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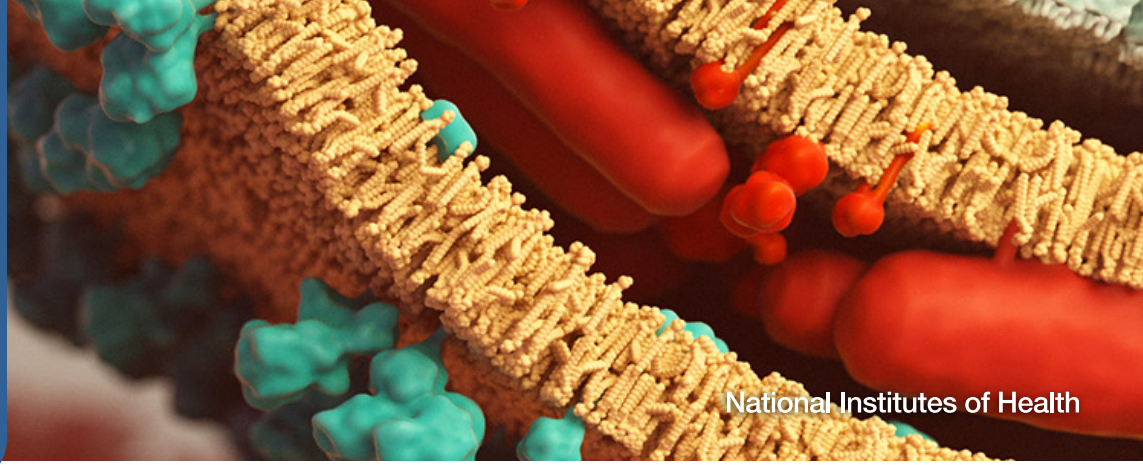


'Gratitude Tour' Checks Out NIH Library, Honors Staff for Support During Pandemic

BY LIYA TADESSE

At the height of the Covid-19 pandemic, when the majority of NIH'ers had been sent home to telework, Derek McDowell, a reference assistant in the NIH Library, was on campus wearing a face mask and looking at an enormous line of people, also in masks, waiting to get the antigen tests he was handing out. That's when the enormity of his job and that of his colleagues hit him.

"As I saw all those dedicated NIH staff in those long lines expressing gratitude to us for being in-house to distribute those tests, it made all the concerns, all the fears—any

The NIH Library's Alicia Livinski and Derek McDowell recall working on site during the height of the pandemic.

PHOTO: CHIA-CHI CHARLIE CHANG

apprehension—it made it all worth it, because I recognized the dedication they showed to us, we now needed to show to them," he said.

In a gathering that underscored the unwavering dedication of NIH Library staff during the pandemic, NIH leaders met with the group recently to express their gratitude

SEE **GRATITUDE**, PAGE 4

New Democrat Coalition Tours Three NIH Labs

BY DANA TALESNIK AND LIYA TADESSE

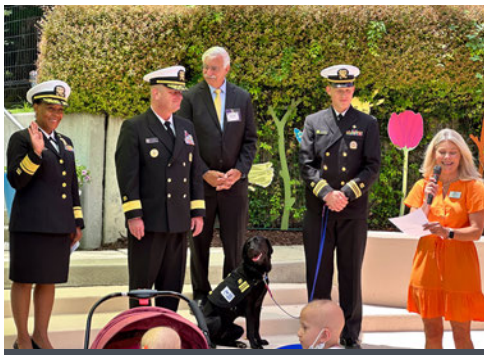
Nine members of the New Democrat Coalition visited NIH to tour the Clinical Center (CC) on July 17. The congressional delegation learned about several cutting-edge research initiatives and gained insight into how new technologies are poised to challenge today's pressing health issues.

NIDA Director Dr. Nora Volkow discusses addiction.

PHOTO: CHIA-CHI CHARLIE CHANG

Some were visiting NIH for the first time. All had a vested interest in health care and

SEE **CONGRESSIONAL**, PAGE 6



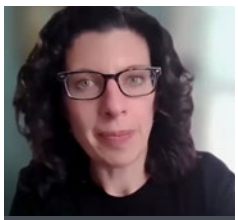
Canine Lt. Cmdr. Abigail, PHS mascot, recently deployed to Children's Inn. See story, p. 12.

ALSO THIS ISSUE

Ranney Advocates Public Health Approach to Prevent Gun Violence

BY DANA TALESNIK

Stories of gun violence blanket the news almost daily. As deaths and injuries from firearms continue to climb, potential solutions often get stymied by a politically charged climate. NIH-funded researchers are collaborating on a range of interventions to address the pervasive problem of violence.



Dr. Megan Ranney

Dr. Megan Ranney regularly sees the effects of violence firsthand as an emergency department (ED) physician. "I take care of victims of violence every day on every shift," said Ranney, incoming dean of Yale School of Public Health, who spoke at a recent

SEE **RANNEY**, PAGE 8

Fogarty Welcomes International Fellows

BY MARIAH FELIPE

For the first time since 2019, the Fogarty International Center (FIC) hosted the latest cohort of fellows and scholars from the Launching Future Leaders in Global Health Research Training Program in-person on NIH's Bethesda campus. The event, co-sponsored by Fogarty and several other NIH institutes, marked the 20th anniversary of the program known as "LAUNCH."

Participants from every corner of the globe convened at the Ruth Kirschstein Auditorium in the Natcher Conference Center for a week-long orientation, during which they received insights from distinguished alumni, principal investigators and NIH leadership.

Warm Welcome

Fogarty Acting Director Dr. Peter Kilmarx opened the event by tracing his career

SEE **LAUNCH**, PAGE 10

Greenberg Early-Career Investigator Lecture Set

Sept. 27

Dr. Akhila Rajan, associate professor at Fred Hutch Cancer Center in Seattle, will present the Judith H. Greenberg Early-Career Investigator Lecture on Wednesday, Sept. 27 at 1 p.m., in person at the main NIH campus in Bldg. 31, 6C Rm. A&B, and virtually via Zoom. The lecture is open to everyone in the scientific community.

Dr. Akhila Rajan
PHOTO: ROBERT HOOD/FRED HUTCH

During her talk, titled "Lard of the Flies: Investigating How Fat Cells Communicate with the Brain," Rajan will describe her research using fruit flies to investigate how fat cells control brain function, including how fat-sensing neural circuits maintain body weight and how high-sugar diets disrupt feeding behavior and response to injury in nerve cells.

After a 30-minute lecture, Rajan will answer questions about her research and career path.

