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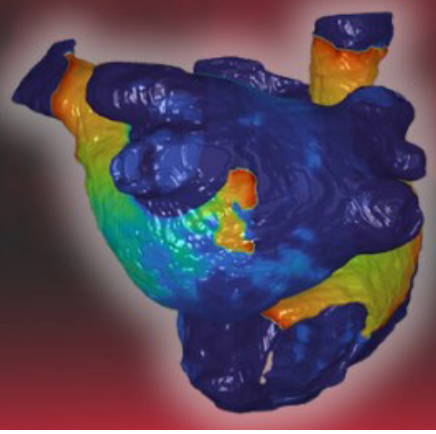


National Institutes of Health

NIAID's Memoli Appointed NIH Acting Director

Dr. Matthew J. Memoli was appointed as the acting NIH director, effective January 22. Memoli will serve in this role until a new NIH director is confirmed and on board at NIH.

Dr. Matthew Memoli
PHOTO: CHIA-CHI CHARLIE CHANG

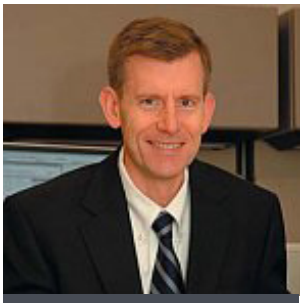
SEE **MEMOLI**, PAGE 3

Construction Projects Continue Across NIH

BY ERIC BOCK

NIH's appearance is slowly changing as construction workers progress on several important projects around its campuses.

One high-profile project is the Clinical Center's Surgery, Radiology and Laboratory Medicine (SRLM) wing. Scheduled to open in 2029, the wing will house three departments—perioperative medicine, radiology and imaging sciences, and laboratory medicine—as well as National Cancer Institute and National Heart, Lung and Blood Institute labs and patient service areas.



ORF Director Dan Wheeland

In addition to the SRLM wing, several other ongoing projects are in various stages, including the Vaccine Research Center (VRC) expansion, an electrical switching station and emergency generators building, and a utility tunnel.

"One of the critical features of our construction projects–at all of our sites in Maryland, Montana, North Carolina and Arizona—is that our projects are scored and prioritized by the Research Facilities Advisory Committee to ensure that our investments are driven by science," said Dan Wheeland, director of NIH's Office of Research Facilities. "In this way, our facilities investments optimize their contribution to the discovery of novel diagnostics,

SEE **CONSTRUCTION**, PAGE 6

DOHS staff discuss lab safety, p. 12.

ALSO THIS ISSUE

PAINFUL EXPECTATIONS

Atlas Investigates the Role of Placebo in Pain Management

BY AMBER SNYDER

Dr. Lauren Atlas

Many of us have heard of the "placebo effect," a beneficial health outcome resulting from a person's anticipation that an intervention will help. Placebo effects tend to be the strongest in pain, leading researchers such as Dr. Lauren Atlas to wonder how the phenomenon might be harnessed to offer more effective pain relief.

Atlas, chief of the Affective Neuroscience and Pain Laboratory at the National Center for Complementary and Integrative Health (NCCIH), also holds joint appointments with the National Institute of Mental Health (NIMH) and the National Institute on Drug Abuse (NIDA). Her lab focuses on characterizing the psychological and neural mechanisms by which expectations and other cognitive and affective factors influence pain, emotional experience and clinical outcomes.

In her recent Director's Seminar series lecture, "Neural and Psychological Influences on Pain and its Assessment," Atlas sought to understand how psychological factors shape pain.

"More than 30 million people in the U.S. live with some form of chronic or severe pain—more than cancer, heart disease and diabetes combined," she said. Atlas believes psychologists such as herself can offer insights into understanding the relationships between pain, social processing, decisions and more.

"We think the placebo effect depends

SEE **PAIN**, PAGE 4

NCATS-FDA Team Up for Rare Disease Day 2025

Since 2008, the last day of February has been recognized around the world as Rare Disease Day, a time to spotlight 300 million people living with rare diseases and the research being done to combat those diseases.

This year, NCATS has teamed up with the U.S. Food and Drug Administration (FDA) to co-sponsor Rare Disease Day 2025.The annual event aims to raise awareness about rare diseases, the people they affect and the collaborations that address challenges and advance research for new treatments.

On Feb. 27 and 28, Rare Disease Day will feature personal and scientific stories from researchers, advocates and people living with rare diseases. Topics will include the clinical and regulatory applications of artificial intelligence in rare diseases; recent approvals and successes in gene therapy; drug development through innovative trial design, and ensuring access across the rare disease treatment pipeline.

The sessions are open to staff and the public—including patients, patient advocates, caregivers, health care providers, researchers, trainees, students and industry representatives. The hybrid event will take place in person at the Natcher Conference Center and on videocast.

To learn more and to register, visit https://ncats.nih.gov/rdd.

Jaffe Lecture Will Connect Clinical Practice to Disease Discovery

March 5

While peering through a microscope over a century ago, German pathologist Carl Sternberg and later, American pathologist Dorothy Reed, independently described giant "Reed-Sternberg" cells, which are the microscopic hallmarks of Hodgkin lymphoma.

NCI's Dr. Elaine Jaffe

Learn about how seemingly routine clinical observations can spur the discovery of new diseases and how they are managed at the G. Burroughs Mider Lecture, presented by Dr. Elaine Jaffe. Titled, "The Microscope as a Tool for Disease Discovery," this talk is part of the Wednesday Afternoon Lecture Series (WALS) and will be held on March 5 at 2 p.m. E.T. in Bldg. 10, Lipsett Amphitheater.

In her talk, Jaffe will touch on the historical basis upon which lymphoma is classified today and illustrate how histological observations are integrated with our contemporary understanding of the immune system, genomic findings and a patient's clinical presentation.

Jaffe joined NCI as a resident in anatomic pathology and has been a senior investigator since 1974, focusing on the classification and definition of lymphoid neoplasms. Recognizing her outstanding contributions to the field of hematology, she received the Henry M. Stratton Medal from the American Society of Hematology in 2013, one of her many awards.

Jaffe has served on the editorial boards of The American Journal of Pathology, Blood, and Cancer Research, among others. In 2008, she was elected to the National Academy of Medicine, considered one of the highest honors bestowed to a U.S. scientist.

