ERASE, ENGAGE, ENACT
Importance of Inclusivity
BY AMBER SNYDER

It began with a story. In the 1940s, a young Black woman named Anne had the right test scores to get into Duke University’s medical school but not the right skin color. She audited classes instead and became a medical technologist—at a Black hospital, the only place Black medical technologists were permitted to work at the time.

Anne was Janet Stovall’s eldest aunt. In a recent NIMHD lecture, “Insights on Inclusion: Erase, Engage, Enact,” Stovall emphasized the importance of inclusive practices at NIH. She is global head of diversity, equity and inclusion (DEI) at NeuroLeadership Institute, a worldwide research and cognitive science firm, and founder of the DEI consultancy Pragmatic Diversity.

“Anne’s story made me mad,” Stovall said. “And I follow what makes me mad, which has brought me here to you today.”

She teaches DEI as a 3-step process: erase, engage and enact. Erase old ideas, engage with intention and enact real change.

Diversity and inclusion are not the same thing, she emphasized. Diversity may be having minority individuals at the table, but...

ADA, Technology Allow Disability Community to Reclaim Their Voices
BY ERIC BOCK

Thanks to the convergence of policy and technology, people with disabilities are reimagining how they live and represent themselves, said Dr. Jonathan Kaufman during the inaugural Disability Pride Month virtual lecture on the 32nd anniversary of the Americans with Disabilities Act (ADA).

The ADA is a civil rights law that prohibits discrimination against people with disabilities in the areas of employment, state and local government services, public INTO LIGHT
Exhibit Portrays the Human Side of the Overdose Crisis
BY DANA TALESNIK

Addiction does not discriminate. It can afflict anyone from any background, and yet there remains a stigma surrounding people who struggle with addiction. One artist is working to erase that stigma—inspired by personal experience—through a nationwide art project.

A collection of eight charcoal portraits, now on display at the Clinical Center, depicts people who have died of a drug overdose.

Fauci To Step Down at End of Year

Dr. Anthony Fauci announced Aug. 22 that he will step down from his multiple positions in December. Fauci—director, National Institute of Allergy and Infectious Diseases, chief of the NIAID Laboratory of Immunoregulation and chief medical advisor to President Joe Biden—has served NIH for 54 years.

“Today marks the end of an era,” said Dr. Lawrence Tabak, performing the duties of the NIH director, in a statement. “Tony’s departure will cause a tectonic shift in the modern history of the National Institutes of Health.”
Lorsch To Represent NIH at White House HBCU Workshop

As part of the White House initiative on historically Black colleges and universities (HBCUs), NIGMS director Dr. Jon Lorsch will represent NIH in a workshop on Thursday, Sept. 21. “The Role of HBCUs in Creating Entrepreneurial Equity” will feature a panel of subject matter experts who will speak on various issues related to entrepreneurial science. During the workshop, which will be held from 2:30 to 3:30 p.m., Lorsch will discuss NIGMS initiatives.


‘Feds Feed Families’ Virtual Campaign Underway

NIH is again participating in “Feds Feed Families,” the annual federal government summer food drive. The 2022 virtual campaign will run through Friday, Sept. 30.

Many families are still feeling the effects of the pandemic and are facing food insecurity and hunger. The NIH community has always given generously through this campaign to support those in need. Once again the drive is operating virtually. There will be no food collections at physical locations. Instead, donate online to fight hunger.

You can send food via your favorite virtual grocer, designate a food pantry or even volunteer your time. Visit https://ors.od.nih.gov/FedsFeedFamilies/Pages/default.aspx for details.

Remember to record your donation, so NIH gets credit. Select “U.S. Department of Health and Human Services” as your department and “National Institutes of Health” as your agency.

All donations will be tracked by pounds of food. For monetary donations, the site will use a national conversion rate from dollars to pounds.

If you have questions about recording your donation, email FedsFeedFamiliesNIH@nih.gov.

LISTEN UP

Leadership Continues Commitment to Diversity, Equity, Inclusion, Accessibility

BY JENN PUMPHEY

More than 400 NIH employees have shared their perspectives in the first 2 Diversity, Equity, Inclusion and Accessibility (DEIA) Listening Sessions, bringing their voices to the attention of senior leaders committed to strengthening the workforce by promoting DEIA. The next session—scheduled for Friday, Sept. 9 from 11 a.m. to noon ET—in the seven-part series will hear from people with disabilities.

The senior leadership panel consists of Dr. Lawrence Tabak, performing the duties of NIH director; Dr. Tara Schwetz, acting NIH principal deputy director; Kevin Williams, director, Office of Equity, Diversity and Inclusion (EDI); Dr. Marie Bernard, chief officer for scientific workforce diversity; and Julie Broussard Berko, chief people officer. Sessions are moderated by James Hopkins, EDI’s new equal employment opportunity mediator and alternative dispute resolution program manager.

The sessions are a direct response to more than 4,000 employees who engaged in the DEIA Town Hall held in June. The panel has received listening session feedback from both the Asian American, Native Hawaiian, and Pacific Islander community (July 22) and Black/African-American community (Aug. 3). Remaining special emphasis populations will be addressed through fall 2022.

Opening the first session, Tabak encouraged participants’ candor to help leaders understand the challenges and recommendations of respective communities.

Listening to the seven communities follows development of NIH DEIA policies and initiatives set in motion by civil unrest, the pandemic’s disproportionate impact on underserved communities across the United States and several White House equity executive orders.

The series of sessions is intended to provide a safe space for members of each population and their allies to share insights.

“Many of you have already shown bravery in stepping up and sharing your thoughts with us and we thank you for doing so,” said Williams. “I look forward to going to the drawing board with the rest of the leadership team here at NIH and spending time with your insights so we can brainstorm, plan and execute a collective vision toward enhancing diversity, equity, inclusion and accessibility in practice.