This annual series highlights the achievements of early-career grantees of the National Institute of General Medical Sciences (NIGMS). It is designed to introduce students and other early-career scientists to cutting-edge research and to inspire them to pursue careers in the biomedical sciences.

Established in 2016, the series honors former NIGMS deputy director Greenberg, who retired in 2020 after 45 years of service to NIH.

For details and registration information, visit https://go.nih.gov/nMDyEyp. Participants requiring sign language interpretation and/or other reasonable accommodation should submit a request at https://go.nih.gov/8GRc1Im at least 5 days prior to the event.

Input Sought on Updating NIH Mission Statement

NIH recently issued a Request for Information (RFI) inviting feedback on a proposed update to the NIH mission statement. It's important that the statement accurately reflect NIH's goal of turning scientific discoveries into better health for all.

The RFI is now open and will close on Friday, Nov. 24. Input is sought broadly from NIH staff, NIH-funded institutions, scientific and professional societies, the clinical practice community, advocacy organizations and the public.

Review the RFI at https://go.nih.gov/nwCTULw and share your input at https://go.nih.gov/yTYawNB.

Among conference participants were (from l) NIH Acting Director Dr. Lawrence Tabak, Head of Contracting Activity Diane Frasier and Deputy Director for Management Dr. Alfred Johnson.

EQUITY, INCLUSION IN RESEARCH

Conference Seeks Models for Increasing Participation in Underserved Communities

NIH recently sponsored a conference, "Collaborative Models for Building Equality and Equity in Research." Attendees included representatives from several divisions of the Department of Health and Human Services (HHS), NIH institutes and centers, other federal agencies, private industry and educational organizations, including historically Black colleges and universities (HBCUs) and minority-serving institutions (MSIs).

The conference aimed to foster dialogue and collaboration among research leaders, program managers, diversity directors, industry stakeholders, advocates and policymakers. It served as a platform to discuss the barriers HBCUs and MSIs face in accessing agency programs that benefit underserved communities.

The conference also sought to facilitate these institutions' increased participation in the medical research enterprise, thereby advancing educational equality, excellence and economic opportunities in research.

The event was organized by the NIH Path to Excellence and Innovation (PEI) 2.0 Initiative, a program designed to equip HBCUs with the resources and skills necessary to compete for NIH contracts and to effectively diversify their revenue streams.

NIH senior leadership, including Dr. Lawrence Tabak, acting NIH director; Dr. Tara Schwetz, acting principal deputy director; Dr. Alfred Johnson, deputy director for management; and Diane Frasier, head of contracting activity and director of the Office of Acquisitions and Logistics Management, offered remarks. Participants also received greetings from Kevin Anderson, secretary of Maryland's department of commerce.

Additionally, U.S. Rep. Robin L. Kelly (D-IL) and U.S. Sen. Chris Van Hollen (D-MD) sent video messages supporting the purpose and timeliness of the conference. Rear Adm. Felicia Collins, HHS assistant secretary for minority health, reinforced the department's commitment to advancing racial equity and support for underserved communities in medical research.

The conference featured six sessions moderated by distinguished research community members. The first session, facilitated by Roslyn Moore, deputy director of programs in HHS's Office of Minority Health, delved into President Joe Biden's Executive Orders on advancing racial equity.

Other sessions explored collaborative research models, sharing experiences from federal, state, local and industry levels. Breakout groups examined community engagement, workforce development, capacity building, public-private partnerships, innovation, economics and entrepreneurship, highlighting programs such as the Rapid Acceleration of Diagnostics for Underserved Populations (RADx-UP) and Morehouse Pathways.

The conference closed with synopses of posters and breakout sessions and a look at future opportunities and legislative and federal policy initiatives. Rep. Kweisi Mfume (D-MD) concluded with keynote remarks.

Dr. Alicia Fernandez

NIMHD Seminar Looks at Language Barriers and Health Care Disparities

Sept. 21

For Hispanic Heritage Month, which is celebrated annually from Sept. 15 to Oct. 15, the NIMHD Director's Seminar Series will feature Dr. Alicia Fernandez, professor of clinical medicine, University of California, San Francisco, on Thursday, Sept. 21 at 2 p.m. ET. Her virtual talk will be, "How Language Barriers Contribute to Health Care Disparities."

Visit https://go.nih.gov/SMCJ6aJ to learn more about seminars sponsored by the National Institute of Minority Health and Health Disparities.

'Lifelong Learning' Institute Offers NIH Alums Teaching, Enrichment Opportunities

Dr. Phil Grimley lectured to his largest post-NIH audience mid-year in 2020. That's when he began teaching an introductory course on viruses for the lay public at Osher Lifelong Learning Institute at Johns Hopkins University. He'd been enjoying the benefits of Osher before then as a student himself, after entering retirement. When the Covid-19 pandemic ramped up, so did the popularity of his class, which was still being conducted on site at the time.

"It was a way for me to stay abreast of the latest journal articles," said Grimley, emeritus professor at the Uniformed Services University of the Health Sciences and former NIH investigator in the Laboratory of Pathology at the National Cancer Institute (NCI). "I found it very enjoyable and mentally stimulating, to interact with the students and keep myself up to date on things."

Longtime friends, NIH colleagues and now Osher members Shapiro (l) and Dr. Peter Lemkin, circa the mid 1980s.

Osher, an educational program for retired and semi-retired adults, began in 2001 via a grant by the Bernard Osher Foundation to extend the "Senior College" curriculum at the University of Southern Maine. The foundation currently funds 125 lifelong learning programs on university and college campuses across the country, with at least one grantee in each of the 50 states and the District of Columbia.

"Participants in our program learn from the experts and enjoy an array of educational and social opportunities at our various in-person [Maryland] sites in Montgomery County, Columbia and Baltimore or our live online classes via Zoom," said Susan Howard, Osher JHU program director.

Dr. Bruce Shapiro (l), Dr. Phil Grimley and Susan Howard

"As an NIH scientist, I was driven to learn about new things," said former NIH investigator Dr. Peter Lemkin, who retired from NCI in 2007. "In the Osher program, I've had the opportunity to learn about many new areas besides science, including economics; politics; history of many parts of the world as well as political movements; music genres such as classical, opera, jazz, musical theater, history of music and Strathmore artists in residence…also, art history, history of film, international relations, law enforcement in Montgomery County, energy and climate change, and much more. There is less pressure as a student in a lifelong learning program because you are there for the joy of learning new things, not taking classes for credit."

Some Osher teachers are Osher students who were experts and leaders in their fields, coming from organizations in the D.C. Metro area, he explained. Other instructors include JHU staff and local experts with a wide range of experience.

"Osher is not just about the courses," Lemkin said. "You also have the opportunity to make new friends in and out of classes, at lunch and at some of their special events."

