March 15, 2024 Vol. LXXVI, No. 6

National Institutes of Health

Celebrating Women of NIH

Our Women's History Month series continues, featuring two curious-minded NIH'ers, each with a background in science, who now find fulfillment supporting the NIH mission in administrative roles.

CREATIVITY IS KEY

Jacobs Made 'Career Out of Curiosity'

BY CARLA GARNETT

Dr. Cheryl Jacobs credits innate inquisitiveness for sparking her career in science.

"I think it was an evolution, but at the root of it was curiosity," she recalled recently. "As a kid, you always interact with your environment-plants, bugs, and trees. I was always out in nature or fiddling around with things

in the attic. And I always wanted to understand how things work. I even have that



Dr. Cheryl Jacobs

curiosity today. I love crafting or building things, putting things together. I didn't realize you could make a career out of curiosity, but that's what happened. That's what led me to science and into a

passion that I turned into a career."

Jacobs joined NIH in 2014 as a postdoctoral fellow in the Laboratory of Human Carcinogenesis at the National Cancer Institute (NCI). Led by Senior Investigator Dr. Stefan Ambs, the group worked in

SEE JACOBS, PAGE 8

'IT'S A BLAST!'

Gaillard Relishes Her Role Supporting Science

BY DANA TALESNIK

Dr. Shawn Drew Gaillard prides herself on being nosy. It's a trait that propelled her

toward science in the first place and, early on, literally caused an explosion.

Gaillard has devoted her entire career to NIH and has worn many hats over the years. She currently is a division



Dr. Shawn Drew Gaillard

director at the National Institute of General Medical Sciences (NIGMS), where she

SEE GAILLARD, PAGE 8

Kriegel Suggests Strong Organizational Culture Drives Results

BY ERIC BOCK

Workplace culture is more than ping-pong tables in the lobby, happy hours after work, leadership retreats and other office perks, said Dr. Jessica Kriegel during the first **Deputy Director** for Management



Dr. Jessica Kriegel

Seminar Series lecture of 2024.

"Culture is the way that people think and act to get results," said Kriegel, chief scientist of workplace culture at Culture Partners.

Our concentration is pulled in many directions. In addition to the responsibilities

SEE WORKPLACE, PAGE 4

DATA FOR DISCOVERY

Resnick Discusses Data-Sharing Platforms for Precision Care

BY DANA TALESNIK

Vast amounts of patient data get generated over time-electronic health records across specialties, diagnostic scans, follow-up tests, care plans, doctors' observations. Such data can reveal all sorts of health



insights, even more efficiently if the information could be accessed, analyzed and shared across the health system.

Dr. Adam Resnick, director of the Center for Data-Driven Discovery in Biomedicine at SEE DATA-SHARING, PAGE 6



NIH holds joint meeting with FDA. See p. 5.

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AI PROMISE, PERILS

'Father of Internet' Cerf To Deliver Rall Cultural Lecture

Dr. Vinton Cerf, vice president and chief internet evangelist for Google, will deliver NIH's annual J. Edward Rall Cultural Lecture on Tuesday, Mar. 19 from 1:30 to 2:30 p.m. ET in Masur Auditorium,

Bldg. 10. The title of the event is the "Promises and Perils of AI in Biomedical Research and Health Care Delivery."

The first Rall Cultural Lecture since 2019, the talk also will be publicly viewable via https:// videocast.nih.gov/ watch=54305. In addition, NIH Director Dr. Monica Bertagnolli will



Dr. Vinton Cerf

conduct a "fireside chat" with Cerf.

A thought leader and public face of Google, Cerf is widely recognized as one of the "fathers of the internet" who co-designed TCP/IP protocols and internet architecture.

During his tenure from 1976 to 1982 with the Department of Defense's Advanced Research Projects Agency (DARPA), he led development of internet and internet-related packet data transport and security technologies.

As a vice president of MCI Digital Information Services, Cerf led engineering of MCI Mail, the first commercial email service to be connected to the internet. Subsequently he helped design advanced networking frameworks for delivering combinations of data, information, voice and video services for business and consumer use.

Long a champion of internet neutrality and full accessibility, Cerf in recent years has voiced his concern about and proposed possible solutions to combat dangers such as the long-term durability of digital storage, the spread of misinformation and rapid growth of artificial intelligence (AI).