NIH’s senior leaders are committed to ensuring all populations at NIH are able to reach their full potential. For NIH to tap into the rich and full diversity of the United States, everyone must be treated in a just and fair manner with equitable access to opportunities.”

All sessions will be available through EDI’s Employee Listening Session Portal: https://go.usa.gov/xhrBS (must be signed into VPN to access).
NIEHS-Led Collaboration Receives Director's Challenge Nod

BY KELLEY CHRISTENSEN

An NIEHS-led research collaboration has received the NIH Director's Challenge Innovation Award. Led by Dr. Dondrae Coble, chief of the Comparative Medicine Branch, the grant will fund construction of multiple animal enclosures designed to help researchers observe the effects of 115 environmental chemicals on behavior. The enclosures help ensure that observations are minimally disruptive to the research animals, which include fruit flies and mice.

Additionally, the researchers will use the grant to collect, analyze, store and share data collected during the experimentation process. The goal is to narrow down from 115 to 10 environmental chemicals that are most likely to cause potential neurodevelopmental disorders in fruit flies and mice. Ultimately, the information could help identify environmental chemicals causing neurodevelopmental disorders in human children.

The effort brings together collaborators from the NIEHS Division of Intramural Research and Division of the National Toxicology Program, NIDDK and NIBIB.

“Through our collaboration, NIEHS scientists are developing and leveraging cutting-edge technology to advance mechanistic understanding of neurodevelopmental disorders. This collaboration is an exemplar of trans-NIH research that is better for the animals,” said Dr. Darryl Zeldin, NIEHS scientific director.

The award comes on the heels of previous NIEHS research that is better for the animals. The award amount for “Machine vision-enabled behavioral tracking for cross-species extrapolation” is $500,000, spread over 2 years.

Dr. Dondrae Coble directs the NIEHS vivarium, where he helps ensure researchers working with research animals receive the support they need and that the facility provides outstanding animal care and scientific support.

PHOTO STEVE MCCAW/NIEHS

Dr. Dondrae Coble directs the NIEHS vivarium, where he helps ensure researchers working with research animals receive the support they need and that the facility provides outstanding animal care and scientific support.

“Machine vision is when artificial intelligence (AI) is applied to processing images and video in real time using deep neural networks, which are used to train AI to pick out features and learn as it goes,” said Dr. Jesse Cushman, director of the Neurobehavioral Core Laboratory.

Just as a self-driving car can tell the difference between a person and a stop sign, the machine vision used in the enclosures will be trained to tell the difference between behaviors that transcend species, such as grooming, eating, sleeping and interacting with others, as well as distinguish between species-specific behaviors like wing expansion in fruit flies and foraging in mice.

“There are many ways we’re tracking ourselves all the time—with smart watches, apps and sensors in our clothing—and now we’re building that into animal models,” said Dr. Jesse Cushman.

By observing how environmental chemicals affect the behavior of fruit flies and mice, the researchers can extrapolate those effects to how they might impact human development.

“Broadly, cross-species extrapolation is a foundation of what we do in science,” Cushman said. “Regulators put a lot of weight on these in vivo studies, but they’re very expensive and time consuming—which we’re trying to address with this approach. It’s critical to have in vivo data in the whole organism to understand the full impact the compounds have.

“Our goal,” he said, “is to create a high throughput, scalable, automated method to do behavioral research that is better for the animals. We see this as foundational technology to build in holistic perspectives.”

The Director’s Challenge identifies and funds projects that foster trans-NIH collaboration. The program provides seed money from the NIH Office of Intramural Research for innovative and high-impact research that shows significant benefit to a variety of infrastructure and/or scientific endeavors.

The award amount for “Machine vision-enabled behavioral tracking for cross-species extrapolation” is $500,000, spread over 2 years.

ON THE COVER: Penny-sized lab-on-a-chip device capable of quickly detecting the amount and severity of microvascular occlusion, or blood vessel blockage, from a blood droplet taken from people with sickle cell anemia. That blockage, a hallmark of the disease, can lead to organ damage and other complications. The device was developed by NHLBI grantee Dr. Umut Gurkan, a biomedical engineering professor at Case Western Reserve University. September is Sickle Cell Disease Awareness Month.

IMAGE: Umut Gurkan; ARTIST: GRACE GONGAWARE

The NIH Record

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Editor: Carla Garnett • Carla.Garnett@nih.gov
Associate Editor: Dana Talesnik • Dana.Talesnik@nih.gov
Assistant Editor: Eric Bock • Eric.Bock@nih.gov
Editorial Intern: Amber Snyder • Amber.Snyder@nih.gov

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NIH
National Institutes of Health
Turning Discovery into Health
inclusion is making sure their voices are heard.

“A seat at the table doesn’t necessarily equal a voice,” she warned. That is why she argues that inclusion is the most important part of the equation.

“Diversity, equity and inclusion are nice nouns, but we need verbs, action,” Stovall declared. “Leveling is the means to an end for [DEI].” By removing barriers for people of diverse backgrounds, everyone can be on more equal footing.

She also cautioned against use of words like belonging: “[It] is both a sense and a place, but you can’t create either one.”

So, how can NIH take meaningful steps toward inclusive practices?

Stovall indicated health disparities as a starting point. While NIH may not be able to solve the gaps in wellbeing themselves, the medical research agency can address some of the root causes, such as representation in clinical trials. Black people make up about 13 percent of the U.S. population, but only 5 percent of clinical trial participants, for example. Latino representation is even more striking: 19 percent of the population and 1 percent of clinical trial participants.

How can NIH change clinical trials to encourage more diverse participation? Ask participants and caregivers what would help, Stovall suggested, and make sure people are compensated for their time, effort and commitment. She also recommended reaching out to target communities to find individuals willing to help with recruitment.

“People need to imagine themselves in a process before they are ever going to insert themselves into that process,” she explained.

Stovall left her audience with a brief task list:

- Focus on the real problems—the ones you can solve, that will make a difference in your space.
- Find ways to measure your efforts and determine whether you are solving the problems you have set out to solve.
- Establish systems of accountability.