Dr. Bruce Shapiro, who retired in 2021 and is currently a scientist emeritus in NCI's RNA Biology Laboratory, recently teamed up with one of his Osher instructors from last year. They submitted a proposal to teach a joint Osher course next spring.

"I firmly endorse the idea of Osher as a way to learn new things, including those that were out of my field of view and to fill in gaps of things that I was familiar with," Shapiro said. "It is a way to keep your mind sharp and to provoke interesting discussions on a wide variety of subjects."

To learn more about Osher JHU, which will offer a wide range of courses both in person and online this fall, visit http://tiny.cc/lqoavz. R

Video Available in NIDA's 'At the Intersection' Series

Another installment is now available in "At the Intersection: Stories of Research, Compassion and HIV Services for People Who Use Drugs," a video series by the National Institute on Drug Abuse (NIDA).

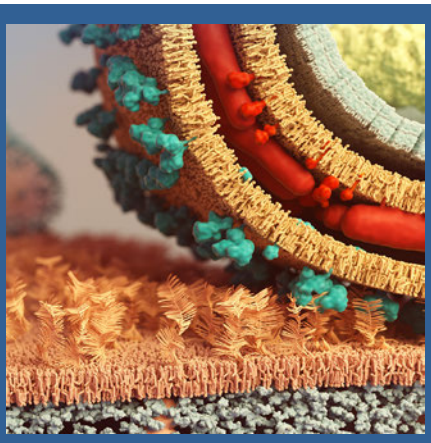
Peer support specialists like Chetwyn "Arrow" Archer are people with lived experience of substance use who help others navigate harm reduction tools, substance use treatment and other health care and social services.

Arrow works with Dr. Hansel Tookes at the IDEA Exchange, a syringe services program in Miami. He has helped many IDEA participants and community members connect with lifesaving care and tools, such as the opioid overdose reversal medication, Narcan (naloxone nasal spray).

Chetwyn "Arrow" Archer

Tookes was a 2021 recipient of NIDA's HIV/AIDS Research Avenir Award for a project designed to leverage telehealth-enhanced services to engage people who inject drugs into HIV care.

To view the Arrow video and see the full series, visit https://go.nih.gov/kKuz9RI.



ON THE COVER: *The 2023 NIH Research Festival image features an extracellular enveloped version of the mpox virion.*

IMAGE: NIAID/RTB

The NIH Record

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NIH National Institutes of Health
Turning Discovery Into Health

Gratitude

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and recognize the exceptional contributions that shaped the agency's response to the global health crisis.

Held in the library's training facilities in Bldg. 10, the event brought together a cross-section of individuals who played pivotal roles in ensuring that critical information was disseminated swiftly and accurately, reaching both the NIH community and the public. The gathering aimed to highlight the profound impact made by NIH Library staff as they stepped up to support a multitude of critical initiatives.

Colleen McGowan, director of the Office of Research Services, set the tone by acknowledging the incredibly wide range of services and resources the library provides and its staff's collective effort to maintain the same high levels—even during the pandemic.

NIH Acting Principal Deputy Director Dr. Tara Schwetz (r) and Colleen McGowan, director of the Office of Research Services (second from r) share a light moment with NIH Library staff at the gratitude event.

From 3D printing and translation services to bioinformatics, document editing and emergency technology, "this organization is nimble and it's dedicated and we want to thank you," McGowan said. "This event is an opportunity to celebrate the remarkable dedication and invaluable contributions of our library staff during one of the most challenging times in recent memory."

NIH Acting Principal Deputy Director Dr. Tara Schwetz added her appreciation, "I want to thank each one of you for the many, many hours you have spent helping to keep research moving forward."

At the event thanking the NIH Library staff are (from l) Nancy Muir, Dr. Jessica Chertow, Candice Townsend and Monica Valencia.

PHOTOS: CHIA-CHI CHARLIE CHANG

Schwetz, too, recalled the extraordinary effort NIH Library staffers made early in the pandemic, when they helped "distribute over 34,000 Covid tests—more than 15,000 on day one in 2021, when the tests were still hard to get. That's incredible!"

Also on hand to appreciate those who work in the NIH Library were Dr. Jessica Chertow, ORS associate director of scientific resources, and NIH Deputy Director for Management Dr. Alfred Johnson, who joined remotely from Bldg. 1.

In addition to McDowell, other staff members shared their experiences.

Monica Valencia, who leads a translation team, recounted the early days of the pandemic, when the demand for translated materials surged. Some specialty and scientific terms didn't even exist in some languages, she said.

"As Covid-19 materials started to be created, we were flooded with requests, not only for translations, but also for protocol consents and communication guidance," she recalled. The team's role in translating critical documents ensured that vital information reached diverse audiences and facilitated clear communication during an uncertain time.

Alicia Livinski, an informationist, spoke about the NIH Library's ever-growing workload and the deluge only got bigger.

"My relationship with researchers grew even closer during the pandemic, as I provided them with essential information that shaped their research proposals and studies," Livinski explained. She highlighted the library's role as a dynamic and responsive resource in the research community.

Candice Townsend, a branch chief and new employee who joined the library during the pandemic, expressed admiration for her colleagues' resilience and adaptability during challenging times.

"I saw so many staff members together hugging, fist bumping and just happy to be together," she said, describing the occasions when coworkers reunited after long periods of telework and isolation. "And as a new employee, that was just so telling about this community and how much everyone cared about each other."

As the event drew to a close, NIH Library Director Nancy Muir emphasized the collective spirit and commitment that define her staff.

"Your dedication, resilience and unwavering focus on mission have been the driving forces behind our response to the pandemic," she said, echoing sentiments expressed throughout the event. "We hear time and again about how customer-focused you are and it shows here today as we've heard from everybody. Whether it's your area or not, you're trying to get the answer for that person, no matter what the question is. But most important, and what I've seen here today, is the support you have for one another. Whatever happens, you pitch in and make it work...thank you for [all] you do."

Schwetz (seated, fourth from l) and McGowan (seated, c) and the staff of the NIH Library

Triglycerides: A New Frontier in Detecting, Treating Disease

In recent years, researchers have been studying whether measuring triglycerides—tiny fat particles that support the structure of cells and metabolism—in low-density lipoprotein (LDL) cholesterol could improve risk predictions for cardiovascular disease and lead to new treatments.

Studying ways to improve predictions and treatments could potentially benefit one in four American adults who have elevated triglycerides and provide novel therapies for people with inherited metabolic disorders.