The Rall event is free to all NIH staff but tickets will be required. Tickets will be given to institutes, centers and offices for distribution. Sign language interpreting services will be provided. Individuals who need other reasonable accommodation to participate should contact the Wednesday Afternoon Lecture Series (WALS) office, WALSoffice@od.nih. gov, (301) 594-6747.

Part of the NIH Director's WALS, the lecture is named in honor of Joseph "Ed" Rall, who helped to define NIH's modern Intramural Research Program and establish a stable academic-like and culturally rich community within a rapidly expanding

NIAID Reveals Former Director Fauci's Official Portrait

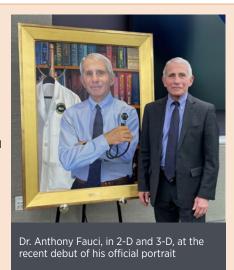
The official portrait of Dr. Anthony Fauci, former director of the National Institute of Allergy and Infectious Diseases (NIAID), was revealed recently in a brief ceremony at NIAID's Fishers Lane Bldg. in Rockville. Md.

Fauci's NIH career began in 1968, when he joined NIAID's Laboratory of Clinical Investigation as a clinical associate. He served as NIAID director from 1984 to 2022 and the chief medical advisor to the president from 2021 to 2022.

In 2008, President George W. Bush awarded Fauci the Presidential Medal of Freedom, the highest civilian award in the United States, for his work on the AIDS relief program PEPFAR.

As a national icon during the Covid-19 pandemic, Fauci has been the subject of numerous artworks in

a variety of media. The official likeness was painted in oil on canvas by portrait artist Jon Friedman, who has captured the images of several other former NIH'ers, including Dr. Harold Varmus, former NIH director and former director of the National Cancer Institute (NCI); Dr. Carl Kupfer, former director of the National Eye Institute; and Dr. Maxine Singer, president of the Carnegie Institute of Washington and former researcher at NCI and the National Institute of Arthritis and Metabolic Diseases (now NIAMS).



government agency. To learn more about his life and legacy, see the video posted at https://www.youtube.com/watch?v=1RMRExhUcyo&t=19s.

CCDI Holds Community Forum

The National Cancer Institute's Childhood Cancer Data Initiative (CCDI) will hold its first Community Forum of 2024 on Monday, Mar. 18 from noon to 1 p.m. ET. Community forums are part of CCDI's ongoing webinar series and provide an open space for discussion and insights.

Beyond providing important CCDI updates, the forum looks for active input. Contribute to the conversation by sharing questions and feedback during the Q&A session.

CCDI webinars are free and open to the public, though registration is required to receive the event link. For more information, including past event recordings, visit https://go.nih.gov/7pEWETS. Also, explore https://events.cancer.gov/ to enroll in any available CCDI events.

Individuals who need reasonable accommodation should email CCDlevents@mail.nih.gov as soon as possible.

Sailing Club Holds Membership Drive

The NIH & NOAA Sailing Association (NIHSA) is a Recreation and Welfare Association activity club. Membership is open to NIH and NOAA (National Oceanic and Atmospheric Administration) employees, fellows, contractors and their families, and NIH patients.

The club's main activity is sailing five Flying Scots, owned by the club and maintained in slips south of

Annapolis, Md., on the South River. Club meetings are held each month and are open to all members. Yearly membership dues vary according to the level of participation. Members qualify to charter club boats by completing the NIHSA basic training course or by demonstrating competence in a comprehensive checkout sail.

NIHSA provides many opportunities for club members to get together and share time on the Chesapeake Bay. Check out the website for more details: www.nihsail.org.

Off-Campus NSC Shuttle Ends

The off-campus shuttle route to the Neuroscience (NSC) Bldg. at 6001 Executive Blvd. has been discontinued indefinitely due to insufficient ridership.

The Montgomery County Ride On bus routes 26 and 46 or Metrorail from Medical Center to White Flint Metro station, followed by a short walk, are alternatives for travel between the NSC Bldg. and the Bethesda campus. For more help planning transportation or visualizing routes, use the WMATA trip planner at https://www.wmata.com/schedules/trip-planner/.