“Inclusion begets more inclusion,” she concluded. A truly inclusive NIH can only improve our ability to enhance health, lengthen life and reduce illness and disability for all.

View the archived lecture at https://videocast.nih.gov/watch=45565.

*NEW TIME, LOCALE*

**WALS Returns for 2022-2023 Season**

The NIH Director’s Wednesday Afternoon Lecture Series (WALS) launches its 2022-2023 season on Sept. 7. See https://oir.nih.gov/wals for the full schedule.

The big change this year is that WALS will be held an hour earlier, from 2 to 3 p.m. ET, and in Lipsett Amphitheater in Bldg. 10 to accommodate ongoing renovation of Masur Auditorium.

Nearly all lectures will be in person, and all are welcome to attend. However, due to Covid restrictions, in-person attendance will be capped at 50. To attend on site, email WALSooffice@od.nih.gov. Otherwise, watch virtually via https://videocast.nih.gov.

WALS kicks off on Sept. 7 with the annual Rola E. Dyer Lecture, “Obligate Symbionts and Other Intriguing Members of Human Microbiomes,” by Dr. Jill Banfield of the University of California, Berkeley. She leads the Microbial Research Initiative within UC Berkeley’s Innovative Genomics Institute. Some of her most noted work includes discoveries about the structure and functioning of microbial communities and the nature, properties and reactivity of nanomaterials.

Rounding out the month: “Harnessing African Genomic Variation to Improve Health Globally” by Dr. Ambroise Wonkam of Hopkins Medicine, Sept. 14; “Molecular Origami: The Delicate Art of Protein Folding and Misfolding and Its Relevance to Health and Disease” by Dr. Judith Frydman of Stanford University, Sept. 21; and “RNA Splicing, Chromatin Modification and the Coordinated Control of Gene Expression” by Dr. Tracy Johnson of the University of California, Los Angeles, on Sept. 28—an NIH Director’s Lecture.

WALS is NIH’s highest-profile lecture program. Each season includes some of the best known names in biomedical and behavioral research. The goal is to keep NIH investigators abreast of the latest and most important research in the United States and beyond. All speakers are nominated by the NIH community.

For updates and notice of future meetings, subscribe to the WALS listserv via: https://go.usa.gov/xhrKx.
NINDS Forum Provides How-to Guidance to Nonprofits

BY SHANNON E. GARNETT

Progress Through Partnership, NINDS’s 16th nonprofit forum, served as a live how-to manual—providing guidance on everything from working with industry, academic and government investigators to finding new ways to fund research to increasing community engagement to attain equity and inclusivity in science.

More than 250 people—including staff representatives and leadership, as well as patient and caregiver members from nonprofit organizations across the country—registered for the virtual meeting.

“The mission of NINDS is to seek fundamental knowledge about the brain and nervous system and to use that knowledge to reduce the burden of neurological disease for all people...and that’s exactly what we do,” said NINDS director Dr. Walter Koroshetz in opening remarks. “There are a lot of challenges with many different disorders, all of which cause a lot of suffering and tragedy for people...We have treatments for some conditions and they’re highly effective, but in general we’re still kind of scratching the surface. So, research is really what will lead to better treatments and that’s what our mission is—to try and get us there.”

The meeting kicked off with a keynote presentation on the Foundation for the National Institutes of Health (FNIH). Newly appointed FNIH CEO Dr. Julie Gerberding gave an overview of the organization, which was set up by Congress to manage research alliances and public and private partnerships in support of NIH. She also provided information on the many initiatives that FNIH manages such as the Accelerating Medicines Partnership (AMP) program. AMP brings together NIH and industry resources to improve understanding of disease pathways and facilitate better selection of targets for treatment.

The 2-day forum featured multiple panel discussions, pre-scheduled one on one discussions with NINDS program staff, and ample networking opportunities.

The “Patient Advocacy in Commercialization” roundtable focused on how nonprofits can work with industry. Panelists explored innovative methods to fund research during a discussion on “Supporting Science as a Small Business.”

During a panel, “Leveraging Progress Across the Scientific Pipeline,” scientific leaders shared their experience and advice on how nonprofits can have robust relationships with researchers at academic institutions.

“We are all here because of our focus on our patients—in my case, ALS patients,” said Dr. Sabrina Paganoni, co-director of the Neurological Research Institute at Massachusetts General Hospital and co-PI of the HEALEY ALS Platform trial—the first platform trial for ALS in the world. “But what really matters is that we are all here together working for the same goal,” she said.

Then-NINDS deputy director Dr. Nina Schor moderated lightning-round talks at the “Engaging Trainees and Early-Stage Scientists” session. She explained that nonprofits can play many roles, even in the space of funding early or mid-career investigators.

“It seems like sometimes you’re actually providing the scientific community with what it needs—fueling their ability to carry out studies that they perhaps wanted to try or fueling new investigators so that you get them off the ground and keep them engaged in what your organization is dedicated to doing,” she said. “But sometimes also you have the opportunity to direct where the field goes by making funding opportunities available that are targeted in some way or that respond to some need of your patient populations and families or of your organization.”

Koroshetz added comments on the importance of training young people in translational research. “The ability to influence and get young people trained in translation, whether it’s through a bootcamp or a disease meeting, is so important in generating the army that is going to solve the problems that we’ve been able to put out on the table,” he said. “When people are looking for a career to make a difference in the world, working on a disease and trying to get a therapy for diseases—there’s not much that’s more rewarding than that.”

Day 2 began with success stories, a yearly favorite. Scientists working with three organizations—the Parkinson’s Foundation, the RedLat Consortium and Global Brain Health Institute, and the Myasthenia Gravis Foundation of America—shared achievements in reaching critical milestones, including in the areas of diversity, equity and inclusion and making sure the science represents all people.

Dr. Todd Schwedt, vice chair for Neurology Research and medical director of clinical studies at the Mayo Clinic, talked about the important role of patients as partners.