The Mider Lecture was established in 1968 in honor of the first NIH director of laboratories and clinics and is presented annually by an NIH intramural scientist to recognize outstanding contributions to biomedical research.

For those unable to attend in person, the event will be hosted on NIH videocast for HHS only at https://videocast.nih.gov/watch=55025.

DDM Seminar to Explore Ways to Thrive Under Pressure

March 6

The second session of the annual Deputy Director for Management (DDM) seminar series, titled, "Thriving Under Pressure," will feature Dr. Luana Marques. The seminar will take place on Thursday, March 6 from 11 a.m. – 12:30 p.m., ET on videocast.

Marques, an associate professor of psychiatry at Harvard Medical School, has helped millions in her relentless efforts to equip everyone, everywhere, with the skills to thrive. She offers a roadmap for high performers in high-paced environments to stay self-regulated, motivated and thriving. Her influential work has been recognized by numerous global platforms.

The DDM seminar series provides insights into leadership and management concepts, challenges and solutions. The 2025 series covers conflict, resilience, appreciation and purpose. The series is open to all NIH employees. Mark your calendars for the remaining two DDM seminars: May 15 and July 10.

For more information, including how to register in advance to receive learning credits for participating, visit https://ddmseries.od.nih.gov/.

Dr. Luana Marques

To watch, see: https://videocast.nih.gov/watch=55428. The videocasting will include closed captioning. If you have a disability and need reasonable accommodations to participate in this event, please call the NIH Training Center at 301-496-6211 at least five business days in advance.

Blood Bank Urgently Seeks Donations

The NIH Blood Bank is in critical need of A positive and O positive blood donations.

There's an acute shortage due to surgeries. A positive and O positive blood types are among the most commonly used in surgeries, emergency transfusions, and treatments for critically ill patients.

Walk-in donors are welcome or call 301-496-1048 to schedule an appointment. The NIH Blood Bank is open Mondays – Fridays from 7:30 a.m. – 4:00 p.m. For directions, see: https://www.cc.nih.gov/bloodbank/find-us.

Unsure about eligibility? See: https://www.cc.nih.gov/bloodbank/can-i-donate.

Clinical Center patients depend on the generosity of donors to support their recovery and well-being. Your donation could make a life-saving difference.

Demystifying Seminar Poses Question on Longevity

"Can we live to 120?" Join Dr. Luigi Ferrucci and Dr. Payel Sen of the National Institute on Aging as they explore this question at a Demystifying Medicine seminar on March 4 at 3:00 p.m., ET.

Ferrucci is a geriatrician and an epidemiologist who conducts research on the pathways leading to progressive physical and cognitive decline in seniors. Sen is a Stadtman early-career investigator who studies RNA regulation.

The Demystifying Medicine Series, jointly sponsored by FAES and NIH, includes presentations on pathology, diagnosis and therapy in the context of major disease problems and current research. This series is designed to help bridge the gap between advances in biology and their application to major human diseases. All HHS staff can view the videocast at: https://videocast.nih.gov/watch=55404

For more information, see: https://demystifying-medicine.od.nih.gov.

Memoli

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In November, President-elect Donald Trump nominated Dr. Jay Bhattacharya, a professor at Stanford, as the next NIH director. The nomination awaits confirmation by the U.S. Senate.

Memoli heads the clinical studies unit in the Laboratory of Infectious Diseases at the National Institute of Allergy and Infectious Diseases (NIAID).

He received his bachelor's degree from the College of William and Mary and a master's in microbiology from Thomas Jefferson University. He then received his medical degree from St. George's University School of Medicine in the West Indies, Grenada. Memoli completed a residency in internal medicine at the Washington Hospital Center at Georgetown University. After completing an infectious disease fellowship in NIAID, he developed a clinical/translational research program to study influenza and other respiratory viruses.

"I know you have many questions about how the Presidential Executive Orders and Memoranda are affecting NIH broadly and your work specifically," Memoli wrote to all NIH staff in a Jan. 31 email. "I assure you that we have an all-hands-on-deck effort to assess these directives and respond to them as efficiently as possible with the goal of ensuring that our vital work can continue. I am working closely with the new HHS leadership every day to determine the necessary actions and am transmitting that information to your Institute and Center leadership."

Transition Guidance for NIH Staff

To ensure that staff have the latest guidance and resources related to NIH actions as a result of the Presidential transition, NIH has launched a central intranet page called Transition Guidance for NIH Staff. This site, launched and maintained by NIH's Office of Communications and Public Liaison, will be updated frequently as new guidance is received.

NIH employees can access this guidance at: go.nih.gov/CaNRXtS.

Heart-Health Screenings are Coming to Campus

During American Heart Month, NIH is bringing biometric health screenings back to the Bethesda campus. The mobile health van will offer blood pressure checks, cholesterol (non-fasting) and diabetes (A1C) screenings as well as health education appointments. Walk-ins are welcome. Appointment reservations are limited.

The van will be located behind the Clinical Center in Lot 10H and will offer the screenings on two consecutive Thursdays: Feb. 20 and Feb. 27, from 8:00 a.m. to 2:00 p.m., ET. Note that screening staff will close briefly each day from 11:45 a.m. - 12:30 p.m.

CARE ON THE GO
FEB. 20, 27

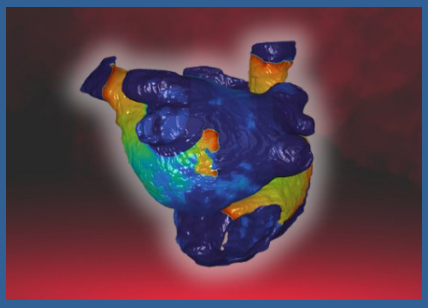
The screenings are open to all NIH staff with an NIH ID badge.

To schedule an appointment, see: https://wellness-event.kaiserpermanente.org/signup/nih.

Questions? Contact Jan Tortarella at jan.tortarella@nih.gov.

Also, throughout the month, free "Fit For You" movement classes will feature a variety of heart-healthy workouts. For live and archived classes, visit: www.facebook.com/NihRwfitness/. For those without a Facebook account, click the "x" on the front of the page to begin viewing the video player.

Stay tuned for information about a webinar in March to mark National Nutrition Month.