As a first step to exploring therapies to lower dangerously high triglyceride levels, Dr. Anna Wolska, a scientist in NHLBI's Lipoprotein Metabolism Laboratory, developed a peptide, or tiny molecule, that could lower triglyceride levels in mice by more than 80% within a few hours.

Researchers from the Lipoprotein Metabolism Lab, include Dr. Anna Wolska (middle row, c) and Dr. Alan Remaley (seated, c).

"This peptide is unlike any molecule I've seen before," said Dr. Matt Devalaraja, founder of Protean Bio. "If it behaves anything close to what it does in mice, we have a drug in here."

With support from the NIH Small Business Innovation Research program, Devalaraja received a $2 million grant to launch studies to investigate how the peptide could treat acute pancreatitis, an inflammation of the pancreas that can result from high triglyceride levels.

In about four years, Devalaraja envisions the therapy will be ready to test in a small phase 2 study with patients. In the meantime, he and the researchers will continue to study the peptide in the lab and through a preliminary, phase 1 "proof-of-concept" study.

The hope is that people ultimately could take the therapy as an oral pill and see their triglyceride levels fall within hours. For instances when a person needs hospital care, this type of treatment could be life-saving.

Triglyceride levels also help physicians predict which patients with acute pancreatitis will experience multi-organ failure and require intensive care. For every 10 patients with severe acute pancreatitis, about four experience organ failure. Among these patients, about one dies. Due to extreme triglyceride levels, the pancreas starts to shut down and sets off a series of inflammatory responses.

"You just instantly make very high triglyceride levels, that are blocking the pancreatic vascular system, disappear," Devalaraja said about the best outcome for the therapy. "Then the patient survives."

Devalaraja explained that while basic scientific discoveries like these unite researchers, their real joy comes from thinking about how findings from the lab could be translated into therapies to help patients. Especially those, like people with severe acute pancreatitis, who have limited treatment options. While larger phase 3 trials for this treatment are still years away, the researchers remain optimistic about the peptide and molecules like it.

As a precursor to this research, Dr. Alan Remaley, an NHLBI senior investigator, and Wolska have been studying ways triglyceride levels could potentially improve cardiovascular disease risk predictions.

On July 25, at the American Association for Clinical Chemistry's annual conference, Wolska received a distinguished abstract award for, and presented findings about, using a new equation that the team developed based on the standard lipid panel for estimating LDL triglyceride content.

"We aren't at the end of the journey," said Remaley. He explained false peaks or summits can often appear in research. "We can see the top of the mountain—we think."

Faces Behind the Discovery

BY AMBER SNYDER

Dr. Anna Wolska

An "up and coming star," according to Polish Cultural Institute New York, and one of the Polish Forbes' Women "23 Women to Watch in 2023," NHLBI's Dr. Anna Wolska is making strides both within and outside the lab. Wolska is a staff scientist in the Lipoprotein Metabolism Laboratory run by NIH senior investigator Dr. Alan Remaley.

Wolska began research in lipoprotein metabolism as a student at the Medical University of Gdansk in Poland. There weren't many opportunities to continue her research post-graduation, though, so she started emailing scientists she had cited in her Ph.D. thesis. One person she contacted in the U.S. was Remaley, but she didn't realize she had emailed an NIH investigator until he replied.

"He responded right away," Wolska recalled. "I was [so excited I was] jumping up and down in my apartment."

She first came to Remaley's lab as a volunteer funded by an International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) grant in 2014 and then stayed as a postdoc in 2015, progressing to a research fellow in 2020 and most recently a staff scientist as of 2021.

"I try to run my lab like a democracy," Remaley said. "A lot of credit belongs to the [lab members] and I just help empower them."

Through this system of freedom and support, Wolska developed a peptide that lowers triglyceride levels, as well as an equation that uses data from the standard lipid panel to calculate low-density lipoprotein (LDL) triglycerides.

LDL cholesterol is currently used to calculate atherosclerosis cardiovascular disease risk, but Wolska's research found that LDL triglyceride levels might be more accurate predictors.

Fifty-plus years of eminent NIH investigators associated with the lipoprotein metabolism lab have made these discoveries possible. "This research is multigenerational," Remaley said, beginning in the 1950s (at what was known then as the National Heart Institute) with Dr. Donald Fredrickson, who would later serve as NHLBI scientific director and ultimately NIH director. Scientist Emeritus Dr. Edward Korn, another former NHLBI scientific director, discovered lipoprotein lipase, the key enzyme that hydrolyzes triglycerides.

"One day, I'll pass the baton to [Wolska] or someone else," Remaley said, adding that basic science works because many generations of scientists continue to improve upon their predecessors' knowledge.

"It's just incredible what we can do here," Wolska added. "[NIH] really is the best place to do research."

Congressional

CONTINUED FROM PAGE 1

were eager to learn more about the latest research into cancer, mental health and addiction.

"It's an opportunity for us to get to know what goes on at NIH, get a tour and speak with leadership," said Rep. Terri Sewell (D-AL), who chairs the Health Care, Substance Use and Mental Health Task Force.

"Substance use and mental health disorders are a big priority for me to address," added Rep. Brittany Petterson (D-CO), co-vice chair of the task force. "We have one of the highest suicide rates in Colorado." She also noted the importance of sustained support for NIH amid the ongoing budget negotiations. "It's really important for Congress to be here to be reminded of what we're fighting for."

Several members come from a science background. Rep. Yadira Caraveo (D-CO), co-vice chair of the task force, is a pediatrician who underscored the need for investments in basic and translational science. Rep. Sean Casten (D-IL), who has a degree in molecular biology and biochemistry, noted his first job was in a colon and breast cancer lab.

NIH Enterprise—an Overview

The group began the tour in the CC Medical Board Room, where they learned about the inner workings of NIH from leadership. NIH Deputy Director for Management Dr. Alfred Johnson traced NIH's evolution from a one-room laboratory to the expansive research complex it is today.

Offering a snapshot of NIH's budget and the funding process, NIH Acting Deputy Principal Director Dr. Tara Schwetz said, "We make funding decisions by considering not just the scientific merit, which of course is critical, but also the scientific opportunity, the public health need and what our portfolio currently looks like."

Acting NIH Director Dr. Lawrence Tabak highlighted a few of the many contributions NIH has made to improve health. Cardiovascular disease mortality has decreased by 70% in the last six decades, for example. He also noted that cancer death rates are declining more than 1% every year. He pointed out that each 1% drop in cancer mortality saves a staggering $500 billion annually, an example of the immense impact of NIH's work on both health care and the economy.

Dr. Sarah (Holly) Lisanby, head of NIMH's noninvasive neuromodulation unit, demonstrates transcranial magnetic stimulation (TMS) therapy with the help of a volunteer.

