redbuds, witch hazels. These are trees that can grow tall, but also can live in shaded conditions—beech trees and American holly, which is an evergreen that will live in the shade."

This past spring, Hartz said, crews began to replace trees that were lost along roads and shaded walkways or ones that had important screening purposes toward the center of campus. He's also sprinkled a few tree lilacs in select locations. Tree lilacs are salt-tolerant—a welcome attribute for trees located near pathways affected by snow- and ice-clearing.

"We try to replant native trees that



Behind the Natcher Bldg., a young tree is staked, tagged, water-bagged and ready to flourish.

PHOTO: BRANDON HARTZ

are known to grow in this area," he said. Sometimes, however, that's not fruitful.

"Behind Natcher, we have a lot of compacted soil," Hartz noted, "and not a lot of trees like to live in compacted soil because the water tends to stagnate and there's not a lot of oxygen available to the roots. It's quite common in heavily used space where foot traffic and vehicles squeeze soil particles together."

In that area and several other regions that are proving difficult to reforest, Hartz has had to experiment a bit to find what might work. Recently he's put in a ginkgo and three little-leaf lindens on Bldg. 45's back lawn, hoping they'll take.

"Ashes do well in the compacted soil," he said, "but they are also susceptible to the deadly emerald ash borer beetle."

Hartz said the most important aspect of successful planting is getting young trees firmly established. Employees can easily identify newly planted trees by their appearance: Most are wired to wooden stakes that help keep the trunk stable so roots can grow. Green slow-release watering bags may be affixed to trunks as well, so newbies get the crucial moisture they need in their early stages. Finally, many are also encased in metal mesh columns.

"That's to protect from deer," Hartz

explained. "The young bucks like to scrub the velvet off of their antlers by rubbing against tree trunks. In the process, they also scrape away the tree's bark, exposing all of the living tissue." Deer can cause irreparable injury, especially to young trees.

Whatever befalls the trees on campus, Hartz will document their most important moments in the database he maintains. The searchable survey notes the location of all trees on campus and each live plant has both a metal number tag and a corresponding digital tree that can be tracked down on screen.

"I don't keep track of routine growth and the minor issues for each tree," he concluded, "but when something critical happens—like a lightning strike or rotting limbs—I update the database and I can immediately locate trees in trouble." **B**

VOLUNTEERS

Healthy Vols Needed for Vaccine Study

Vaccine Research Center researchers seek healthy volunteers, 18-70 years old, for an investigational influenza vaccine study. Scientists are testing new vaccines to determine if they are safe and effective in preventing the flu. Compensation is provided. For more information, call 1-866-833-5433 or email vaccines@nih.gov. Read more online at <https://go.usa.gov/xNH7U>. Refer to study VRC 316.

Opioid-Dependent Volunteers Sought

NIAAA seeks volunteers who are dependent on opioids such as heroin, hydrocodone, fentanyl, methadone or oxycodone and are receiving or not receiving treatment for their addiction. The purpose of this study is to learn how opiate use disorder affects dopamine signaling in the brain. This is not a treatment study for addiction. Call the Office of Patient Recruitment, 1-866-444-2214 (TTY for the deaf or hard of hearing 1-866-411-1010). Refer to study 17-AA-0114. Learn more online at <https://go.usa.gov/xNvcz>.

Alcohol Drinkers Needed for Study

NIAAA seeks volunteers who drink any amount of alcohol for study on brain-gut relationship and alcohol use. There are 6 outpatient visits and compensation is provided. For more information, call the Clinical Center Office of Patient Recruitment, 1-866-444-2214 (TTY for the deaf or hard of hearing 1-866-411-1010). Read more online at <https://go.usa.gov/xn7rd>. Refer to study 17-AA-0093.



“What we’re learning about health disparities today has the potential to transform health for all populations,” said NIMHD director Dr. Eliseo Pérez-Stable.

NIMHD Launches Plan to Advance the Science of Health Disparities

NIMHD launched the Scientific Advancement Plan (SAP), a transformative agenda that champions the fields of minority health and health disparities to contribute to and benefit from the scientific advances that are improving public health.

Research in precision medicine, genomics and health information technology, for example, hold promise for more effective chronic disease management, treatment and personalized prevention measures that will improve health outcomes. This approach to research in minority health and health disparities considers the current state of the science in these areas and opportunities to improve health equity for all populations.

Since the early 1990s, researchers have been working to identify, understand and address health disparities—health differences that adversely affect disadvantaged populations.