ON THE COVER: *NHLBI-supported researchers are studying how to use virtual organs, including hearts, to make surgeries more precise and support recovery. Shown is a virtual (computer) model of a patient's heart before surgery. For more information, visit NHLBI's website for the feature titled, "Building digital twins and hearts." February is American Heart Month.*

IMAGE: TRAYANOVA LAB, JOHNS HOPKINS UNIVERSITY

The NIH Record

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National Institutes of Health
Turning Discovery Into Health

Pain

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on the combined psychological processes of expectations for pain relief, shifts in emotions (like less anxiety) and the actual interpersonal social treatment context," Atlas explained. By both manipulating and measuring each of these processes, she can isolate their effect on pain, and possibly answer other key questions about where and how it happens in the brain.

Atlas elicits pain responses in the lab using a thermode—a computer-controlled device that heats up and can cause mild pain. Each volunteer creates their own pain tolerance scale, with ratings one through 10, but they only experienced intensities they identify as tolerable (up to level eight) in follow-up experimental trials. In order for each volunteer to participate in further experimental trials, they had to be consistent in their self-reported scoring.

Several of Atlas's postbac fellows analyzed the data of participants who had returned for multiple visits. Overall, these participants were reliable in their scoring of pain threshold and tolerance but, interestingly, the investigators found women were more reliable than men across all measures and across all visits.

"These findings contradict the assumption that female participants will be less consistent due to hormonal factors," Atlas said. Instead, one might ask "Why are men more variable?"

After establishing her pain elicitation model, Atlas moved to the next step: looking to identify pain biomarkers. Brain imaging such as functional magnetic resonance imaging (fMRI) is one promising method. Atlas and her colleagues developed a statistical classifier model called the Neurologic Pain Signature (NPS), which measures brain activity associated with pain and uses those signals to predict pain intensity.

In an fMRI study, participants experienced heat or liquid solutions with an unpleasant or pleasant taste (different concentrations of salt or sugar, followed by a neutral rinse). During an initial visit, participants experienced all stimuli and were asked to rate their level of pain and also the perceived intensity of the taste they experienced. Interestingly, participants with a higher heat tolerance could also tolerate higher concentrations of salt and sugar. When two negative stimuli occur together, Atlas said, we can use classifiers such as the NPS to distinguish their separate contributions. Indeed, when a postdoc in Atlas's group, Dr. Yili Zhao, compared the NPS response to painful heat to equally intense salt, she found that the NPS showed greater expression in the heat group, confirming specificity to pain.

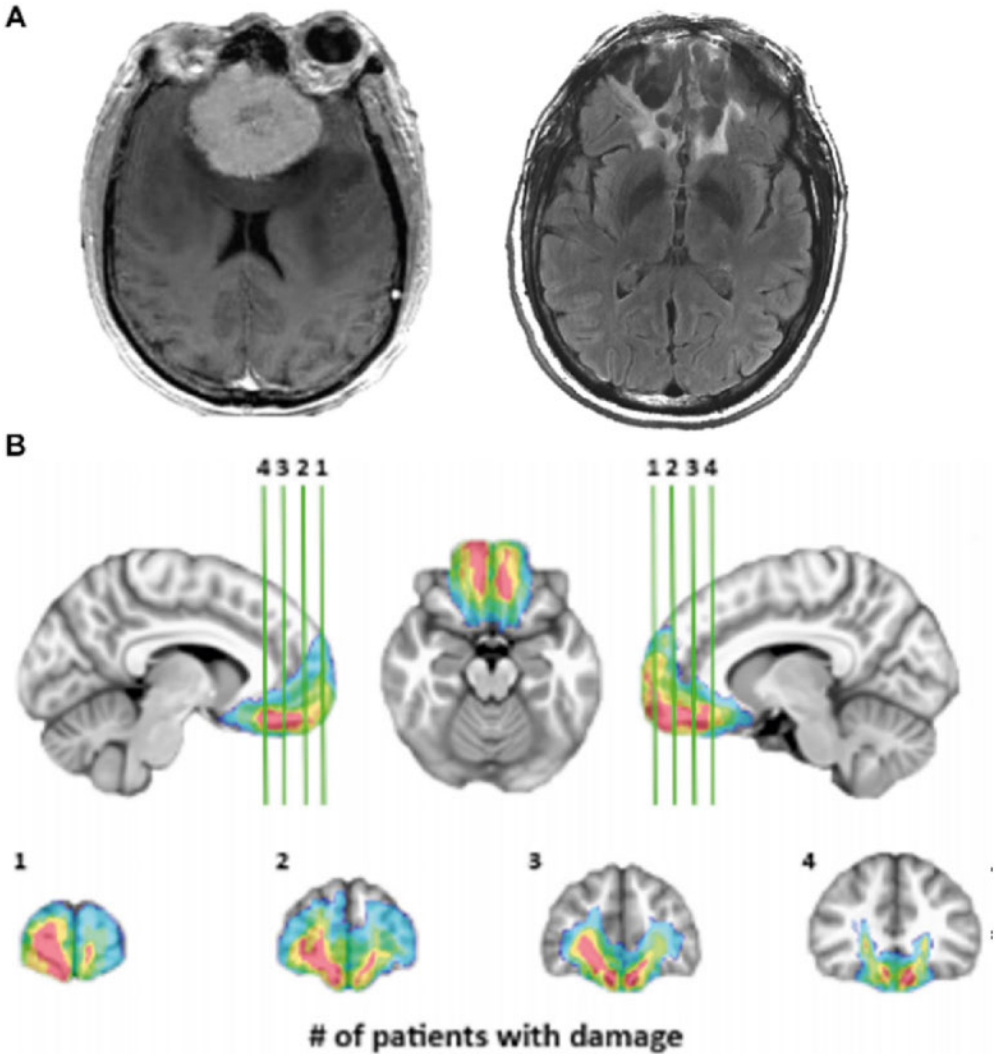
With these baselines established, how can placebo shape pain and emotional reactions?

In the first test, patients received either a control cream or a "potent analgesic," both of which were actually inert. The patients were conditioned to expect a certain pain stimulus—high intensity for the "control" and low intensity for the "potent analgesic"—and then both groups received a moderate intensity pain stimulus in the test phase.

Upon analysis, the fMRI scans showed "reliable reductions in pain," but there appeared to be no placebo effect on the NPS. "This suggests placebos are reducing pain," Atlas said, "but not via changes in the NPS."

Other areas of interest are the orbitofrontal cortex (OFC) and nearby ventromedial prefrontal cortex (VMPFC). "These regions are hubs that receive input from limbic and sensory areas, and they also project to other areas of the brain critical for affective processing," Atlas explained.