For information about the NIH Transhare Program and to explore available ridesharing options such as vanpools and carpooling, contact the NIH Parking Office at (301) 496-5050 or visit the website https://go.nih.gov/IMOvpJW.

If you have questions or need additional information, contact Louise Davis, transportation manager, Division of Amenities and Transportation Services: davislou@mail.nih.gov or (301) 496-9621.

NIH's FAN Holds Inaugural Town Hall

BY JOY ZHAO AND LISA YUAN

three years.

The NIH Federation of Asian American. Native Hawaiian and Pacific Islander (AA & NHPI) Network (FAN) successfully organized its first Town Hall early this year to bring members together to discuss challenges and opportunities for AA & NHPIs in the NIH workforce.

FAN chair Dr. T. Jake Liang of the National Institute of Diabetes and Digestive and Kidney Diseases opened the event with a comprehensive overview of FAN's history, mission, vision and notable accomplishments in the past

Established in April 2021 during the unprecedented challenges of the pandemic, Liang explained, FAN emerged when AA & NHPI leaders across NIH joined forces in response to the alarming surge in anti-Asian hate crime in the United States.

"Like many FAN members, I did not become

proactive in advocating for AA & NHPIs at NIH until 2021 when the anti-AA & NHPI hate crimes were widespread," said Liang. "We all realized then that silence is not an option and together we are indeed stronger."

The first AA & NHPI employee resource group (ERG) at NIH, FAN is dedicated to fostering an inclusive workplace at

NIH through a data-driven, community-informed approach. Its core objectives include addressing issues impacting the AA & NHPI workforce, identifying actionable solutions and actively educating and engaging NIH decision-makers and the broader community.

FAN chair Dr. T. Jake Liang speaks.

At the Town Hall, FAN steering committee members Dr. Anna Han of Office of the Director and Dr. Ji Luo of the National Cancer Institute put a spotlight on an important issue affecting the workforce at NIH: the scarce representation of AA & NHPIs in senior leadership positions. They presented a report on a survey FAN conducted in





One Town Hall goal was to increase understanding of the experiences of NIH's AA & NHPI workforce.

2022, which aimed to gain a nuanced understanding of the experiences of NIH's AA & NHPI workforce. Specifically, the survey sought to uncover the challenges, biases and barriers hindering advancement of AA & NHPI principal investigators to leadership positions in the Intramural Research Program.

"We had a lot of anecdotes and stories, but we didn't have data to back it up," said Han. "To

> remedy this, we launched the survey to get a better sense of AA & NHPIs at NIH."

The survey findings underscored that Asian American principal investigators aspire to advance in their careers but encounter significant obstacles such as stereotypes, biases and institutional barriers. Luo concluded the

presentation by outlining FAN's key recommendations for leadership, aimed at addressing and closing the AANHPI leadership gap within NIH.

A panel discussion, led by FAN members Dr. Kelvin Choi of the National Institute of Minority Health and Health Disparities and Dr. Anirban Banerjee of the Eunice Kennedy Shriver National Institute of Child Health and Human Development, followed the presentation, featuring NIH senior leaders: Dr. Marie Bernard, chief officer for scientific workforce diversity; Dr. Noni Byrnes, director of the Center for Scientific Review: Dr. Michael Chiang, director of the National Eye Institute; Dr. Rena D'Souza,

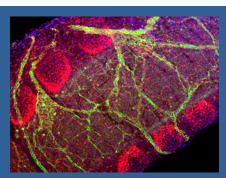
> director of the National Institute of Dental and Craniofacial Research; Dr. Carl Hashimoto, director of faculty development in the Office of Intramural Research (OIR); Dr. Roland Owens, acting OIR principal deputy director; and Kevin Williams, director of the Office of Equity, Diversity and Inclusion.

Panelists offered valuable perspectives, demonstrating a shared goal of cultivating a workplace where

everyone, regardless of background, has equal opportunities to contribute and succeed.

A Q&A session with the panelists provided dynamic discussion focused on structural changes, such as implementing the NIH equity committee, improving communication from leadership to AA & NHPI staff about career opportunities and raising awareness of the FAN survey findings and recommendations.