Over the years, research in the field has evolved from a basic descriptive understanding of what health disparities are and who is most affected to discovering the complexity of factors involved in health and its outcomes. These are recognized as determinants of health—the individual factors and the conditions in which we live, learn, work and play that influence health status.

Today, NIMHD delves deeper, introducing new approaches to the field. The SAP takes into account the complexity of this research and allows for flexibility as it moves forward to address current and emerging issues.

“What we’re learning about health disparities today has the potential to transform health for all populations,” said NIMHD director Dr. Eliseo Pérez-Stable. “The plan serves as a roadmap to get us there.”

Recent discoveries are revealing underlying causes of health disparities across the health spectrum. For example, studies suggest geographic disparities in health and life expectancy, where living in particular zip codes directly correlates to poorer

health status and higher mortality, particularly for racial and ethnic minorities and persons of less socioeconomic privilege.


Additionally, chronic stress has been linked to reduced telomere length, which can affect life expectancy and increase vulnerability to such chronic diseases as cardiovascular disease, diabetes and stroke—conditions highly prevalent in some racial and ethnic minorities.

“These studies indicate that ameliorating health disparities means gaining a deeper understanding of underlying mechanisms causing disparities,” said Pérez-Stable. “To do so, we must ensure adequate inclusion of racial and ethnic minorities in all clinical research. It’s simply good science.”

Today, we know that adverse health conditions may

not be the result of a single factor or incidence. Instead, they may result from multiple factors that can take place over a lifetime. The plan considers these and other determinants that influence health outcomes, along with the need to increase the number of underrepresented minority scientists to help improve inclusion and the quality of research.

Four themes define the SAP: strengthen research in minority health and health disparities from understanding etiology to improving methods and developing interventions; increase investigator-initiated research; strengthen research evaluation and reporting; and support expansion of workforce diversity.

To learn more about the plan, visit <https://www.nimhd.nih.gov/about/overview/scientific-advancement.html>. 

NINR Lecture Examines Roots of Hypertension in African Americans

BY JO-ANN KRIEBEL

For many college students, the drudgery of a campus job doesn’t lead to much more than funds to cover a few textbooks each semester. For Dr. Jacquelyn Taylor, however, that first campus job was the inspiration for a career in basic science research that would eventually lead to her receiving the highest honor bestowed by the U.S. government to outstanding scientists and engineers in the early stages of their independent research careers: The Presidential Early Career Award for Scientists and Engineers. Taylor is just the fourth nurse to receive this honor.

As Taylor recalls, Dr. Joseph Dunbar, chair of Wayne State University medical school’s department of physiology, “took a chance” and offered her a position as a laboratory technician when she inquired about a campus job. Taylor remained in the lab throughout her undergraduate studies and Dunbar became the first of many mentors helping guide her career studying genetic markers associated with an increased risk for high blood pressure (also known as hypertension) among African-American women.

After graduating with a B.S.N., Taylor later completed M.S.N. and Ph.D. programs, a postdoctoral program in aging and urban health and additional training in genetics and genetic epidemiology. Through it all, she gathered a diverse group of mentors across the fields of physiology, nursing, gerontology, genetics, medicine and social science.

Embodying the spirit of the NINR Director’s lecture series, which according to NINR director Dr. Patricia Grady provides “an opportunity for us to see how the science has grown over time...[and]

an opportunity to get a window into the future, where the science is going,” Taylor described the trajectory of her program of research.

Initially, she studied the genetics of hypertension among multiple generations of African-American women in Detroit. Since the women in this study tended to be overweight or obese, she sought to replicate the study among the Dogon tribe in Mali, West Africa, a hunter-gatherer society whose members tend to be underweight, but

who still have issues with hypertension. Many African Americans have Dogon roots.

Finally, she replicated the study in a large epidemiological sample, the Hypertension Genetic Epidemiology Network, which includes African-American mothers and daughters with hypertension.

In each of these studies, she discovered single nucleotide polymorphisms—variations in single DNA base pairs—in genes associated with hypertension risk, findings that could help guide clinical practice when considering early interventions and

prevention plans.

Taylor, the inaugural Vernice D. Ferguson endowed professor in health equity at the Rory Meyers College of Nursing at New York University, is continuing her research via the NINR-funded Intergenerational Impact of Genetic and Psychological Factors on Blood Pressure study.

Her lecture is available on NINR’s YouTube channel at <https://www.youtube.com/NINRnews>. 