In addition, Tabak discussed why NIH investment in rare disease research remains critical.

"If you have the disease, it's not so rare," he said. And, "there's never been a rare disease study that didn't inform [our understanding of] a widespread disease."

Tabak also emphasized the importance of diversity in NIH's research efforts. "Increasingly, I'm asked to defend why diversity matters—it's about excellence," he said.

To amplify these efforts, Dr. Marie Bernard, NIH chief officer for scientific workforce diversity, discussed UNITE, an NIH initiative addressing health disparities and fostering diversity and inclusion among the NIH workforce and the extramural research community.

Since 2020, she noted, the nation's heightened awareness of racial and ethnic disparities has fueled a determination within NIH to drive change. Through dialogue and collaboration, UNITE seeks to ensure all voices are valued toward scientific advancements that benefit all.

In trying to address today's health challenges, Bernard said, "You've got to have people coming at it from a lot of different directions and a lot of experiences."

After the briefings, the delegation rotated through three NIH labs.

New Tech Key Against Pediatric Cancer

"Our work focuses on tumors in kids and young adults in which either there's no standard treatment or the treatments

Participating in the visit are (seated, from l) Rep. Madeleine Dean (D-PA); Rep. Andrea Salinas (D-OR), Rep. Brittany Petterson (D-CO), Rep. Terri Sewell (D-AL), Rep. Yadira Caraveo (D-CO); (standing) Dr. Marie Bernard, Dr. Alfred Johnson, Rep. Sean Casten (D-NJ), Rep. Hillary Scholten (D-MI), Dr. Lawrence Tabak, Rep. Nikema Williams (D-GA), Rep. Jennifer Wexton (D-VA) and Dr. Tara Schwetz.

At left, NCI Principal Deputy DIrector Dr. Doug Lowy (r), Chief of NCI's Pediatric Oncology Branch Dr. Brigitte Widemann (second from r) and NCI's Dr. Jack Shern (c) converse with guests. At right, Volkow discusses imaging studies that show how addiction affects different brain regions.

PHOTOS: CHIA-CHI CHARLIE CHANG

have stopped working," said Dr. Brigitte Widemann, chief of the National Cancer Institute (NCI) Pediatric Oncology Branch (POB).

In the lab, Dr. Jack Shern, who heads the POB tumor evolution and genomics section, illustrated why developing effective treatments is so complicated in the subset of patients who have a relapse.

A 1-centimeter-cubed piece of tumor might have 100 million cells, he said. Treatment can kill most of those cells but the tiny percentage of malignant cells that returns is refractory.

Shern's lab does genomic sequencing on tumors to inform and improve treatment. Thanks to new technology, his lab now can get more detailed data using single-cell sequencing.

He described the process: A bar-coded bead goes into a droplet of oil in a microfluidic device. Researchers then feed in cancer cells, one at a time, into that same oil drop. "It ends up in a conical tube that looks like salad dressing," he said.

"We can now tell differences between sub-populations of cells," he said. "I'm excited about the possibility of understanding these diseases in a whole new way."

Support Essential in Recovery

On a second tour stop, Dr. Nora Volkow, director of the National Institute on Drug Abuse (NIDA) and senior investigator in the National Institute on Alcohol Abuse and Alcoholism, described drug addiction as a brain disorder. She shared ongoing research that explores the potential of stimulating or inhibiting specific brain regions to diminish cravings and facilitate the path to recovery.

In studies conducted in Volkow's lab, MRI and PET scans have revealed significantly reduced activity in the prefrontal areas of the brain among individuals with drug addiction. These regions play a crucial role in executive function and decision-making, shedding light on the neurological basis of addiction's impact on behavior.

This lab visit proved particularly poignant for Rep. Madeleine Dean (D-PA), who raised concerns about the devastating impact of the fentanyl crisis in her state. She also shared a personal connection.

"I have a son who is 10 years in recovery from opioid addiction," she said. "I'm hoping in 10 more years that a lot more will be learned. How do we interrupt the overdose death rate now?"

Volkow responded, "The reality is, people who have substance use disorder can recover...it's not going to happen overnight. You need to provide them with continuous support just as you do for other chronic medical conditions."

Volkow also highlighted the need for a health care system that addresses addiction at various stages, from early initiation to relapse prevention. Community and social support can further enhance chances of long-term recovery.

Research Gaps Addressed in Youth Mental Health

In a mental health lab, the delegation witnessed a volunteer receiving a non-invasive therapy to stimulate the brain. National Institute of Mental Health Director Dr. Joshua Gordon introduced Dr. Sarah (Holly) Lisanby, head of the noninvasive neuromodulation unit, who demonstrated transcranial magnetic stimulation (TMS) therapy.

The technology enables researchers to study brain function and investigate the roots of psychiatric and addiction disorders toward developing targeted therapies.

Using a robot to navigate the magnetic coil to specific brain regions, the team highlighted the noninvasive nature of TMS, inducing weak electrical currents in the brain to observe and record the effects. The demonstration, which produced a subtle movement in the patient's hand, illustrated TMS precision and safety.

Lisanby discussed ongoing trials of TMS for autism spectrum disorder and depression in adolescents. Currently, TMS is approved by the Food and Drug Administration to treat depression, obsessive compulsive disorder, smoking cessation and migraine in adults.

"But," she said, "we know there's an important unmet need for youth with mental health and substance use disorders, so we're excited to be addressing those research gap areas."

As the delegation departed, they had seen firsthand the potential of transformative advances in mental health, substance abuse and cancer, and they left with a deeper understanding of the impact of NIH research. R

Ranney

CONTINUED FROM PAGE 1

seminar hosted by NIH's Office of Behavioral and Social Sciences Research. "As a health care provider, I'm deeply aware of the ways in which our country's epidemic of violence affects us."

Beyond a Criminal Justice or Legislative Problem

Violence skews by gender and race. Gun violence is most common among men. Minority populations, particularly Black men, are 20 times more likely to be victims of firearm homicide, while White and American Indian/Alaskan Native men are more likely to die of firearm suicide.

There are approximately 400 million firearms in private hands across the country and about 45,000 gun deaths each year. Over the past two decades, the number of firearm deaths has steadily risen and, currently, is the highest it's been since its peak in the early 1990s.

The reality is, "We cannot wish away those 400 million firearms," said Ranney. She advocates instead for applying a public health approach to counter gun violence.

The four-step public health plan—one that has proven effective in dramatically reducing deaths from other epidemics such as car crashes and HIV/AIDS—involves gathering data to measure incidence; identifying risk and protective factors; developing and testing interventions; and implementing what works. Within this model, specific strategies can be tailored for individuals or groups and can encompass relationships, neighborhoods and society as a whole.