More than 100 individuals attended the Town Hall in person, while an additional 100 joined virtually. The event, Liang said, was a "rare occasion to see so many AA & NHPI faces in the same room and the cultural heritage we commonly share, yet also the diversity among us. I was also delighted that we had attendance from non-AANHPI groups, a testimony to the common interest and goal we all share in the NIH community."



ON THE COVER: A small section of the trachea, or windpipe, of a developing mouse. Although it's only about the diameter of a pinhead at this stage of development, the mouse trachea has a lot in common structurally with the much wider and longer human trachea.

IMAGE: RANDEE YOUNG AND XIN SUN, UNIVERSITY OF WISCONSIN-MADISON

The NIH Record

Since 1949, the NIH Record has been published biweekly by the Editorial Operations Branch. Office of Communications and Public Liaison, National Institutes of Health, Department of Health and Human Services. For editorial policies, email nihrecord@nih.gov.

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Workplace

CONTINUED FROM PAGE 1

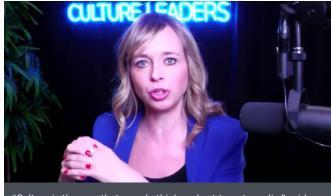
of home and work, our phones constantly notify us of new messages, likes and comments. "We're just so scattered that we take surface-level solutions for surface-level problems," she noted. "We're not going deeper."

The key to creating an intentional workplace culture is the Results Pyramid Model, Kriegel explained. Results-what we all want-are at the top of the pyramid. Actions-what needs to be done to create results-sit just below.

"That's where most leaders stop their thinking," she said. "They're like, 'results come from actions. Let me get people to take a bunch of action."

In the business world, for instance, these actions look like restructuring organizational charts, implementing new technologies or strategic planning. They fall into what Kriegel calls the "action trap," where "you just focus on results and actions."

It's the hamster wheel of work, where leaders start micromanaging their employ-



"Culture is the way that people think and act to get results," said Kriegel during the first DDM Seminar of the year.

beliefs." Everyone has experiences over the course of their lives that influence what beliefs they "hold about the nature of the world and what's important."

Telling stories is a "powerful" tool to create new beliefs. Recently, she worked with the director of a hospital's emergency room (ER) department to ensure staff collect next-of-kin information for every patient. Staff believed collecting the information wasn't important because they were trying to save lives.

on what they were told. Staff saved his life. The stories got staff to understand that collecting patient details wasn't a waste of time. Data is potentially life-saving.

To sum it up, experiences form beliefs, beliefs drive actions and actions produce results. Kriegel said aligning each level of the pyramid is the first step to creating to an intentional workplace culture.

After leaders define the type of culture they want, they must think about their purpose and vision, she said. Purpose is the answer to "why does your organization exist?" For example, Kriegel's purpose is "to unleash the power of culture." The shorter the purpose, the better.

"Once you understand your purpose, then you can identify the vision, which is 'where are you going?" she said.

To implement the vision, leaders must identify key results. These are short-term, meaningful and memorable outcomes. She recommended that companies focus on three key results.

After major results are set, organizations must define "strategic anchors," which are the bets a leadership team believes will lead to success. Defining anchors forces leaders to think about strategy.

Finally, leaders must answer the question, "How do we need to shift our thinking, in order to be aligned with the actions we need to take...so we can get our vision and achieve those results?"

Together, these components make up what Kriegel calls the culture equation. Companies that have clear visions, key results, strategic anchors and cultural beliefs can concisely and quickly tell their story. It can also make it easier to navigate a larger company and identify prospective employees who share the same values.

Having a well-thought-out culture equation "keeps our eye on the prize," Kriegel concluded. "It makes me feel like there's meaning in the work that we're doing. We're aligned. It makes such a difference."

NIH'ers can view the full seminar at https://videocast.nih.gov/watch=53995.

"The foundation of the results pyramid is where you, the leader, come in. It's how you intentionally shape people's beliefs."

~DR. JESSICA KRIEGEL

ees. Nagging isn't motivational. To avoid getting stuck there, she suggested, leaders must dig deeper into the next layer of the pyramid. That's beliefs—they are what drives

people's actions.

Early in her career, she had a performance review. In the meeting, her supervisor said, "You millennials, you need to bake a little bit longer." Kriegel felt misunderstood, overlooked and undervalued. The feedback was unclear and it wasn't tied to any action.