NINR director Dr. Patricia Grady (l) and Dr. Jacquelyn Taylor

Notification of Patient Overdose Deaths Reduces Clinician Opioid Prescriptions

Clinicians were more likely to reduce the number and dose of opioid drugs they prescribed after learning that one of their patients had died from an overdose from a controlled substance than those not notified, according to a recent study appearing in the Aug. 10 issue of *Science*. The study was funded in part by NIA.

Dr. Jason Doctor of the Schaeffer Center for Health Policy & Economics at the University of Southern California and colleagues found that physicians who received a letter from the chief deputy medical examiner informing them of the overdose death of one of their patients reduced the number of opioids prescribed by 9.7 percent in the 3 months following the intervention.

“This finding could be very useful in the effort to reduce inappropriate prescribing of opioids without severely restricting availability of legally prescribed opioids for patients who should be getting them,” said NIA director Dr. Richard Hodes. “It shows that physicians respond to information about adverse outcomes. Behavioral ‘nudges’ like these letters could be a tool to help curb the opioid epidemic.”



Clinicians were more likely to reduce the number and dose of opioid drugs they prescribed after learning that one of their patients had died from an overdose, says a recent study.

IMAGE: DEVONYU/ISTOCK

NIH Researchers Discover Highly Infectious Vehicle for Transmission of Viruses

Researchers have found that a group of viruses that cause severe stomach illness—including the one famous for widespread outbreaks on cruise ships—get transmitted to humans through membrane-cloaked “virus clusters” that exacerbate the spread and severity of disease. Previously, it was believed that these viruses only spread through individual virus particles. The discovery of these clusters, the scientists say, marks a turning point in the understanding of how these viruses spread and why they are so infectious. This preliminary work could lead to the development of more effective antiviral agents than existing treatments that mainly target individual particles.

The researchers studied norovirus and rotavirus—hard-to-treat viruses that are the most common cause of stomach illness, or gastroenteritis, and that afflict millions of people each year. The viruses cause symptoms ranging from diarrhea to abdominal pain and can sometimes result in death, particularly among young children and the elderly. Their highly contagious nature has led to serious outbreaks in crowded spaces throughout many communities, most notably in cruise ships, daycare centers, classrooms and nursing homes. Fortunately, vaccines against rotavirus are now available and are routinely given to babies in the United States.

“This is a really exciting finding in the field of virology because it reveals a mode of virus spread that has not been observed among humans and animals,” said study leader Dr. Nihal Altan-Bonnet, senior investigator and

head of NHLBI’s Laboratory of Host-Pathogen Dynamics. “We hope that it will provide new clues to fighting a wide range of diseases involving many types of viruses, including those that cause gastrointestinal illnesses, heart inflammation, certain respiratory illnesses and even the common cold.”

The study, supported in part by NHLBI and NIAID, is featured as the cover story of *Cell Host & Microbe* and appeared online on Aug. 8.

Intervention for First-Time Moms and Their Infants Improves Child Weight

An intervention designed to help first-time mothers effectively respond to their infant’s cues for hunger, sleep, feeding and other infant behaviors significantly improved the body mass index (BMI) z-scores of the child through age 3 years compared with the control group.

Results of the study, called Intervention Nurses Start Infants Growing on Healthy Trajectories (INSIGHT), were published Aug. 7 online in *JAMA*.

Funded by NIDDK, INSIGHT randomly assigned first-time mothers and their infants into two groups to determine if an intervention in “responsive parenting” delivered during infancy and early childhood promoted healthy weight gain leading to improved BMI z-scores through age 3 compared to a control group who did not receive the responsive parenting intervention. The 279 mothers who participated were an average of 28 years old, mostly white, married, well-educated and privately insured, although INSIGHT researchers aimed for a racially and economically diverse study population. Overall, retention over 3 years was 83 percent.

First-time mothers assigned to the “responsive parenting” group were educated on how to respond to their infant’s needs across four behaviors: feeding, sleep, interactive play and emotional regulation.

Responsive parenting encourages parents to interact with their child in a way that is appropriate for their age and meets the child’s needs. This group also learned such strategies as how to put infants to bed drowsy, but awake and avoid feeding infants to sleep; anticipate and respond to infants waking up at night; when to introduce solid foods; how to use growth charts; and how to limit sedentary time.

The control group received a home safety intervention. Both groups received 4 home visits from a research nurse during infancy, followed by annual research center visits at 1, 2 and 3 years old.