In short, this brain region is fundamental for prediction, expected value and learning. To study the OFC/VMPFC's response to pain, patients were taught to expect certain pain levels when predicted by certain auditory cues. Next, in a test phase, patients either experienced the auditory cue with the matched pain (low or high), or an auditory



(A) fMRI image of a patient with an orbital meningioma of the VMPFC, pre- and post-surgery; and (B) lesion overlap maps depicting the location of each of the five patients' tumors

cue with medium-intensity pain.

When the moderate pain was preceded by the low-pain cue sound versus the high-pain cue sound, Atlas found, the reported pain readings showed "reliable reductions" of about 20%. "We've seen over and over again that the OFC is critical for this type of cue-based expectation and pain modulation," she said.

Atlas also examined the data from the study comparing pain with salt and sugar in the context of the VMPFC, and saw similar reductions in the intensity ratings and shared responses to predictions in the VMPFC across all three types of stimuli.

Finally, she compared five patients who had surgical lesions of the VMPFC (due to orbital meningioma tumors) with 20 healthy controls. All participants underwent the same pain calibration procedures from the earlier trials, but the VMPFC lesion patients seemed to experience stronger placebo effects than the healthy controls.

"VMPFC lesions enhance expectancy effects on pain, particularly pain unpleasantness," summarized Atlas.

She also presented findings on social influences on pain expectations and assessment. The more similar a prospective provider looked to a patient, for example, the less pain the patient expected to experience during a medical procedure.

Racial biases are an obstacle patients may face when seeking treatment for pain. Research conducted by Atlas showed that volunteers were less likely to report facial expressions as painful when the target was Black, and even more so when the target was a Black male. However, she also found that volunteers improved their accuracy when they got to see the target's own pain assessment.

Ultimately, Atlas said, we still have much to learn about the placebo effect and ways to improve patient pain outcomes. "Placebo analgesia seems to reflect shifts in emotion, learning and expectations, rather than changes in physiological signals, but this doesn't mean placebo effects aren't real," she summarized. "Shifting someone's anxiety can have real effects on their health."

A recording of the lecture can be viewed here: https://videocast.nih.gov/watch=55366.

NIDCD Explores Dissemination, Implementation Research

The field of implementation science, which aims to narrow evidence-to-practice gaps, is gaining traction in health services research, population health sciences and public health.

Above, l, NIDCD Director Dr. Debara Tucci introduces Dr. Meghan Lane-Fall (r).

More than 100 attendees recently gathered to hear expert advice about current best practices in dissemination and implementation (D&I) research during a seminar held virtually and in-person on NIH's main campus. The seminar was hosted by the National Institute on Deafness and Other Communication Disorders (NIDCD).

This NIDCD Director's Seminar featured a presentation by Dr. Meghan Lane-Fall, executive director of the Penn Implementation Science Center at the University of Pennsylvania. Lane-Fall, a practicing anesthesiologist and intensive care physician who also is an expert in implementation science, provided an overview of D&I research and described challenges and opportunities in NIDCD's mission areas: hearing, balance, taste, smell, voice, speech and language.

"The findings that you have in your lab—the innovations that you create—will never change health unless there are people doing implementation," Lane-Fall said. "We need to start thinking about implementation at the very beginning, not at the end, so that we give ourselves the best chance of getting these innovations into practice. And then, for maximal impact, we have to think about equity...[or] we risk creating more evidence-to-practice gaps."

NIDCD Director Dr. Debara Tucci then moderated a panel discussion that included Dr. Shannon N. Zenk, director of the National Institute of Nursing Research; Dr. Monica Webb Hooper, deputy director of the National Institute on Minority Health and Health Disparities; and Dr. Holly Storkel, program officer for NIDCD's language program.

> ***"The findings you have in your lab—the innovations you create—will never change health unless there are people doing implementation."***
>
> -DR. MEGHAN LANE-FALL

NIDCD supports D&I research that bridges the gap between scientific discoveries and practical applications in public health and clinical settings. The institute's support for D&I research is described in its 2023-2027 strategic plan. Further research needs and opportunities are summarized from a recent D&I Science in Communication Disorders workshop, found at go.nih.gov/NWJkLf8.

The NIDCD Director's Seminar Series: Advancing the Science of Communication to Improve Lives features next-generation research that accelerates advances in NIDCD mission areas.

From l: Lane-Fall, NIMHD Deputy Director Dr. Monica Webb Hooper; NINR Director Dr. Shannon N. Zenk; and NIDCD Program Officer Dr. Holly Storkel discuss best practices in dissemination and implementation research.

Construction

CONTINUED FROM PAGE 1

therapeutics and cures."

VRC expansion

Construction is more than halfway finished on the Bldg. 40 VRC expansion project, said senior project manager Maya KaiKai. Once completed, the six-story, 80,000-square-foot addition will double the available laboratory space for critical vaccine research, increase office space and add meeting conference space. Currently, the 20-year-old building is at capacity.

Workers recently completed the mechanical penthouse, the highest point of the building. After topping out the building, workers then installed the building's curtain wall, the glass covering that wraps around the VRC's exterior. The addition will match the look and feel of the existing building.

Before the existing building could be connected to the new one, workers had to remove the building's curtain wall.

"You don't want to remove the wall unless you can keep the weather out," he explained. "Essentially, we built a wall within a wall before we could take down the curtain wall. That took a couple of years."

Next, workers will begin to install interior mechanical, electrical and plumbing systems. Each floor will be separated by an interstitial space, which contains a dense network of ducts, pipes and wiring that service mechanical systems. The spaces will also include a waterproofing system to help protect labs against flooding, a problem that plagues some of the older labs on campus.

Other features will include a green roof, solar panels, LEED lighting with daylight sensors and plumbing fixtures that will reduce water usage by 30 percent.

Construction is expected to be completed in the summer of 2026.

Power upgrades

Work on the electrical switching station and emergency generators (ESSEG) project is nearing completion. Once up and running, the ESSEG will provide normal and emergency power to the Clinical Center (CC). It will replace the existing Bldg. 59 and 59A electrical medium-voltage normal power distribution switching station for the CC.

Located in a new building called "the Vault," the structure will protect the ESSEG from the elements. It's engineered to withstand hurricane-force winds and earthquakes.