Effective feedback, on the other hand, concentrates on action. By doing that, a leader can focus on a cultural belief. The employee then understands what they did, the impact of their action, and how it demonstrated the right beliefs.

"The foundation of the results pyramid is where you, the leader, come in," she said. "It's how you intentionally shape people's

The director worked with Kriegel to come up with two stories to highlight the importance of data collection. In the first story, a woman was admitted to the ER and fell unconsciousness during her stay. When she woke up, staff did not ask about her next of kin. They had no information about her medical history. They followed the standard treatment for her condition. Despite their best efforts, the patient passed away.

"They found out later she had a medical condition that if they had known about, they would have possibly been able to save her," Kriegel recounted.

For the second story, the director described an older man in the ER. This time. however, staff collected his information. He also fell unconscious during treatment. Staff called his daughter and got his medical history. They adjusted their treatment based



Black History Events Feature Physician-Producer Walker-McGill

BY JOY POSTELL AND PATRICIA SAUCEDA KRAMER

In the heart of February, Black History Month, NIH's Office of Equity, Diversity and Inclusion hosted an interview with Dr. Cheryl Walker-McGill,



executive producer of the documentary Someone Else's Shoes. The film spotlights the significant contributions of St. Agnes Hospital, one of the first Black-owned and operated hospitals in Raleigh, N.C.

Walker-McGill's documentary has been described as "not just a film, but also a

movement that honors the legacy of Black medical professionals who fought against racial disparities in health care."

During the NIH event, Walker-McGill narrated the story of the pioneering institution, which stood as a beacon of hope and resilience in the face of systemic racial barriers. Attendees got a behind-the-scenes look at what inspired Walker-McGill to create the documentary and the challenges she overcame in the process. She gave a glimpse into her career, perspectives on health care advances and vision for future equality in medical services.

Later in February, another event, "Trailblazers in Health Equity and Oral Health"—a panel discussion, shed light on three other notable figures in Black history: Dr. Kenneth H. Chambers, one of the first Black board-certified obstetrician-gynecologists in Charlotte, N.C.; Dr. Brenda Armstrong, one of the first Black board-certified pediatric cardiologists in the United States; and Dr. Paul A. McGill, the first Black orthodontist in Charlotte and late husband of Walker-McGill.

Hosted by the National Institute of Dental and Craniofacial Research (NIDCR), the discussion was part of the institute's Black History Month observance. Panelists included Radm. Michael Windsor Johnson, assistant surgeon general and chief dental officer in the Public Health Service; NIDCR Deputy Director Dr. Jennifer Webster-Cyriaque; and Walker-McGill.

Walker-McGill described the challenges and triumphs of McGill's career. Insights were shared on how today's health care leaders are building upon the foundations laid by him and other trailblazers to enhance access to oral health care for all Americans.

A medical doctor, allergist-immunologist, consultant and educator, Walker-McGill has an extensive background in clinical medicine, health policy and medical regulation. Her work during the Covid-19 pandemic made a substantial impact on health care delivery and policy.



At the recent joint leadership session, FDA Commissioner Dr. Robert Califf and NIH Director Dr. Monica Bertagnolli share a light moment during a day of discussions. PHOTO: RYAN BAYHA

NIH, FDA Leaders Gather to Chart Bold Path for Big Initiatives

BY RYAN BAYHA

Opening the NIH-FDA Joint Leadership Council (JLC) meeting on Feb. 13, NIH Director Dr. Monica Bertagnolli said, "Rob and I have been waiting for this meeting for a long time!"

The "Rob" she was referring to was FDA Commissioner Dr. Robert Califf, who, with Bertagnolli, co-chairs the JLC, a forum for NIH and FDA institutes and center directors along with leaders in NIH's Office of the Director to collaborate on big ideas. The council convenes several times a year, or as needed. This was Bertagnolli's first meeting as NIH director.

The agenda featured discussions on electronic health records, artificial intelligence, increasing clinical trial participation and diversity, and evidence generation.