“Educating first-time mothers about responsive parenting practices can promote healthy weight gain,” said Dr. Voula Osganian, director of NIDDK’s pediatric clinical obesity program. “By helping parents to understand how to respond to their infant’s cues when drowsy, sleeping, fussy and alert, we can help them to instill healthy behaviors in the child during a critical period of development.”



An intervention designed to help first-time mothers respond to their infant’s cues significantly improved the body mass index.

IMAGE: NIDERLANDER/ISTOCK



Dr. Jessica M. Gill

Gill Named NINR Deputy Scientific Director

Dr. Jessica M. Gill has been appointed deputy scientific director of the Division of Intramural Research at the National Institute of Nursing Research. She will participate with the scientific director in planning and directing NINR's intramural research activities.

Gill is a Lasker clinical research scholar, senior investigator at NIH and chief of the brain injury unit at NINR. In these roles, she is responsible for both the laboratory and clinical programs of research that address biologic and behavioral mechanisms and clinical outcomes in individuals, including military personnel, athletes and other groups who present with traumatic brain injuries.

Gill has been able to extend the reach of her science through development of several key collaborations including leading the biomarker core for the National Collegiate

Athletic Association CARE Consortium, co-directing the Center for Neuroscience and Regenerative Medicine and leading the biomarkers core for the Chronic Effects of Neurotrauma Consortium.

Significant scientific accomplishments include her most recent work published in *Brain Behavior and Immunity* (2018) where she was the first to report that blast exposure results in a unique profile of protein changes, including changes in tau, phosphorylated tau and amyloid-beta. This research suggests that tau and amyloid-beta activity following blast initiate neurodegenerative processes that may underlie chronic symptoms.

For details, visit Gill's profile at www.ninr.nih.gov/researchandfunding/dir/JGill.

Lei Named NIGMS Division Director

Dr. Ming Lei recently joined NIGMS as new director of its Division for Research Capacity Building.

DRCB includes four programs: Institutional Development Awards, Native American Research Centers for Health, Science Education Partnership Awards and Support of Competitive Research. The division supports research, training, faculty development and infrastructure improvements in states that historically have not received significant levels of NIH funding. It also supports faculty development at institutions that serve students from underrepresented groups, research and research capacity building directed by Native American and Alaska Native tribal organizations and science education that improves life-science literacy.

Lei, a molecular geneticist, was previously deputy director of the Center for Cancer Training and chief of the Cancer Training Branch at NCI. Prior to joining NCI as a program director in 2008, he was leader of the genes and genome cluster in the division of molecular and cellular biosciences at the National Science Foundation from 2006 to 2008. He was an associate professor of microbiology at the Medical College of Wisconsin from 1999 to 2008. Lei also served as a research scientist in the division of biotechnology at Monsanto Corp. in St. Louis from 1998 to 1999.

Lei earned a Ph.D. in molecular biology from Cornell University, where he also conducted postdoctoral research. His honors include an Award of Appreciation for Outstanding Contributions from the American Association for Cancer Education and several NIH merit awards.

"I'm excited to join NIGMS and I look forward to working with a broad range of stakeholders to strengthen the nation's biomedical research capacity," said Lei. [R](#)



Dr. Ming Lei

Have a question about some aspect of working at NIH? You can post anonymous queries at <https://nihrecord.nih.gov/> (click on the Feedback tab) and we'll try to provide answers.

Feedback: MLP-10 is absolutely filthy. I normally take the stairs one or two flights, and have seen the same trash (namely a chicken bone) since the fall (it is now the end of April). There is no reason a parking garage should go so long without being cleaned. There is garbage everywhere (in and around parking spaces, in the stairwells, etc.), dirt and dust covering every surface and year-old dried fluids around all of the trash and recycling receptacles (which are also not changed nearly enough). This garage should be swept regularly, power-washed at least once a year and trash [should be] removed on a regular basis. Although it is sad that some of the staff here feel free to dispose of their trash (and chicken bones) wherever they please, there is still no reason the rest of us should be subjected to such disgusting facilities.

Response from the Office of Research Facilities:

ORF recently took additional actions to address the state of parking facilities on the NIH main Bethesda campus. As part of these efforts, a routine, general sweeping of garage stairwells and floors was completed. Additionally, recycling bins have been added to the facility to encourage the proper disposition of trash. In MLP-10, additional signage will direct staff to use the trash bins for trash only and to take recycling to bins on the 3rd floor stairwell entrance/exit landing. The cleaning of interior light fixtures and elevator shafts is still ongoing. As funding permits, additional power-washing of stairwells and floors will be contracted. We encourage all employees and guests to contact the ORF Maintenance Line at (301) 435-8000 to report any building in need of service and the issue will be promptly addressed. We agree the NIH facilities are destinations both visitors and employees should be proud of.