“It’s my belief,” he said, “at least for clinical trials in which patients are being enrolled as participants, that researchers and scientists should no longer be determining the most important clinical research questions or outcomes of interest or methods in isolation. They should be doing it along with patient partners. I believe if we’re asking patients to participate as subjects, we should include patients as equitable research partners.”

Recordings of the forum are available at: https://videocast.nih.gov/watch=45549 (day 1) and https://videocast.nih.gov/watch=45551 (day 2).

For more information, visit https://go.usa.gov/xhrKj.
accommodations, transportation and telecommunications, he said.

“The ADA was a tipping point because it made us begin to rethink public policy and how people with disabilities see themselves within society,” said Kaufman, a consultant, psychotherapist, Forbes columnist and former White House policy advisor on diversity and disability.

Prior to the law’s passage, many people perceived disabilities as physical or mental problems that must be fixed and defined people with disabilities by their disability. This view—known as the medical model—has contributed to “ableism,” which is “the discrimination of and social prejudice against people with disabilities based on the belief that typical abilities are superior.” Examples of ableism include inaccessible design, and education and employment discrimination.

The rise of social media occurred as disability laws were changing. He said these new platforms allow people with disabilities “to create, assume and reclaim their identities.” In addition, movies and television shows starring actors with disabilities have become more common. Recently, several have won some of the highest awards in film.

The convergence of public policy, social media and representation have given people with disabilities an opportunity to portray themselves on their terms, instead of from an ableist perspective, he noted.

The disability community “has a tremendous amount of muscle,” he noted. The community is larger than the population of China. There are many types of disability that run the gamut across race, ethnicity, gender, socioeconomic status, sexual orientation and age.

“My experience with disability as a person who has cerebral palsy is very different from my friend, Laurie, who is a deaf woman,” he explained. “This diversity is what makes us wonderful.”

Because more people are disclosing their disabilities, software companies are developing accessible technologies. These allow people with disabilities to work, go to school and “do so many other things that were not possible.” Microsoft, for example, operates a lab devoted to researching accessible technologies.

People with disabilities offer new insights into how to work. When the Covid-19 pandemic first began, employees’ approach to work became decentralized—they were no longer in the office every day. Through his consulting work, Kaufman has found that a lot of answers about how to work remotely came from the lived experience of disability. This “disability mindset” is very valuable in the era of Covid, when companies are evaluating what their needs are.

He advised people with disabilities and hiring officials to form an alliance and work together to create an inclusive workforce for everyone. There is no one-size-fits-all solution. It requires finding common ground.

“The ADA is a wonderful piece of legislation,” concluded Kaufman. “It also says there’s so much more to do. We must use it as a springboard for innovation.”

‘AMERICA’S SEED FUND’

Contracting Excellence Highlighted in 2-Day Bootcamp

A 2-day contracting bootcamp hosted recently by the NIH Path to Excellence and Innovation (PEI) Initiative drew 252 attendees representing small businesses, historically Black colleges and universities (HBCUs) and 27 NIH institutes and centers.

“The PEI Initiative at NIH is a really unique comprehensive effort to strengthen HBCU capacity to compete for, receive and manage contracts,” said acting principal deputy director Dr. Tara Schwest, who shared the program’s history.

She explained that consistent with two presidential executive orders, the PEI Initiative helps HBCUs do three specific things—participate in federal programs, access federal resources including grants and procurement opportunities and partner with federal agencies.”

Toward that end, day 1 of the virtual bootcamp introduced participants to NIH’s Small Business Education and Entrepreneurial Development (SEED) Fund program, which dedicates $1.2 billion from NIH’s research and development budget.

Health and Human Services (HHS) small business program lead Stephanie Fertig, who oversees the HHS and NIH Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs, described the 40-year-old SBIR and STTR programs, which were re-branded as “America’s SEED Fund.”

According to Fertig, small businesses support the NIH mission to turn discovery into health.

“That’s what the small business programs do,” she said. “They help get those great innovations into the hands of the patients, clinicians, caregivers and researchers that need them.”

Fertig also debunked several myths that she believes exist about NIH small business programs. For example, some businesses might think they have a better chance of being awarded an SBIR because that program has a larger budget. In reality, however, the size of the program does not correlate with the chance of getting an award. She also addressed requirements for clinical trials, noting that NIH’s definition of a clinical trial differs from FDA’s, which uses the number of subjects and risk as considerations.

Fertig also moderated a discussion on “Entrepreneurs in Action: Success Stories.” Panelists included Eric Adolphe, CEO of Forward Edge-AI, Inc.; Dr. Elizabeth Offii of Morehouse School of Medicine, CEO of AccuHealth Technologies, Inc.; Tokunbo “TJ” Falohun, CEO of Olera, Inc.; and Dr. Loleta Robinson, SEED entrepreneur in residence.

Excellence in contracting was the theme for day 2. Kathleen “Kate” O’Sullivan, executive officer and director, NHLBI office of management, discussed research the institute is conducting in minority communities. Darnese Wilkerson, director of the Office of Acquisitions, overviewed the NIH acquisition process. Wanda Gamble and Dr. Desmond Stubbs, both of Oak Ridge Associated Universities, a business partner in the PEI 2.0 cohort, also presented.

Other participants included NIH deputy director for management Dr. Alfred C. Johnson, who discussed diversity and highlighted UNITE, and Office of Acquisition and Logistics Management director Diane J. Frasier, head of NIH contracting, who spoke about the promise of the PEI 2.0 Initiative.
This friendship would become pivotal for establishing NIH in Bethesda.

Generosity was a foundational value of the Wilson family. For example, Helen met a pianist who did not own a piano, so she had one delivered to him. When the Wilsons decided they wanted to do something that would help others, they committed to donating their biggest asset—their land.