While exchanging information with FDA colleagues is always beneficial, JLC is also built to take bold actions. Currently its working groups are

 developing new approaches to help individuals of all ages stop using tobacco products

- investigating questions to inform regulatory decisions related to nutrition
- developing a glossary of inconsistent and/or ambiguous clinical research terms

Leaders of both agencies agreed to create a new working group to generate evidence on developing a "National Problem List" of high-priority, unanswered questions in clinical practice. This ambitious goal will also feature extensive collaboration with colleagues at the Centers for Disease Control and Prevention, Centers for Medicare and Medicaid Services (CMM), Office of the National Coordinator for Health Information Technology and many other federal agencies.

"These efforts represent an unprecedented scope and there is an urgent need to understand the optimal use of health interventions in real-world practice," said Califf about the potential impact the evidence-generation group could have.

Enthusiasm among attendees was evident during discussions. Closing the meeting, Bertagnolli echoed the thoughts of many in the room, "Ok, let's get to work!"

NIH also maintains a JLC with CMM. To learn more, contact Ryan Bayha at bayhar@mail.nih.gov in the NIH Office of Science Policy.

Data-Sharing

CONTINUED FROM PAGE 1

Children's Hospital of Philadelphia (CHOP), is building scalable data-sharing platforms for pediatric patients. His model connects layers of medical data into an interoperable

framework toward improving cross-disciplinary research and patient care.

Resnick recently spoke at the National Institute on Deafness and Other Communication Disorders (NIDCD) Director's Seminar series. NIDCD leaders developed the series to highlight innovative

research with the potential to improve the lives of people with communication disorders.

"It's an exciting endeavor to think about the possibility of large-scale data sets and infrastructure created for research to become proximal to care," Resnick said.

Resnick's team began collecting patient samples and generating molecular data sets on children with brain tumors. To advance a precision medicine framework, he said, "you have to think about repositories, data mining, biomedical informatics, hypothesis generation, genotype-phenotype connections [toward] clinical trial enrollment of subjects."

They started small then grew rapidly with more than 5,000 participants enrolled at 34 sites, as part of the Children's Brain Tumor Network (CBTN), in what is the largest pediatric brain tumor study of its kind. The goal then became creating a data-sharing platform accessible across disciplines, diseases and expertise.

In 2017, CHOP launched the Gabriella Miller Kids First Data Resource Center, a cloud-based repository of genomic and clinical data sponsored by NIH's Common Fund. Its namesake Miller, a girl from Virginia, died at age 10 of brain cancer. The initial vision for CBTN was to focus on pediatric brain cancer. In the setting of Kids First, NIH dramatically expanded the scope.

NIH stipulated "not only are you going to work across all brain tumors, you're going to work across all pediatric cancer and bring in structural birth defects and congenital abnormalities," Resnick said.

A common framework then emerged. "It took time to build the next iteration of infrastructure that empowered cross-condition discovery," said Resnick. "This would never have happened if it wasn't for an NIH-based

vision for data-sharing, interoperability and collaboration."

Today, Kids First has more than 21,000 whole genomes across more than 6,000 phenotypes. It's one of the largest whole genome and molecular data sets for pediatric cancer and structural birth defects.

"It was a learning experience for me that platforms not only support

and enhance coordination around stakeholders that know each other, but that they are extremely powerful to bring together people who may not know each other," Resnick said.

This rationale also underpins the INCLUDE project (Investigating Co-occurring conditions across the Lifespan to Understand Down syndrome) that links 21 NIH institutes and centers as research partners to study conditions that disproportionately affect individuals with Down syndrome. Resnick co-leads its Data Coordinating Center.

Like the Kids First platform, INCLUDE leverages the cloud, allowing others to

connect and contextualize the information, explained Resnick.

Researchers can analyze across phenotypes, such as autism or hearing loss, and genomics or other molecular features. If an investigator inputs a gene of interest, that gene may be implicated in other contexts that interest other researchers. "That's a powerful framework for prioritizing which genes matter for you or for somebody else," he said.

When building such interoperable platforms, Resnick said he factored in that clinicians and data scientists have different ways of communicating and using information.

"They speak completely different languages from the clinical endpoints you're trying to help and the data landscape," he said. "They ask questions very differently. And it's challenging to create a framework that supports what is often the rapid point-and-click requirements for someone who is not a data scientist and at the same time a user interface that meets the needs of data scientists and bioinformaticians."