Feedback: I have seen painters and drywallers clean their instruments in the men's restrooms. Isn't there another place they can do this? They make a mess (paint splatter) not to mention partially clogging the sink (drywall compound).

Response from ORF: Painters and drywallers should not be cleaning their instruments in the restrooms. In-house maintenance staff are well aware of locations to appropriately clean their instruments. If you see this situation occurring, attempt to determine who they work for and contact the facility manager in your building. A list of NIH facility managers can be found at <https://www.orf.od.nih.gov/AboutORF/BFM/Pages/default.aspx>.

Feedback: Why was the water cooler removed in Bldg. 10 at the intersection of the North and D-wing corridors?

Response from ORF: The bottled water cooler was moved in response to safety concerns. Staff were slipping on puddled water in a high-traffic location. The water cooler was relocated to the adjacent stairwell vestibule in 1D.



At a flag-raising event in front of Bldg. 1 are (from l) Adm. Brett Giroir, assistant secretary for health; Capt. Josef Rivero, a physician assistant at NHLBI; NIH principal deputy director Dr. Lawrence Tabak; and NIAID's Susan Orsega, PHS chief nurse officer. At right, Giroir offers keynote remarks in Wilson Hall, Bldg. 1.

PHS Celebrates 220th Birthday

On July 16, outside Bldg. 1, the Public Health Service flag was raised, just below the American flag. On that date, 220 years ago, President John Adams signed into law the "Act for the Relief of Sick and Disabled Seamen," which paved the way for a network of marine hospitals and thus began the story of the Public Health Service.

After the flag-raising, a ceremony in Wilson Hall honored the history of the Public Health Service and the Commissioned Corps. On Jan. 4, 1889, Congress created the Commissioned Corps in response to a shortage of health care in the Marine Hospital Service (renamed the Public Health Service in 1912). Since its creation 129 years ago, the Commissioned Corps has served the nation to decrease mortality and morbidity in the areas of vaccination, healthier mothers and babies and control of infectious diseases.

There are more than 6,500 uniformed health officers in the Commissioned Corps who serve



Enjoying a light moment at the celebration are (from l) Tabak, Radm. Rick Childs, NHLBI clinical director; Orsega; Giroir; Lt. Elizabeth Cohen; and Capt. Tiffany Edmonds.

PHOTOS: ERNIE BRANSON

in 800 locations in every state and worldwide to protect, promote and advance the health and safety of our nation.

"Where there's a need, we're there," said assistant

secretary for health Adm. Brett Giroir in keynote remarks at the anniversary.

And that need remains great. The United States spends more on health care than any other developed country, yet ranks highest in chronic disease and obesity, said Giroir. Meanwhile, in 2015, U.S. life expectancy began decreasing for the first time in 15 years and the death rate for 9 of the 10 leading causes of mortality has risen.

"Despite our spending, we're getting less healthy," he said. "This is the first time in history that our children will likely live shorter, less quality lives than we do, and I won't accept that."

Giroir, who is also a pediatrician, is equally concerned that U.S. preterm birth rates have risen dramatically over the last 2 years and maternal mortality is the highest in the developed world. There are myriad emerging threats too, from rising opioid and alcohol addiction and suicide to new infectious diseases and antimicrobial resistance.

"I'm committed to using the Commissioned Corps as an agent of change," said Giroir.

The risk of many diseases can be greatly reduced with healthy lifestyle changes. Addressing the substance abuse and mental health epidemics will require the help of more nurses, behavioral health specialists and social workers, he said. And so much is becoming possible by harnessing the latest research and leveraging digital platforms.

"We need to transform the current sick care system into a health-promoting system," Giroir said. "This ultimately means we have to work on the social determinants of health and behaviors that underlie all chronic conditions."

At a medical conference Giroir attended in Oklahoma, one of the kudos posted was what he believes encapsulates the service and dedication of the Commissioned Corps: "Thank y'all for taking the time to help others. People like you help us all keep faith in humanity."—Dana Talesnik



ABOVE: The Public Health Service flag is raised, beneath the American flag, on the Bldg. 1 lawn on July 16. On that date, 220 years ago, President John Adams signed into law the "Act for the Relief of Sick and Disabled Seamen." The PHS was born from the network of marine hospitals that resulted.