The ESSEG encompasses electrical equipment that distributes power throughout the entire complex of CC buildings, including the currently under construction SRLM, and generators that can power the research hospital for at least four days. Each generator is connected to a 20,000-gallon fuel tank.

"The ESSEG isn't just replacing what's inside Bldgs. 59 and 59A. It's also expanding future capacity," said Nicole Gerke of the SRLM project team. Since the ESSEG will be around for the next 50-70 years, it must be reliable, durable and equipped to support whatever comes next.

Recently, crews have moved and installed all the switch gear equipment, all six generators and fuel tanks into the vault. "We're now in the stage where we're starting to connect everything together," she said.

It's estimated the ESSEG will be able to supply normal power to the CC by this spring and emergency power by the end of the year.

"Then that starts a year-long process of doing what I call the 'Switchover,'" Gerke said. "That's when we'll start systematically taking service from the CC that went to Bldgs. 59 and 59A and connecting it to the ESSEG. If the switchover happened at once, the hospital would see disruptions to its power."

• • •

"Our facilities investments optimize their contribution to the discovery of novel diagnostics, therapeutics and cures."

-ORF DIRECTOR DAN WHEELAND

• • •

The Bldg. 40 VRC expansion will double the available laboratory space for critical vaccine research, increase office space and add meeting conference space.

The ESSEG's generators can support the NIH Clinical Center for at least four days.

Once the project is complete, Bldg. 59/59A will be decommissioned and demolished to free up space for future projects.

Center Drive Utility tunnel

Crews are just starting to build an 800-foot long utility tunnel that will start at the intersection of Wilson and Center Drives and end at a point just south of Bldg. 31C, said Dan Moses, chief of the ORF Utilities Distribution Branch. The project will take three years.

The new tunnel will carry steam, chilled and domestic water lines, replacing lines that were first installed in the 1960s. These old lines have reached the end of their useful life, failing twice in the last three years.

The existing lines form part of a main utility loop around campus. These lines are buried directly underground, and there's no easy way to access them. The concrete trench box they were in collapsed more than twenty years ago.

"Putting the lines inside a tunnel has two advantages," Moses said. "First, we can inspect and repair the lines without disturbing any above-ground features. That means we won't have to dig underneath Center Drive, one of campus's major thoroughfares. Secondly, if there's ever a problem, we can access it promptly."

Three new valve vaults will also be built that will provide access to utility equipment. In the event of an emergency, workers can isolate sections of the tunnel without affecting any buildings.

Motorists will still be able to use Center Drive, he said. There might be, however, some lane shifting to accommodate construction.

"It's a challenging project. There are a number of utilities in the area that we will have to work around," said Moses. "It's going to take about three years to build, but it will give us great reliability for the next 80-100 years."

Parking garage renovations

Several of NIH's multi-level parking (MLP) garages have undergone or are undergoing repairs and restoration, said Lenin Andrade, project officer in the ORF Office and Leased Facilities Design and Construction Branch.

The garages on campus were built at different times, so their condition and age vary. However, every garage needed maintenance, he said. They are deteriorating due to lack of maintenance and poor drainage. Crews have completed concrete and drainage repairs, as well as any other repair necessary to ensure the safety and structural integrity of each garage.

Currently, crews are finishing repairs to MLP-7 and 10. They began work on MLP-8 in recent weeks. The MLP-8 repairs are taking place in phases to minimize impact to employees. No more than 17% of overall spaces will be unavailable at any one time. Even with the temporary removal of parking spaces, there should still be ample parking available on the campus.

Solar Canopies on Parking Garages

Plans to install solar panels on top of several NIH parking garages, including MLP 6, 7 and 9, are underway, said Greg Leifer, chief of ORF's Energy Management Branch. During installation, the top floor of each garage will close.

These panels will provide renewable energy, offsetting approximately 2MW of electrical capacity. The array will save 3,200,000 kWh of energy and save approximately $330,000 in electricity costs each year.

Placing the panels on top of garages takes advantage of previously unusable space. Additionally, the panels will shield vehicles from the effects of sun and inclement weather.

Installation began this month and is expected to wrap up by August.

RML's Bldg. J

On the NIH Rocky Mountain Laboratory (RML) campus in Hamilton, Mont., construction workers are getting ready to pour the concrete foundation for "Bldg. J," a 55,000-square-foot building, said ORF project manager Jack Veldboom.

Bldg. J will house microscopy labs; campus security; and administrative, logistical and management teams. Its anticipated construction will take three years.

Crews recently completed another big project in Montana. Last May, a three-story, 120,000-square-foot vivarium at the Rocky Mountain Laboratories Comparative Medicine Center (RCMC) opened. RCMC's new vivarium is a centralized animal receiving and holding building that will support all biosafety levels of research throughout the RML campus and research projects on virology, bacteriology and viral diseases including work on SARS-CoV-2. The facility will provide expanded capabilities for studies with exotic species along with special imaging equipment and a multi-vector insectary.

"It was a great project and team. It went rather smoothly. It was on budget and on time," Veldboom said.

Experts Share Data on Safety of Plant-Derived Supplements

BY SUSAN COSIER

As sales of herbal supplements in the U.S. rise, the National Institute of Environmental Health Sciences (NIEHS) and its partners are working to gather data and advance testing methods to assess the safety of these products.

"Throughout history, almost every human civilization has used botanicals for different purposes," said Dr. Heather Patisaul, scientific director of the NIEHS Division of Translational Toxicology (DTT) at a recent NIEHS summit. "The mission of DTT is to improve public health through data and knowledge development that's translatable, predictive and timely. And that is the goal in partnering and working on botanicals."

NIEHS, together with the U.S. Food and Drug Administration (FDA) and the nonprofit Health and Environmental Sciences Institute (HESI), formed the Botanical Safety Consortium in 2019. The mission of this public-private partnership—which includes government agencies, academic and research institutes, private industry groups and consulting organizations—is to evaluate "new approach methods" (NAM) for use with complex botanical mixtures. The NAMs aim to use methods other than vertebrate animals in safety testing.

"Since the 1990s, NIEHS and National Toxicology Program researchers have characterized hazards associated with botanicals, such as aloe vera, ginseng and kava, using *in vivo* models," explained Dr. Cynthia Rider, a toxicologist in the NIEHS Systems Toxicology Branch. "Through the consortium and annual summit, we are working to expand the *in vitro* and *in silico* toolbox available for evaluating a botanical's toxicity and adverse effects on various biological systems."