The problem was finding someone during the Depression of the 1930s to take it. A park for Montgomery County, a school to teach boys international cooperation instead of competition and a training center for teachers were some ideas pursued by the Wilsons but that the Depression made impossible. So elder Luke wrote to his friend, then-President Franklin Roosevelt, offering the land to the federal government, if feds had a good use for it. Roosevelt passed the letter along to Dr. Lewis Thompson, who was searching for a bigger and better place for NIH laboratories and animals than downtown Washington, D.C.

A research institute devoted to improving everyone’s health was a mission that suited the Wilsons, and they threw themselves into planning the layout of the campus with Thompson.

When father Luke died of bladder cancer just days before Congress established the National Cancer Institute in 1937, Helen added even more of their estate to the donation for Bldg. 6, which was dedicated to NCI. She lived out her days in the estate Lodge, which included the Flat, a guest house and greenhouse, the Cabin and a garage on 3.5 acres.

Helen and son Luke carried on the Wilson tradition of a generous spirit with his wife Ruth. The younger Luke was a pilot in WWII, and Helen and Ruth would host events for the soldiers and their families in the Cabin. They set the tone culturally for NIH in the early years by making their home a welcoming and comforting place for people.

Over the years, when son Luke’s family visited, they would stay in the Lodge, Cabin or Flat. For the family, the campus was an oasis of quiet and peace.

During the summer, they often spent nights on the porches of the residences, because there was no air conditioning. They could hear the crickets and take advantage of the breeze. Reading in the buildings’ window seats, even on the hottest days, also offered moments of cool relaxation. The family appreciated the bucolic environment, with its trees and ponds that were home to frogs and Koi.

After Luke died in 1985, Ruth remained until her death from falling down a flight of stairs at Calvin Baldwin’s on-campus house on Thanksgiving 1989. The family had several conversations with NIH to turn the remaining areas of the estate into a welcoming center and a place for families to stay while their loved ones were receiving treatment at NIH, but an agreement wasn’t reached. The family donated the remaining 3.5 acres and the homes to NIH.

In the span of one lifetime—that of son Luke—the Tree Tops estate of his parents would go from a wooded hideaway to a bustling campus of dozens of buildings employing thousands of people, all dedicated to fulfilling the Wilsons’ dream of making the world a better place for everyone.
They were drawn by Theresa Clower, whose son Devin was 32 years old when he died of an opioid overdose in 2018.

The exhibit, in collaboration with NIDA and on display until Oct. 1, hangs in the east alcove just off the Clinical Center atrium, fittingly near a corridor that leads to the labs of another institute that studies addiction, NIAAA. The portraits on display at NIH are a small segment of the more than 300 portraits Clower has drawn so far, part of an ongoing project organized by INTO LIGHT, the nonprofit she founded.

Drawing Devin—Clower’s first-ever attempt at portraiture—helped her process her grief and inspired her to draw others who died in recent years from drug overdose. She used graphite as a medium to illuminate each face, each multifaceted person who struggled and succumbed, to symbolize that each person has light and dark moments.

“People with the disease of addiction are often blamed for their illness,” said Dr. Barbara Francois, a psychologist who is the narrative writer for INTO LIGHT. “Sharing the stories of the loved ones in this project helps us to know them and provides an opportunity to educate the public about substance use disorder, not as a moral weakness, but as a brain disorder that needs treatment.”

Their addiction was one part of a much larger story, told through narratives that pay tribute to the lives lost. Each of the portraits is expressive. Some pensive, others smiling.

Timothy was a brick mason for 35 years and a loving dad who got hooked on opiates prescribed for back pain. He ultimately died of a heroin overdose at age 54. Clark, who also became addicted to opioids following pain from a car accident injury, died at 30.

Sarah loved hiking and going to concerts. She struggled for many years with anxiety and succumbed to her addiction at age 35. Andrew was a devoted dad and massive sports fan who lost his addiction battle at age 31.

These are among the people featured to help change the conversation about addiction. While science can help address the crisis in many ways, it is only one part of the picture. Compassion and support are needed to encourage treatment and sustain recovery.

Last year, Clower reached out to NIDA director Dr. Nora Volkow, who helped facilitate bringing the exhibit to the Clinical Center.

“Science and art are not often thought of together in tandem,” said Volkow, “but the intersection of neuroscience to understand how the brain changes due to substance use and addiction and art to remind us of our shared humanity provides a powerful way to help alleviate deep-rooted stigma and inaccurate perceptions.

“While scientific evidence can build a case with evidence and data, the emotional connection experienced through art can be an even stronger argument for changed perspectives on addiction and overdose.”

One of Biden’s first calls as president-elect was to Fauci, asking him to serve as chief medical advisor. “In that role,” said Biden, “I’ve been able to call him at any hour of the day for his advice as we’ve tackled this once-in-a-generation pandemic. His commitment to the work is unwavering and he does it with an unparalleled spirit, energy and scientific integrity.”

“Without exception, he is always guided by the science,” Tabak said. “For Tony, it’s personal. He works tirelessly on behalf of all patients, often at great personal expense, and always bringing his Brooklyn tenacity to the fight. I know of no one more dedicated than Tony to the mission of NIH and the health of the American people.”

“It has been the honor of a lifetime,” said Fauci, “to have led the NIAID, an extraordinary institution, for so many years and through so many scientific and public health challenges. I am very proud of our many accomplishments. I have worked with—and learned from—countless talented and dedicated people in my own laboratory, at NIAID, at NIH and beyond. To them I express my abiding respect and gratitude.”

Biden noted, “Because of Dr. Fauci’s many contributions to public health, lives here in the United States and around the world have been saved...Whether you’ve met him personally or not, he has touched all Americans’ lives with his work. The United States of America is stronger, more resilient and healthier because of him.”

Tabak concluded, “I look forward to seeing what Tony will do next. I have no doubt that he will continue to have an enormous impact on the world.”
Blood-Based Biomarkers Help Predict Outcomes After TBI

A new NIH study found that biomarkers present in the blood on the day of a traumatic brain injury (TBI) can accurately predict a patient’s risk of death or severe disability 6 months later. Measuring these biomarkers may enable a more accurate assessment of patient prognosis following TBI, according to results published in Lancet Neurology.