Resnick underscored that phenotypes change over time with new findings, successive diagnostics, treatments and outcomes. The key is capturing and analyzing this longitudinal data in ways that support a vision of individualized measurements.

"This is where precision medicine thrives," Resnick said. Often, "the analysis happens in the doctor's head based on what they know and remember and have



Resnick (second from I) on a panel with moderator Dr. Geoffrey Ginsburg, chief medical and scientifc officer of the *All of Us* Research Program; Valentina Di Francesco, director, Office of Genomic Data Science, NHGRI; and NIDCD Clinical Director Dr. Joshua Levy **PHOTOS: NIDCD**





Resnick's group wants to make vast amounts of patient data more widely shareable and usable among health professionals.

IMAGE: NAN_GOT/SHUTTERSTOCK

experienced. Precision medicine requires that next layer of interactions between that patient's data, which is suddenly more complex and multimodal. Part of it is not interpretable [now] but might be tomorrow when the next patient comes along and looks like that patient."

An ongoing challenge has been how to integrate the notes and narratives created as part of clinical care. When a radiologist looks at a patient's scan or an oncologist works on a care plan, they become storytellers, said Resnick. "That language embedded in the care is absent from most of our structured data." And that information is critical.

Clinically, patients are cared for by integrated teams of specialists, but the data behind such care is often siloed without a single space for data-sharing. "We don't want each specialist working in different places," Resnick emphasized. "They'll make their separate discoveries and never talk."

Resnick's team has spent the past year creating workflows that bring de-identified imaging data into shared project spaces in the cloud, along with genomics, so the radiologist and genomicist, for example, can each see what they want while sharing, combining and analyzing results that can advance discovery and ultimately precision diagnostics and care.

Resnick's team is also exploring ways to facilitate real-time data exchange and the potential for artificial intelligence programs to help interpret and query data.

"As scientists, a promise we give to patient families is 'if you can measure it, you can understand it—if we can understand it, we can intervene with it," Resnick said. "If that's true, then our job is to accelerate that process through technology."

During an ensuing panel discussion, leaders from NIDCD, the National Human Genome Research Institute and the Office of the Director's *All of Us* Research Program weighed in on the potential of linking data science, genomics and precision medicine to advance care.

Resnick underscored the need for a feedback loop. Clinicians and researchers complain about the time-consuming task of inputting data because they usually don't get anything back, he noted.

"Imagine if you could tell a clinician, 'If you put your data in this way, you

can immediately see your patient in the context of all other patients."

Data-sharing, they agreed, is a collective effort.

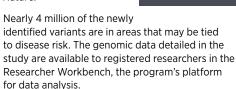
"We need to look not only outside of our own fields, outside of health care, but also within," said NIDCD Clinical Director Dr.

Joshua Levy. "Clinically, we are way too siloed in our own subspecialties. From a data standpoint, the same holds true. The representation on this panel speaks to the importance of breaking down these barriers. We don't need to recreate 10 different data solutions. We can integrate and learn from each other."

All of Us Data Identifies 275 Million New Genetic Variants

Researchers have discovered more than 275 million previously unreported genetic variants, identified from data shared by nearly 250,000 participants of NIH's All of Us Research Program.

Half of the genomic data are from participants of non-European genetic ancestry. The unexplored cache of variants provides researchers new pathways to better understand the genetic influences on health and disease, especially in communities who have been left out of research in the past. The findings are detailed in *Nature*.



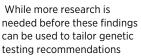
"As a physician, I've seen the impact the lack of diversity in genomic research has had in deepening health disparities and limiting care for patients," said Dr. Josh Denny, All of Us chief executive officer and an author of the study. "The All of Us dataset has already led researchers to findings that expand what we know about health—many that may not have been possible without our participants' contributions of DNA and other health information. Their participation is setting a course for a future where scientific discovery is more inclusive, with broader benefits for all."

To date, more than 90% of participants in large genomics studies have been of European genetic ancestry. NIH institute and center directors noted in an accompanying commentary article in *Nature Medicine* that this has led to a narrow understanding of the biology of diseases and

impeded the development of new treatments and prevention strategies for all populations. Now, many researchers are using the *All of Us* dataset to advance precision medicine for all.