Active ingredients in plants have been used in pesticides, pharmaceuticals and many consumer products, according to Dr. Hellen Oketch-Rabah, deputy director of the FDA Office of Dietary Supplement Programs.

The goal, she said, is to determine whether the NAM testing data yields results similar to data gathered through vertebrate animal testing.

"Once we have well-developed and validated tests," Oketch-Rabah said, "they will provide an opportunity for others to screen data-poor botanicals."

Toxicologist Dr. Cynthia Rider

During the last few years, nine consortium working groups have evaluated a handful of botanicals, including aconite, ginseng, milk thistle and oleander. The groups gathered active ingredient and toxicity information, created extracts to learn the chemical profile of each botanical and performed tests to determine methods that could be used to evaluate safety.

At the summit, the working groups presented snapshots of their findings, such as whether certain botanicals resulted in toxic effects. The information will be available in the Chemical Effects in Biological Systems (CEBS) database (https://cebs.niehs.nih.gov/cebs/) for all to review and cite in publications.

As the data-gathering phase ends, the Botanical Safety Consortium plans to facilitate robust evaluation of botanical ingredients, as well as to test and predict outcomes on human health.

"What we want to do is enhance our battery of tests," said Connie Mitchell, senior scientific program manager at HESI who helps manage the consortium. "That might be adding tools to assess absorption, distribution, metabolism and excretion, adding testing methods or looking at various other preparations of botanicals."

Botanical safety resources

To learn more about botanical safety, see the Botanical Safety Consortium's site: https://bit.ly/3Ct5Fem.

Also see:

- NIH's Office of Dietary Supplements botanicals fact sheets: https://go.nih.gov/zFu2oFX
- The FDA's dietary supplements page with information for consumers, industry and the media: https://bit.ly/3Q1Hs1C
- The National Toxicology Program Botanical Dietary Supplements Program fact sheet: https://go.nih.gov/vVFVUs0.

Members of the Botanical Safety Consortium gathered at NIH for the recent summit.

PHOTO: STEVE MCCAW/NIEHS

NCI Selects New Communications Director

Nancy Siebert Murphy

Nancy Siebert Murphy has been named communications director (CD) of the National Cancer Institute.

As associate director for communications planning and coordination in NCI's Office of Communications and Public Liaison (OCPL), Murphy formed, built and led the "communications leads" team, establishing and maintaining strong relationships with NCI's network of division, center, and office (DOC's) communications managers as well as with other offices across NCI.

The Center for External Affairs (CEA's) solid partnership with the DOCs and their programs empowers NCI's science and programs—harnessing an array of strategic channels such as digital content, news media, social media, blogs, speeches, the Cancer Information Service, legislative affairs, advocacy relations and staff engagement—in support of NCI's mission.

In her new role, Murphy joins the CEA leadership team, and will work to align NCI communications with advocacy and legislative affairs. She will continue to lead the NCI Communications Roundtable community to communicate the value of cancer research to the U.S. by unifying, simplifying and strengthening messaging across NCI.

Before coming to NCI in 2013, Murphy owned and operated a public relations consulting firm that developed communications strategies for public and private sector clients, including NIH, FDA and HHS. Prior to that, she had more than 15 years experiencing working in communications and public affairs.

Murphy holds a BA in journalism and political science from the University of Wisconsin-Madison. She has won several NIH awards over the years, including the NCI-OCPL Rhonda DeJoice Award for Communications Excellence.

Cancer Prevention, Screening Advances Are Saving Lives

Improvements in cancer prevention and screening over the last several decades have resulted in significant drops in mortality in five cancer types.

A recent study in *JAMA Oncology* looked at deaths from breast, cervical, colorectal, lung, and prostate cancer that were averted by the combination of prevention, screening and treatment advances. NCI researchers focused on these five cancers because they are among the most common causes of cancer deaths, and strategies exist for their prevention, early detection and/or treatment. In recent years, these five cancers have made up nearly half of all new cancer diagnoses and deaths.

"The surprise here is how much prevention and screening contribute to reductions in mortality," said co-lead investigator Dr. Katrina A. B. Goddard, director of NCI's Division of Cancer Control and Population Sciences. "Eight out of 10 deaths from these five cancers that were averted over the past 45 years were due to advances in prevention and screening."

A single prevention intervention, smoking cessation, contributed significantly to averting deaths—more than 3 million from lung cancer alone. When considering each cancer site individually, prevention and screening accounted for most deaths averted for cervical, colorectal, lung, and prostate cancer, whereas treatment advances accounted for most deaths averted from breast cancer.

The researchers used statistical models from the Cancer Intervention and Surveillance Modeling Network (CISNET) and cancer mortality data to estimate the relative contributions of prevention, screening, and treatment advances to deaths averted from breast, cervical, colorectal, lung, and prostate cancers between 1975 and 2020.

In total, the modeling showed, 5.94 million deaths were averted from these five cancers between 1975 and 2020. Of these, prevention and screening interventions accounted 80% of the averted deaths.

Contact Lenses in Youth Have Lasting Effect

NIH-funded researchers found that children who wore special contact lenses to slow progression of nearsightedness, known as myopia, maintained the treatment benefit after they stopped wearing the contacts as older teens.

The NEI-funded study, known as the Bifocal Lenses In Nearsighted Kids (BLINK), and follow-on study, known as BLINK2 published their findings in *JAMA Ophthalmology*.

Controlling myopia progression in childhood can help to potentially decrease the risks of vision-threatening myopia complications later in life, such as retinal detachment and glaucoma. Rates of myopia have been increasing in recent years with some implications that higher use of personal devices plays a role.

Myopia occurs when a child's developing eyes grow too long from front to back. Instead of focusing images directly on the retina—the light-sensitive tissue in the back of the eye—images of distant objects are focused at a point in front of the retina. As a result, people with myopia have good near vision but poor distance vision.

"There was concern that the eye might grow faster than normal when myopia-control contact lenses were discontinued. Our findings show that when older teenagers stopped wearing these lenses, the eye returned to the age-expected rate of growth," said Dr. David Berntsen, principal investigator and chair of clinical sciences at the University of Houston College of Optometry.