Researchers with the Transforming Research and Clinical Knowledge in TBI study examined levels of gial fibrillary acidic protein (GFAP) and ubiquitin carboxy-terminal hydrolase L1 (UCH-L1)—proteins found in glial cells and neurons, respectively—in nearly 1,700 patients with TBI.

Participants were recruited from 18 high-level trauma centers across the country. More than half (57 percent) had suffered TBI as the result of a traffic accident.

The study showed that GFAP and UCH-L1 levels on the day of injury were strong predictors of death and unfavorable outcomes, such as vegetative state or severe disability requiring daily assistance to function. Those with biomarker levels among the highest fifth were at greatest risk of death in the 6 months post-TBI, with most occurring within the first month.

GFAP and UCH-1 are currently used to help detect TBI. Elevated levels in the blood on the day of the TBI are linked to brain injury visible with neuroimaging. In 2018, the FDA approved use of these biomarkers to help clinicians decide whether to order a head CT scan to examine the brain after mild TBI.

The new study suggests that GFAP and UCH-L1 may also help to predict recovery, particularly among patients with moderate to severe TBI. However, the biomarkers did not accurately predict who would experience incomplete recovery—moderate disability but able to live independently—at 6 months.

Scientists Create Small, Wearable Ultrasound Device

Ultrasound is a noninvasive technique that lets clinicians peer inside the body to monitor health and diagnose disease. Several research groups have been trying to develop approaches that would allow longer-term ultrasound monitoring in various settings via wearable devices. To date, most of these efforts have provided relatively low-resolution images or are unable to visualize deep tissues or organs.

Now, an NIH-funded research team led by Dr. Xuanhe Zhao at the Massachusetts Institute of Technology has developed a new type of wearable ultrasound patch that overcomes many limitations of earlier approaches. This multi-layered device is about the size of a thick postage stamp, and it adheres to skin in both wet and dry environments. The device was described in Science.

Ultrasound works by first placing a probe, or transducer, on the body. The transducer emits high-frequency sound waves that bounce off internal tissues, creating echoes that are captured and translated into images on screen. A soft gel applied between the skin and probe helps to enhance soundwave transmission.

The patch created by Zhao’s team used several advanced techniques to combine these ultrasound components in a miniature package. A thin, rigid array of ultrasound probes sits atop a tough but flexible hydrogel layer. An elastomer membrane protects the hydrogel from drying out, and a bioadhesive binds the probe strongly to skin.

The researchers tested the patch on 15 human volunteers. They showed the device could be comfortably worn for at least 48 hours. Depending on placement, the patch could provide continuous imaging of blood vessels, heart, muscle, diaphragm, stomach or lung. The heart or lungs could be stably and continuously imaged even while volunteers were jogging or cycling.

Despite the patch’s potential for on-the-fly mobile imaging, the device currently must be hooked to computer systems for intensive data processing. But Zhao and his team foresee future possibilities.

“The envision a few patches adhered to different locations on the body, and the patches would communicate with your cell phone, where AI algorithms would analyze the images on demand,” Zhao said. “We believe this represents a breakthrough in wearable devices and medical imaging.”—adapted from NIH Research Matters

Monoclonal Antibody Prevents Malaria in U.S. Adults

One injection of a candidate monoclonal antibody (mAb) known as L9LS was found to be safe and highly protective in U.S. adults exposed to the malaria parasite, according to results from a NIAID phase 1 clinical trial published in the New England Journal of Medicine.

Additional clinical trials evaluating whether L9LS can prevent malaria over 6 to 12 months against seasonal and perennial transmission are underway in infants and children in Mali and Kenya, where malaria is endemic.

Malaria is a mosquito-borne disease caused by Plasmodium parasites. The World Health Organization estimates that in 2020 about 240 million people had malaria and about 627,000 died, many of them young children.

A vaccine to prevent malaria is now available; however, its variable efficacy underscores the need for new interventions that protect against disease.

Scientists from NIH’s Vaccine Research Center developed L9LS and led the phase 1 clinical trial. L9LS is a laboratory-made version of a naturally occurring antibody called L9, derived from the blood of a volunteer who had received an investigational malaria vaccine. The antibody prevents malaria by neutralizing the parasites in the skin and blood before they can infect liver cells.

The study was conducted from Sept. 13 to Nov. 16, 2021, at the Clinical Center and the Walter Reed Army Institute of Research in Silver Spring, Md. The trial involved 18 volunteers receiving various doses of L9LS subcutaneously or intravenously.

After tolerating the injection and experiencing no safety concerns, participants allowed mosquitoes carrying the malaria parasite to bite their forearm 5 times, starting from 2 to 6 weeks after receiving the mAb candidate.

This took place in a carefully controlled setting, known as controlled human malaria infection (CHMI). As part of this approach, which has been used for decades in malaria research, medical staffs closely monitor participants and provide proper treatment if they become infected.

L9LS fully protected 15 of 17 (88 percent) participants from malaria infection during the 21-day challenge period. All volunteers in the control group that underwent CHMI, but did not receive L9LS, became infected and were promptly treated without complications. Encouragingly, 4 of the 5 participants who received a low, subcutaneous dose of the mAb were protected from malaria.

NIAID director Dr. Anthony Fauci said the results are promising: “A one-time intervention that protects against malaria for 6 months to a year could significantly reduce morbidity and mortality among children in malaria-endemic regions and offer an effective preventive tool for health care workers, military personnel and travelers to these areas.”
NIEHS Scientist Reshapes Future of Allergy Treatments

BY JENNIFER HARKER

Dr. Geoffrey Mueller, director of the NIEHS Nuclear Magnetic Resonance Research Core Facility, was awarded the John W. Yunginger, M.D., Memorial Lectureship at the annual meeting of the American Academy of Allergy, Asthma & Immunology (AAAAI) held in Phoenix earlier this year. The award honors significant scientific contributions of AAAAI members.