"The reason we have not seen success [in reducing gun violence] is because we have not applied this public health approach for a variety of reasons, including politicization and lack of funding," she said, "and most of all, this lack of realization that violence is inherently a public health problem."

But gun violence cannot be studied or addressed in a vacuum. It co-occurs with overlapping epidemics, or "syndemics."

One syndemic that often envelops the gun violence debate is the growing rate of mental health disorders, including a troubling rise in depression among youth and young adults over the past two decades. The link between violence and mental health issues is complex.

"We want to call people who commit mass shootings crazy or mentally ill," said Ranney. Some have had mental health problems and were in crisis prior to the shooting. "But what we find is that one of the biggest correlates of being a mass shooter is actually a prior criminal history, particularly a prior history of domestic violence," she said. Often, there were missed warnings signs.

Meanwhile, two-thirds of firearm deaths in this country are suicides. But, Ranney noted, mental illness treatment alone may not be sufficient to decrease suicide. Access to lethal means—like firearms—is also a big factor, and firearm suicide rates are higher in states where more people have access to a firearm at a moment of despair.

Dr. Kristen Mueller (l), a clinician-scientist in St. Louis, stands with colleagues in the Life Outside of Violence (LOV) program, a violence prevention project that receives NIH funding.

★ ★ ★

"As a health care provider, I'm deeply aware of the ways in which our country's epidemic of violence affects us."

-DR. MEGAN RANNEY

★ ★ ★

Another intersecting epidemic is the substance abuse and opioid crisis."We cannot separate out our country's epidemic of violence, particularly firearm violence, from the other epidemics also occurring," Ranney cautioned. "Unfortunately, by the time the trigger is pulled, we've missed upstream opportunities for prevention." As an emergency physician and researcher, she is gathering data, identifying risk and protective factors and working on effective interventions.

Toward Digital Health Solutions

Ranney, the founding director of the Brown-Lifespan Center for Digital Health, is developing and testing digital health interventions toward preventing violence and related behavioral health problems.

A project called iDOVE2—funded by the National Institute of Child Health and Human Development (NICHD)—aims to break the cycle of peer violence and depressive symptoms among at-risk adolescents.

Some 40% of adolescents who come through EDs for any reason report they have been in a physical fight in the past year. These kids are at higher risk for future physical fights, firearm injury and behavioral health problems, noted Ranney.

The project delivers a brief intervention by a trained researcher and follows up with an automated text-messaging program that provides conflict resolution and cognitive and behavioral therapeutic (CBT) skills. The pilot study showed improved depressive symptoms and reduced physical violence among the most symptomatic youth. Based on this success, an 800-person randomized trial is underway that includes live interactions with a counselor.

Another similar project, partly funded by NICHD, works with youth who are victims of cyberbullying. An automated app offers CBT and other support. Unfortunately, the pandemic interrupted the study at the four-month mark.

"The fact that I saw improved well-being and stress among the kids that participated

in the intervention despite that, by that point, many, if not all, of these kids were out of in-person school was remarkable and highlights the fact that we can get at these syndemics using relatively low-tech, low-touch tools," Ranney said.

Other studies are targeting the larger community. Guardians 4Health is a Centers for Disease Control and Prevention (CDC)-funded study in partnership with Brown University—where Ranney was deputy dean of its school of public health before arriving at Yale—and 4-H Shooting Sports. The study enrolls children nationwide to partner with 4-H in teaching "bystander intervention" techniques for all aspects of firearm injury prevention, ranging from safer storage to recognizing suicide risks.

"There's this larger perspective of how to empower these youth to be aware of risk factors for intentional firearm injury to help communities recognize risk and act on it," Ranney said.

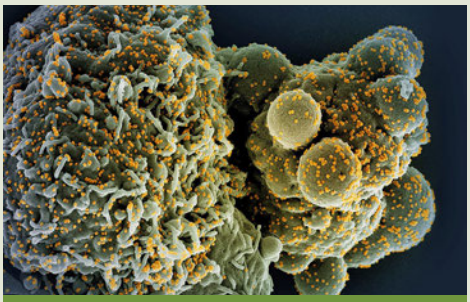
Another NICHD-supported study, which she's conducting with her colleague Dr. Nicole Nugent, examines yet another driver of these syndemics—loneliness and increased social isolation. The project, which is enrolling youth in the ED, is monitoring connections among violence, loneliness and social media use.

Ranney described other NIH- and CDC-funded research looking at such topics as safer storage of firearms in the home, particularly how to protect people with dementia, mental health challenges, visiting grandkids or others at imminent risk.

Ranney also highlighted violence intervention programs spearheaded by her colleagues. Many of these community- and hospital-based programs seek to address structural racism and economic disempowerment which, she said, "leads kids—particularly Black and Brown youth—to end up in the emergency department as victims of an assault, shooting or stabbing."

As research continues toward finding optimal strategies that prevent firearm injuries and deaths, Ranney offered a stark reminder of the ubiquity of this problem.

"None of us are immune," she said. "As we talk about addressing this syndemic as researchers, it's important to remember the degree to which this affects so many within our community. We should be so lucky as to not have it touch our own family."



Colorized scanning electron micrograph of a cell (green) infected with the Omicron strain of SARS-CoV-2 virus particles (gold), isolated from a patient sample

IMAGE: NIAID INTEGRATED RESEARCH FACILITY, FORT DETRICK, MD.

Severe Covid-19 May Lead to Long-Term Innate Immune System Changes

Severe Covid-19 may cause long-lasting alterations to the innate immune system, the first line of defense against pathogens, according to a small study funded by NIAID. These changes may help explain why the disease can damage so many different organs and why some people with long Covid have high levels of inflammation throughout the body. The findings were published online in the journal *Cell*.

Researchers led by Dr. Steven Josefowicz of Weill Cornell Medicine examined immune cells and molecules in blood samples from 38 people recovering from severe Covid-19 and other severe illnesses, as well as from 19 healthy people. Notably, the researchers established a new technique for collecting, concentrating and characterizing very rare blood-forming stem cells that circulate in the blood, eliminating the need to extract such cells from bone marrow.

In these rare stem cells—the parents of immune-system cells—taken from people recovering from Covid-19, scientists identified changes in the instructions for which genes got turned on or off. These changes were passed down to daughter cells, leading them to boost production of immune cells called monocytes.

In the monocytes from people recovering from severe Covid-19, the changes in gene expression led the cells to pump out greater amounts of molecules called inflammatory cytokines than monocytes from people who were healthy or had non-Covid-19 illnesses. Researchers observed these changes as much as a year after the participants came down with Covid-19. Due to the small number of study participants, the scientists could not establish a direct association between the cellular and molecular changes and health outcomes.