A teen inserting a contact lens

PHOTO: NEW AFRICA/SHUTTERSTOCK

The new study follows an original clinical trial that showed soft contact lenses designed to add high focusing power to one's peripheral vision, as well as correction for one's distance vision, were most effective at slowing the rate of eye growth, decreasing how myopic children became. Participants in the follow-up study wore high-add lenses for two years, followed by single-vision contact lenses for the third year of the study to see if the benefit remained after discontinuing treatment.

At the end of the follow up study, axial eye growth returned to age-expected rates.

"Our findings suggest that it's a reasonable strategy to fit children with multifocal contact lenses for myopia control at a younger age and continue treatment until the late teenage years when myopia progression has slowed," said follow-up study chair, Dr. Jeffrey J. Walline, associate dean for research at the Ohio State University College of Optometry, Columbus.

Single vision prescription glasses and contact lenses can correct myopic vision, but they fail to treat the underlying problem. By contrast, soft multifocal contact lenses correct myopic vision in children while simultaneously slowing myopia progression by slowing eye growth.

OTT's Rogers Retires

Karen Rogers of the NIH Office of Technology Transfer (OTT) retired in November.

At OTT, Rogers was the chief in the Licensing Compliance and Administration Unit. She worked for the government for more than 40 years and OTT for 19 years.

Rogers began her federal career at the then-Alcohol, Drug Abuse, and Mental Health Administration as a student intern. She then moved to NIH, serving in administrative positions, including management of the NIDDK Advisory Board.

Dr. Karen Rogers

Rogers then worked as a civilian for the U.S. Air Force for 10 years, including a ground launch cruise missile base in Belgium. She returned to NIH, where she worked with the Office of Loan Repayment and Scholarship. She helped recruit the first cadre of Undergraduate Scholarship Program students. In 2005, she moved to OTT as the royalties administrator.

"I enjoy finding inefficiencies," she said. "Guess that is why I'm so enthusiastic about developing standard operating procedures. I also get a lot of satisfaction from helping and mentoring staff in OTT and the ICs."

Rogers wore many hats at OTT. She was acting director twice, chief of the royalties administration unit and, most recently, chief of the license compliance and administration unit. She's most proud of working with OTT staff and the NIH Technology Transfer Community to navigate the reorganization back in 2015.

Under her leadership, OTT had a 90% collection rate on average from licensees. This success has been attributed to the "welcome package" licensees and that "we reach out to the licensee's staff that are responsible for paying the royalties." Many times, the negotiator is out of the picture once the license has been executed. The high collection rate is also reflective of the hard work done by the License Compliance and Administration Unit Team.

"Do the best you can to excel at the duties you are assigned for your current position, but then always be open to accepting new challenges above your grade level," she advised.

In her retirement, she plans to spend more time with family at their cabin in West Virginia.

--Adapted from an interview with OTT's *Richelle Holnick*

Two NIH Inventors Named NAI Fellows

Dr. Peter Basser

NIH scientists Dr. Peter Basser and Dr. Carlos Zarate, Jr. have been selected as 2024 National Academy of Inventors (NAI) Fellows.

Basser is senior investigator in the Section on Quantitative Imaging and Tissue Sciences at the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development. He is known for the invention, development, and clinical implementation of MR diffusion tensor imaging (DTI), diffusion tensor "streamline tractography," and other quantitative MRI methods for performing in vivo MRI histology or "microstructure imaging."

Zarate is senior investigator and chief of the Experimental Therapeutics and Pathophysiology Branch and section on neurobiology and treatment of mood disorders at the National Institute of Mental Health. Zarate has had a prolific career researching the treatment of mood and anxiety disorders, most recently licensing an invention that led to the development of the first FDA-approved drug for treatment-resistant depression.

The NAI is a member organization comprising U.S. and international universities, and governmental and nonprofit research institutes, with over 4,000 individual inventor members and Fellows spanning more than 250 institutions.

The 2024 Fellows hail from 135 research universities, governmental and nonprofit research institutions worldwide and their work spans across various disciplines. They are not only phenomenal researchers holding prestigious honors and distinctions but are also incredible inventors who collectively hold more than 5,000 issued U.S. patents. Their innovations are making significant tangible societal and economic impacts today and will well into the future.

Dr. Carlos Zarate

For more information about the NAI, see: https://bit.ly/4gznlmq.

NIH Remembers CSR's Krishnan

Dr. Krish Krishnan, formerly of the Center for Scientific Review (CSR), passed away on December 29. He was 82.

Krishnan retired in 2013 from NIH, where he had been a scientific review officer (SRO) in CSR. He coordinated study sections and special emphasis panels related to metabolic diseases. His focus on diabetes as an SRO and in his own research stemmed in part from family history with the disease.

After earning a B.S. in chemistry from the University of Madras in southern India, Krishnan graduated first in his class with an M.S. from the University of Baroda, then

received a Ph.D. from the Indian Institute of Science, both in biochemistry. He was the only person in his family of three brothers (the other two are engineers) who aimed for study in the United States.

In 1972, Krishnan was accepted into the John Fogarty International Fellowship Program at NIH and worked in labs at the National Heart, Lung, and Blood Institute (NHLBI) and the National Institute of Neurological Disorders and Stroke (NINDS).

Dr.. Krish Krishnan

At NHLBI, his research focused on the role of second messengers in pathophysiological processes in tissue and cellular systems. He stayed on as a senior staff fellow at NINDS from 1978 to 1984, when his research shifted to understanding underlying mechanisms of ion channels.

A 6-month consultancy in the National Eye Institute and 1-year stint with NHLBI gave him, as he had described it, "a wonderful opportunity to see what extramural was like."

In 1986, Krishnan joined the then Division of Research Grants (now CSR). He administered the metabolism study section for more than 15 years, when he took over special review study sections related to endocrinology, metabolism, nutrition and reproductive sciences. The portfolio included small business grants, fellowships, applications that would have conflicts of interest if reviewed in chartered study sections and continuous submissions.

Krishnan served on a number of NIH committees, including the peer review best practices, seminar and employee advisory committees in CSR. For 4 years, he was on the diabetes mellitus interagency coordinating committee organized by NIDDK.

Krishnan is survived by his wife Lakshmi, brother N. Lakshmanan, brother-in-law K. Chandrasekhar and nephew Dr. Ashwin Kumar Mani and their families.

CSR's Bengali Mourned

Dr. Zakir Hussain Bengali, former chief of the biochemical sciences review group at NIH's Center for Scientific Review (CSR), passed away on November 28, 2024. Bengali had served at NIH in various capacities for nearly 30 years. He was 84 years old.