Mueller was recognized for his work exploring the structure and function of allergens and his quest to develop effective therapeutic antibodies to help people who have severe allergies.

Where It Began

Mueller’s love for science, and more specifically physics, flourished during time spent in the inaugural class of Thomas Jefferson High School for Science and Technology in Alexandria, Va. His research portfolio began when he earned a doctorate in biophysics at the University of Virginia. His dissertation, a black-bound book that still resides on his desk, examined the structure of one dust mite allergen, Der p 2, using a structural biology technique called nuclear magnetic resonance (NMR) spectrometry.

He continued this work, using NMR techniques, in a postdoctoral fellowship at the University of Toronto before joining NIEHS in 2001 as a staff scientist. He has since expanded this research of structures of various dust mite proteins and other allergens, and in 2020, Mueller became director of the facility and head of the NMR Group.

Not All Nuts Are Equal

At the AAAAI conference, Mueller presented on the common properties of allergens. The allergens he works with include dust mites, cockroaches, cats and dogs, and foods such as shellfish, peanuts (legumes), walnuts (which are considered nut-like drupes), and cashews and pistachios (which are drupes). These differences matter a lot when investigating the proteins in each that cause an allergic reaction in humans.

Mueller and his team characterize allergens molecularly through a set of structural biology techniques. There are three ways to investigate the chemical structure of proteins: cryo-electron microscopy, x-ray crystallography and NMR. The Mueller Lab recently published a study on the cross-reactivity of the peanut and the walnut, and now they are examining data regarding peanut and pistachio or cashew allergies.

“Within this cohort of patients, there seems to be different patterns between people who are mono-sensitized versus people that are dual-sensitized,” Mueller said. Here, mono means allergic only to peanuts, and dual means allergic to peanuts and one of the other nuts (pistachio or cashew).

“It’s odd because peanuts and pistachios or peanuts and cashews are not even cousins,” he noted. “Pistachios and cashews are closely related. Peanut, however, is actually distantly related, so it is a little bizarre that people frequently have dual-sensitization allergies. We have three supposedly different populations here, and they do seem to show different patterns of sensitization, which is interesting.”

Antibodies as Therapeutics

Mueller also gave a continuing education course at the AAAAI conference titled “Molecular Characterization of Allergens and Specific IgE Antibodies.”

“The major direction in the future is looking at how antibodies react with allergens,” Mueller said. It has only been in the past 5 years that the human antibodies that cause allergic symptoms have been cloned and examined in isolation.

“IgE antibodies, which are rare and circulate in low levels, have been notoriously difficult to clone out of people because the memory cells are exceedingly rare,” he noted. “We are finally now getting real human IgE antibodies to allergens. I really see that as the next frontier as far as exploring their structure and getting a deeper understanding from that. We ask, ‘What is the human repertoire to allergens?’”

Mueller said his work leads to two possible new treatments for allergies.

“One is to redesign allergy shots to be a safer form of immunotherapy,” he explained. “Second are therapeutic antibodies. With allergy shots, I am giving you the allergen and telling your body, ‘Figure out what to do with this in a different way.’ What if I just gave you the antibodies you need? We are collaborating on ways to create these new technologies to benefit people within the next 10 years. Moving from immunotherapy to delivering therapeutic antibodies is probably the first major new idea in 100 years for treating people with allergies.”

Mission-Driven

An allergy is an accidental over-response to foreign matter. It is an inappropriate response to something normally considered harmless. Mueller hypothesizes that therapeutic antibodies could intercept the allergen before it causes symptoms.

The science emerging from the NIEHS Mueller Laboratory has the potential to help millions of people, which is not lost on him. He has good reason to want to help people who have severe allergies.

“She’s allergic to everything,” he said about his 21-year-old daughter, Madison. “It is almost ironic because I got interested in allergens in graduate school, before she was born.”

He too suffers from allergies. “I researched the dust mite allergen because I was allergic to dust mites.”

But his drive is not only personal, it is mission centric.

“I really like my job, and I am really motivated to develop new therapies,” Mueller said about his career as a federal scientist. “We try to focus on making sure we are doing research on the health outcomes for people, which is the mission of our institute.”
NINDS's Cordell Retires After 36 Years of Federal Service

BY SHANNON E. GARNETT

After 36 years of federal service—34 with NIH—Janice Cordell, a nurse consultant and clinical research program manager in NINDS’s Division of Clinical Research (DCR), retired on July 30.

“It’s time to pass the baton to the next generation,” she said.

Cordell earned her bachelor of arts degree in biology from Wesleyan University in Middletown, Conn., in 1979, and her bachelor of science degree in nursing from Columbia University School of Nursing in New York in 1981.

Upon graduating from Columbia, she became a staff nurse at Mount Sinai Medical Center working in the acute care medical and intensive care units, where she frequently served as the senior nurse and was responsible for all patients on the ward.

In 1983 Cordell joined New York’s Visiting Nurse Service (VNS) as a public health nurse—planning, coordinating and implementing care for homebound patients. As part of VNS, she worked with community agencies, local health departments and social services organizations to help people obtain Medicare, Medicaid and other government-sponsored assistance.

“I saw nursing as a way to have an impact on people’s health,” she said. “I especially enjoyed working at the Visiting Nurse Service as I saw people in their home environments and felt that I could have a direct effect on their health and well-being.”

In 1986, Cordell earned a master of public health degree in epidemiology from Columbia University. She left New York later that year and moved to Maryland to begin her federal career as a nurse epidemiologist at the Walter Reed Army Institute of Research. There she designed, conducted and analyzed epidemiologic research including studies of HIV infection in military women.

Two years later, Cordell joined NIH as a nurse consultant in NIAID’s Division of AIDS.