The investigators suspected that an inflammatory cytokine called IL-6 might play a role in establishing the changes in gene-expression instructions. Findings suggest that SARS-CoV-2 can cause changes in gene expression that ultimately boost the production of inflammatory cytokines, and one type of those cytokines perpetuates the process by inducing these changes in stem cells even after the illness is over. Additionally, the findings suggest that early-acting IL-6 is likely a major driver of long-term inflammation in people with severe Covid-19. These findings shed light on the pathogenesis of SARS-CoV-2 infection and may provide new leads for therapies. The results also underscore the importance of staying up to date with recommended Covid-19 vaccines, which are proven to protect against serious illness, hospitalization and death.

Marijuana, Hallucinogen Use, Binge Drinking Reached Historic Highs Among Adults 35-50

Past-year use of marijuana and hallucinogens by adults ages 35 to 50 continued a long-term upward trajectory to reach all-time highs in 2022, according to the Monitoring the Future (MTF) panel study, an annual survey of substance use behaviors and attitudes of adults 19 to 60 years old.

MTF found that nicotine vaping significantly rose in the past five years.

PHOTO: TIBANNA79/SHUTTERSTOCK

Among younger adults ages 19 to 30, reports of past-year marijuana and hallucinogen use as well as marijuana and nicotine vaping significantly increased in the past five years, with marijuana use and vaping at their highest historic levels for this age group in 2022.

MTF is funded by NIDA and conducted by scientists at the University of Michigan's Institute for Social Research, Ann Arbor.

While binge drinking has generally declined for the past 10 years among younger adults, adults ages 35 to 50 in 2022 reported the highest prevalence of binge drinking ever recorded for this age group, which also represents a significant past-year, five-year and 10-year increase.

"Substance use is not limited to teens and young adults and these data help us understand how people use drugs across the lifespan," said NIDA Director Dr. Nora Volkow. "Understanding these trends is a first step and it is crucial that research continues to illuminate how substance use and related health impacts may change over time. We want to ensure that people from the earliest to the latest stages in adulthood are equipped with up-to-date knowledge to help inform decisions related to substance use."

At left, a Fogarty LAUNCH trainee asks a question during the orientation. **PHOTO: JUDY COAN-STEVENS**
At right, Fogarty alumna Dr. Jacqueline Firth of USAID **PHOTO: MERRIJOY VICENTE**

LAUNCH

CONTINUED FROM PAGE 1

journey in global health, urging the group to "focus on the future while still taking things day-by-day." He also emphasized the importance of seeking mentorship and staying receptive to new opportunities.

NIH Acting Director Dr. Lawrence Tabak then highlighted the profound connection between the LAUNCH fellowships and the broader NIH mission. He offered valuable advice, noting that "being surrounded by intelligent peers rather than necessarily being the smartest person in the room will be instrumental in your career in research and public health."

Several LAUNCH alumni were also present to welcome the newcomers. Dr. Jacqueline Firth, one of Fogarty's inaugural fellows and now chief of the U.S. Agency for International Development (USAID) pediatric and maternal clinical HIV branch, spoke about the significance of community engagement in research. She shared how her own FIC project had a transformative impact on her career, underscoring the importance of understanding different cultures when collaborating with diverse groups.

"The bottom line is, when you want to work with a group, you need to have a deep understanding of what their culture is and what is important to them, as it defines how they view power and partnerships and how you can effectively collaborate with them," said Firth.

Dr. Magaly Blas, another esteemed former fellow and the founder of Mamas del Rio, an organization providing a voice for women and children living in remote parts of the Peruvian Amazon, provided valuable guidance on securing crucial mentorship for success in global health research. With a wealth of experience from Universidad Peruana Cayetano Heredia, Blas equipped attendees with indispensable tools and strategies to establish and maintain fruitful mentorship relationships.

Global Health Challenges

The third day commenced with an engaging 'fireside chat' between former Fogarty Director Dr. Roger Glass, president of the China Medical Board, former National Institute of Allergy and Infectious Diseases (NIAID) Director, Dr. Anthony Fauci and former NIH Director Dr. Francis Collins. Discussions centered on the impact of global health research on policymaking and addressing emerging health challenges. Fellows had an opportunity to interact with speakers, ask questions and refine their elevator speeches.

The conversation delved into topics such as mentorship, the development of the PEPFAR (President's Emergency Plan for AIDS Relief) program launched 20 years ago, and the challenges brought on by the Covid-19 pandemic. Fauci acknowledged that "combating misinformation in the wake of the pandemic presented one of the most significant challenges for upcoming fellows," while also emphasizing the importance of promoting vaccine adherence and preventing future pandemics.

Former Fogarty Director Dr. Roger Glass (l) and former NIAID Director Dr. Anthony Fauci engage in a fireside chat.

Collins, on the other hand, shared with the trainees the success of the H3Africa program, a joint project of NIH, the Wellcome Trust, and the African Academy of Sciences, which facilitates fundamental research into diseases on the African continent while also developing infrastructure, resources, training and ethical guidelines to support a sustainable African research enterprise. He shed light on the program's upcoming phase, which involves establishing Centers of Excellence in Africa. He recounted how his own fellowship experience in Nigeria had a profound impact on his subsequent research career.

"Get ready, because this experience will have a profound impact on you," Collins said. "Don't be surprised if it becomes a calling that you weren't expecting but will inevitably be irresistible."

Staff from other institutes and centers from across NIH—including the National Heart, Lung and Blood Institute, the

Fogarty trainees and staff stand outside the National Library of Medicine.

Glass and former NIH Director Dr. Francis Collins

National Institute of Diabetes and Digestive & Kidney Diseases, the National Institute of Mental Health, the National Institute of Environmental Health Sciences (NIEHS) and the National Institute of Neurological Disorders and Stroke, highlighted their ongoing support for this program and the trainees. NIEHS Director Dr. Richard Woychik said, "We at NIEHS are so grateful for the expertise of the fellows whom we've supported over the years."

The remaining orientation sessions offered practical advice on time management, budgeting and safety, essential for navigating their 'Fogarty year.' Other discussions focused on decolonizing global health, fostering south-to-south partnerships, addressing climate change and promoting equitable representation in research.

A Rewarding Journey

LAUNCH is Fogarty's flagship global health training program, which provides mentored research training for fellows and scholars from both the U.S. and low- and middle-income countries (LMIC) at established biomedical and health research institutions and project sites.