Bengali was born in Mumbai, India. He earned his master's degree in microbiology from the University of Mumbai. He then moved to the U.S. and enrolled in a graduate program in biology at the University of Rochester, NY and received his Ph.D. in 1974.

He and his wife, Kathleen, moved to Maryland, where Bengali pursued a Fogarty Fellowship at the National Cancer Institute. They bought and renovated an old house in rural Frederick, where he lived for the rest of his life. He joined the health science administration and served in various capacities at NIH. His most extended service was at CSR, where he was first a scientific review administrator (SRO) and later promoted to chief of the Biochemical Sciences Review Group.

Dr. Zakir Hussain Bengali

As an SRO, Bengali conceived and helped design an electronic review program named DART to facilitate the grant review process, including searching for the most qualified reviewers and preparing summary statements for applicants. This system remained in use for some years until more sophisticated versions superseded it. Begali was recognized for his valuable contribution with a Director's Award.

After retiring from NIH, Begali became the vice president of research at Shriners Hospital in Tampa, Fla. Returning home to Frederick, he became interested in education and was elected in 2012 to serve for four years on the Frederick County Board of Education.

Bengali had multiple interests besides science. He loved classical music and attended operas and music festivals. He made many friends, transcending ethnic, religious and national boundaries. He was a longstanding member of the Unitarian Universalist Congregations of Frederick, where he once served as president.

For the last 15 years, Bengali battled various health issues that progressively limited his physical movements, but his cognitive faculties remained unimpaired. He spent his last months in an assisted living facility in Frederick but continued to be interested in socializing with other people. He delivered talks on history for residents of the facility and showed movies.

The end came unexpectedly and suddenly on Thanksgiving Day. A memorial service is planned for sometime in the spring.

Bengali is survived by his wife, a son and a daughter.

VOLUNTEERS

Lupus Study Is Enrolling Participants

People with systemic lupus erythematosus (SLE) are at risk of developing inflammation in their blood vessels. A research study at NIH is testing if the dietary supplement, Nicotinamide Riboside (NR), can improve immune system and blood vessel function and inflammation in people with SLE. Healthy volunteers will also be invited to enroll to serve as study controls. If interested, contact the Office of Patient Recruitment at 866-444-8810 or ccopr@nih.gov. Refer to study #001621-H. To learn more: https://go.nih.gov/GyIFtVv.

Gum Health Study Seeks Volunteers

Researchers at the Clinical Center seek adult healthy volunteers to join a study about gum health. Researchers want to learn how a person's immune system affects the health of the mouth. If interested in participating, contact the Office of Patient Recruitment at 866-444-8810 or email ccopr@nih.gov. Refer to 12-D-0100. Also see: https://go.nih.gov/TEaUI4z.

DOHS AND THE BASELINE PROJECT

Building Safety into Lab Design Can Reduce Construction Headaches

BY PATRICK SMITH

Picture it: The new laboratory is finally finished. After months—or even years—of planning, design and construction, a gleaming new research space is, at long last, ready for occupancy.

But wait. What's that smell? And is that chemical fume hood sitting a little too near that flammable cabinet? Is the top of that biosafety cabinet too close to the ceiling?

These are the type of scenarios that Division of Occupational Health and Safety (DOHS) Deputy Director CAPT Derek Newcomer, Senior Industrial Hygienist Roy Deitchman and their colleagues are working to avoid.

Deitchman and Newcomer are leading a project they've called "Baseline" that adds additional safety and environmental checks to the NIH's building-commissioning process. The voluntary program is designed to set an initial, pre-occupancy standard—or baseline—for such lab elements as air quality, room pressurization, fire safety, hazardous chemical storage and more.

"The word 'base' refers to the safety aspects of the process—*b*uilding *a*ssessment of *s*afety *e*lements," Newcomer explained. "And 'line' includes the environmental issues—*l*ighting, *i*ndoor air quality, *n*oise, and *e*rgonomics."

Above, l to r, Division of Occupational Health and Safety (DOHS) Deputy Director CAPT Derek Newcomer and DOHS industrial hygienists Scott Robbins and Roy Deitchman talk shop. Newcomer and Deitchman are leading a project called "Baseline" that adds additional safety and environmental checks to the NIH's building-commissioning process. Below, an NIH lab under construction

"Most of the time, there's been no final safety-specific inspection prior to opening a new lab," Deitchman said. "The time between the design phase and the lab's opening is what we're targeting for Baseline."

Design and specification changes are common during the construction or renovation of laboratory space, said Newcomer. A seemingly small adjustment here or there, though, can lead to the kinds of downstream problems that cause headaches near the end of the project. Bringing safety and environmental team members into the process before the lab begins operations can save money, prevent delays and give the lab's occupants the peace of mind that their work space is safe and healthy.

"Our facilities have dynamic and complex infrastructure that's often unique to NIH," Newcomer said. "The contractors who build our labs are great. But sometimes our standards might be new to them. Baseline provides a kind of safety net to make sure everything gets a last cross-check for safety hazards" before lab operations begin.

For instance, Baseline improves the indoor air quality (IAQ) standard for laboratories by measuring the overall indoor environmental quality (IEQ), which includes lighting and noise measurements. Studies have demonstrated that good IEQ promotes productivity while decreasing absenteeism and potential liability for building designers and owners.

The new program isn't limited to laboratory design and construction. Office space also has safety and environmental standards.

"Baseline really extends beyond laboratories to any space where people work," said Deitchman.

Deitchman, Newcomer and the DOHS team emphasize that their additional involvement shouldn't present a barrier.

"The best time for us to be involved is when it's not a disruption," Newcomer said. "We're mindful of the pressure that contractors and building managers are under. We're trying to identify any concerns while the project is still under the contractor's control. Ideally, DOHS' Safety Engineering group gets involved as soon as the contract is awarded."

Deitchman said participation in Baseline will not lead to occupancy delays.

"There's always a concern that doing additional surveys could mean findings and delays," he said. "But that's not the intent of Baseline. This is about finding potential problems sooner, so we can deal with them before they cause delays or regulatory problems prior to occupancy and use of the space."

If you're managing a construction project at NIH and would like to consult with the DOHS team, call 301-496-2960 or email Newcomer at newcomerd@nih.gov.