“I was working at Walter Reed during the early years of the HIV/AIDS epidemic and saw a job advertisement for a position in the Epidemiology Branch of what was then the AIDS Program at NIAID,” she said. “I wasn’t sure how I would do in an extramural position, where I would be a step removed from hands-on clinical research. I soon discovered it was a great fit for my skills—especially the multi-tasking that was required—and my nursing and epidemiology backgrounds fit perfectly as well. I am proud of my work on HIV and AIDS. It may not seem like a big deal now, but back in the 1980s we were still trying to figure out how HIV transmission occurred. It is amazing to me that HIV/AIDS is now a chronic illness with multiple treatment options and is no longer always a fatal disease.”

While at NIAID Cordell also worked with the Vaccine and Prevention Research Program and in the Division of Microbiology and Infectious Diseases, where she served as the project officer (PO) for the vaccine and treatment evaluation units.

As PO, she managed the clinical, scientific, administrative and budgetary aspects of vaccine trials, which spanned the spectrum of infectious diseases and all clinical trial phases. She also represented NIH on various inter-agency vaccine safety research policy working groups including the national vaccine advisory committee and the vaccine safety and communications subcommittee.

In 2002 Cordell joined NINDS as a nurse consultant and clinical research program manager in DCR. She was responsible for monitoring and evaluating grants and cooperative agreements for clinical research in neurology. She worked on the safety and risk assessment committee and led the Data and Safety Monitoring Boards (DSMB)—determining the level of safety monitoring needed for all NINDS grant applications with human subjects and serving as liaison between study investigative teams, DSMB members and her NINDS colleagues.

In 2011 Cordell helped to establish NeuroNEXT, the Network for Excellence in Neuroscience Clinical Trials created to conduct studies of treatments for neurological diseases through partnerships with academia, private foundations and industry.

“In a relatively short period of time, there have been 11 studies—clinical trials and biomarker studies,” she said.

In retirement, Cordell plans to do more—“read more, walk more and travel more,” that is.

“Throughout my NIH career, I’ve worked with the most dedicated people, who work tirelessly to improve public health,” she concluded. “I’ll miss learning something new nearly every day. However, I feel it is time for the next generation to take over moving the neurological field forward and reducing the burden of disease for all people.”

Volunteers Needed for Microbiome Study

Healthy volunteers 18-60 years old are needed for a new study investigating how changes in our diet can affect our intestinal microorganisms. The CLEAN-MED diet intervention study of the gut microbiome is a new study that wants to see the changes in the environment in the intestine. Participants will keep detailed food logs, and provide stool, urine and blood samples throughout the study. Options include a 9-week study or a year-long study. Contact the Office of Patient Recruitment at (866) 444-2214 (TTY users dial 711) or ccopr@nih.gov. Refer to study #000871-CC. Online: https://go.usa.gov/xJmwY.

MRI Study Needs Healthy Volunteers

Researchers at NIH seek healthy volunteers for an outpatient research study. The study aims to develop improved MRI techniques for studying brain function. The study will also look at new methods for monitoring brain flow to brain regions to understand normal and abnormal brain behaviors. Compensation is provided. For more information, contact the Office of Patient Recruitment at (866) 444-2214 or email us at ccopr@nih.gov. TTY users dial 711. Refer to study 00-N-0082. Online: https://go.usa.gov/xe7a2.

Healthy Volunteers Needed for Universal Flu Vaccine Study

NIAID researchers seek healthy volunteers 18 to 50 years old to participate in a universal influenza (flu) vaccine study. Scientists are testing an investigational flu vaccine (Flu-Mos VI) to determine safety and tolerability. There is no risk of infection from participation, as the investigational product does not contain any flu virus. Financial compensation is provided. Contact the Office of Patient Recruitment at (866) 444-2214 (TTY users dial 711) or ccopr@nih.gov. Refer to study #000410-I. Online: https://bit.ly/3QfIqWf.

Diet and SCD Study Seeks Adults

Does diet affect sickle cell disease (SCD)? Clinical Center researchers are conducting a study to help discover the answer. The study will examine the impact of diet and nutrition on the health of adults living with SCD. If you are age 18 or older, diagnosed with SCD and wish to participate, contact the Office of Patient Recruitment at (866) 444-2214 (TTY users dial 711) or email: ccopr@nih.gov. Refer to study #000518-CC. Online: http://go.usa.gov/xzFeR.
‘I STRENGTHEN MY NATION’
NIDA Premieres Video of Challenge Winners

Last year, the National Institute on Drug Abuse partnered with We R Native to host two youth challenges to celebrate the inherent strengths and resilience of Indigenous people that protect against substance use. A YouTube Premiere video that showcases winners of the “I Strengthen My Nation” Challenge competition was released on Aug. 5.

The competition asked young people ages 14 to 25 to share their ideas about Indigenous resilience through art and community service project ideas. Youth from more than 37 Tribal Nations submitted entries, highlighting the creativity, strength and passion young people have for enhancing their communities.

Among notable entries, Sierra Buffalohead, Ponca/Omaha, age 17, was recognized for her Digital Landscape.

“As an urban Native, with deceased parents and grandparents, I use my phone to connect with my extended family in Oklahoma, Nebraska and Ohio,” she said. “With technology I am no longer the lone Native in my physical world. I can learn about my culture, traditions and meet other Natives like me. Alcohol addiction ruined many of my relatives’ lives and took my mother’s life. When I am in a dark place and feel isolated, I can digitally connect with others to remind myself that I am not alone, and I come from a long line of warriors. I see technology as a digital landscape that can create a sacred space for Native people to gather. This landscape is represented in my drawing.”

We R Native is comprehensive health resource for and by Native youth, providing content about topics that matter most to them. Check out the gallery of winning entries at: https://www.wernative.org/nida-contest-gallery and the I Strengthen My Nation video announcing the winners: https://youtu.be/YydFhqHxVgw.

View the complete gallery of winning entries on We R Native: https://www.wernative.org/nida-contest-gallery.