Over the last two decades, U.S. and LMIC trainees have embarked on their 'Fogarty year' with this orientation at NIH before being embedded into established research teams. The cherished tradition continues to provide an opportunity for the new cohort to connect, discuss vital global health topics and become energized and inspired as they begin their research endeavors.

Reflecting on his FIC tenure, Glass commented that its "most rewarding aspect was the chance to travel the world, forge connections with former Fogarty [and other] NIH fellows, and witness firsthand how their work continues to impact global health in the present day."

NCI's Dawsey Retires After 35 Years

BY JENNIFER LOUKISSAS

Dr. Sanford Dawsey, senior investigator in the Metabolic Epidemiology Branch (MEB) retired in August after more than 35 years of service to the National Cancer Institute. He is best known for his research on methods of prevention and control of esophageal squamous cell carcinoma (ESCC), including etiologic studies of ESCC in high-risk populations and the development of clinically useful techniques for the early detection and treatment of ESCC precursor lesions and early invasive tumors.

Dr. Sanford Dawsey retired in August after more than 35 years of service at NCI.

A pathologist by training, Dawsey has conducted numerous field studies of ESCC in high-risk countries around the world, including China, Iran, Brazil and Kenya. He and his collaborators identified important potentially modifiable risk factors for ESCC, including low serum selenium, exposure to high levels of polycyclic aromatic hydrocarbons (PAHs), poor oral hygiene and drinking scalding hot beverages such as tea and maté, a widely consumed tea-like beverage used in Southern South America that is often heavily contaminated with PAHs.

In addition, Dawsey led multiple studies that conclusively proved that HPV is not the cause of high rates of ESCC in these high-risk regions, which was very important since it means we cannot rely on the HPV vaccine to reduce the burden of ESCC in these populations.

In partnership with colleagues in China and the U.S., Dawsey developed an endoscopic early detection and treatment program that has been shown to reduce ESCC mortality significantly in high-risk areas of China. Today, this program screens more than 200,000 adults annually in China.

He was also instrumental in the establishment of the African Esophageal Cancer Consortium (AfrECC), a network of programs that perform coordinated etiologic, early detection and treatment and palliation studies of ESCC in Eastern and Southern Africa. He plans to continue making major contributions to AfrECC in retirement as an NCI special volunteer.

Dawsey received his medical degree from Stanford University, completed his residency in pathology at the University of Colorado, Denver, and completed a fellowship in cytology at the University of California, Los Angeles.

In the 1980s, he served as the first pathologist at the McCormick Hospital in Chiang Mai, Thailand, where he helped start the first Pap screening program in Northern Thailand; he also served as a staff pathologist at Saint Joseph Hospital in Denver. He joined NCI in 1987 to work on the Nutrition Intervention Trials in Linxian, China, which has the highest rates of ESCC in the world.

Over the course of his career, Dawsey trained dozens of fellows locally and remotely in the U.S., China, Iran, Kenya and Malawi. In 2011, he received the NIH Ruth L. Kirschstein Mentoring Award for "exemplary performance while demonstrating significant leadership, skill and ability in serving as a mentor." In 2018, he received the DCEG Exemplary Service Award for his outstanding research on esophageal cancer.

VOLUNTEERS

Study Recruits People with DBA

Diamond-Blackfan anemia (DBA) is an inherited disorder that occurs when the bone marrow fails to make red blood cells, leading to anemia and bone marrow failure, with increased cancer risks. Researchers want to know whether the investigational drug Bitopertin is safe and effective in helping restore blood formation by targeting one of the defects found in patients with DBA. If you or someone you know has been diagnosed with DBA and have not responded to therapy, has relapsed or is not able to tolerate current treatment, you may be eligible to participate in this study. There is no cost for tests, treatments or procedures. Travel, food and lodging may be provided. To learn more, contact the Office of Patient Recruitment at (866) 444-2214 (TTY users dial 711) or email ccopr@nih.gov for study #001528-H. Online: https://go.nih.gov/LB196jG.

DOG DAYS OF SUMMER

PHS Mascot Visits NIH

In July, a delegation from the Department of Health and Human Services (HHS)—NIH's parent agency—visited NIH to tour and spend time with young patients and their families staying at the Children's Inn at NIH.

U.S. Deputy Surgeon General Rear Adm. Denise Hinton and Commissioned Corps Headquarters Director Rear Adm. Richard Schobitz brought along a special guest: Lieutenant commander Abigail, the first-ever official Public Health Service (PHS) mascot. Abigail, who made her debut at this event, is a two-year-old Labrador Retriever who will provide therapeutic care to patients and PHS officers.

Lt. Cmdr. Abigail was trained by the Warrior Canine Connection (WCC), in connection with the Commissioned Officer Association and Commissioned Officer Foundation. WCC's therapeutic service dog training program is designed to mitigate symptoms of post-traumatic stress disorder, traumatic brain injury and other challenges sustained by returning combat veterans and help them reintegrate back into their families and communities.

The commissioned pup was named after former first lady of the U.S. Abigail Adams, who has a historical connection to the service. The origin and history of the Commissioned Corps trace back to July 16, 1798, when Congress passed an Act, signed by President John Adams, creating the U.S. Marine Hospital Service to protect against the spread of disease from sailors returning from overseas ports. Thus began the story of the Public Health Service.

The concept of the service mascot originated during the Covid-19 pandemic, when PHS officers deployed to respond to the largest public health emergency in modern times. The mascot is intended to improve mental well-being, enhance camaraderie and assist with public health messaging. Lt. Cmdr. Abigail is a living symbol, representing the Commissioned Corps' commitment to protecting the nation's health.

Lt. Cmdr. Abigail, the official PHS mascot

Lt. Cmdr. Abigail joins the PHS delegation, patients and their families, and Children's Inn CEO Jennie Lucca (second from r). At right, U.S. Deputy Surgeon General Rear Adm. Denise Hinton (l), Rear Adm. Richard Schobitz and Abigail greet patients at the inn. **PHOTOS: CHILDREN'S INN AT NIH**

NIH'er's Samoyed Wins Best in Show

Meet Teddy, a Samoyed who won Best in Show this summer at his second American Kennel Club (AKC) show. Teddy's co-owner, Jim Cheskawich, a human resources specialist in NIH's Office of the Director, couldn't be prouder. Teddy is nationally ranked, in the top seven for Samoyeds, after only three shows.

"I have co-owned Teddy since June 2023 and help manage his show career," said Cheskawich. "When not at the shows, he lives with his other co-owners in Colorado."

Cheskawich was past president for the Samoyed Club of America for five years and in the breed for over 30 years. This is his first Best in Show at an AKC All-Breed show.

At right, Teddy with his handler Heather Johnson at the American Kennel Club All-Breed show