For example, in a companion study published in Communications Biology, a research team led by Baylor College of Medicine, Houston, reviewed

the frequency of genes and variants across different genetic ancestry groups in the All of Us dataset.
Authors found significant variability in the frequency of variants associated with disease risk between different genetic ancestry groups and compared with other large genomic datasets.



for specific populations, researchers believe the difference in the number of these variants may be influenced by past studies' limited diversity and their disease-focused approach to participant enrollment, rather than a difference in the prevalence of the variants.

"All of Us values intentional community engagement to ensure that populations historically underrepresented in biomedical research can also benefit from future scientific discoveries," said Dr. Karriem Watson, All of Us chief engagement officer. "This starts with building awareness and improving access to medical research so that everyone has the opportunity to participate."

More than 750,000 people have enrolled in *All of Us* to date. Ultimately, the program plans to engage at least one million people who reflect the diversity of the U.S. and contribute data from DNA, electronic health records, wearable devices, surveys and more over time. The program regularly expands and refreshes the dataset as more participants share information.



Dr. Karriem Watson (I), Dr. Josh Denny

Jacobs

CONTINUED FROM PAGE 1

molecular epidemiology studying health disparities, in particular disparities in prostate cancer. The team was looking at the diagnoses and progression of disease in African-American versus White men.

Two years later, Jacobs moved into her current role as a health science policy analyst in the NIH Office of Science Policy. Is the biomedical research workplace any different than it was over a decade ago?

"I think it's changed tremendously," she noted. For trainees and employees in general, "the ability to report bad actors in sexual harassment or in discrimination has been amplified and made more transparent. You now know where to go and who to talk to. Trainees have unionized. And they are strengthening their impact and their voices."

In addition, NIH has added elements to the PMAP [Performance Management Appraisal Program], Jacobs said, so all staff members are held accountable for their actions when it comes to workplace environment and that has made it more hospitable. There's been additional training about microaggressions, for instance, and use of pronouns in the LGBTQ space.

"I've just seen the culture at NIH in general be more accepting to educating individuals at any age to make the environment more inclusive and make people aware of their actions," Jacobs noted. "I think NIH also is more willing to engage in difficult conversations to educate people so that they may not inadvertently make someone feel uncomfortable."

Jacobs said the best advice she ever heard came from some of her peers.

"They told me to be the best that I can be, and not worry about trying to be the best that I think others think I should be," she said. Imposter syndrome is real and can be crippling early in a career.

She passes along similar counsel when advising young people—particularly women—who may be thinking of pursuing science professions: Remember your originality in route.

"Don't lose creativity in how you get things done," she tells them. "Because we are in the minority of people who are in science, there's a certain idea that you must work 12-hour or even 14-hour days to be successful. And I've seen many different people have different models, and still be successful. So be creative in how you're able to get your work done—creative meaning if you have competing priorities, be it family, health, or whatever, don't let those competing priorities make you feel like you can't be as accomplished as others. You can be creative in how you can accomplish your work and still be as successful."



Women's history at NIH. Can you identify the eight women shown? Each served on staff at NIH over the course of her career and each made a significant contribution to history. Answers will be published in the Mar. 31 issue.

Gaillard

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oversees the division's funding of research grants and serves as a key member of the institute's leadership team.

She started out, though, behind the bench as a scientist, motivated by her innate curiosity.

As a child, she'd conduct random experiments. "I constantly wondered what would happen if..." One day, she mixed chemicals and accidentally blew up a kitchen cabinet. Luckily, her parents were forgiving and kept encouraging her to pursue her passion for science.

Gaillard went on to study chemistry at Spelman College and earned a Ph.D. in biology from Howard University. In graduate school, she studied sickle cell anemia, inspired to learn more about the disease for which her cousin is a carrier.

"A wonderful thing about working in science is that you can really move the needle forward to help individuals," she reflected. "This is true whether you're in a lab doing research or working in a role that supports

the research of others. It's why we're all here at NIH."

Gaillard arrived at NIH nearly 30 years ago right out of college doing predoctoral and then postdoctoral research at multiple institutes. She also enjoyed leading local students on tours of her lab. She became increasingly drawn to NIH's administrative side.

"I still get excited by the science and it's equally exciting to be in science administration where you get to look at the landscape and say, 'Hmm, where are the gaps? How can we broaden participation in this research area? I always like to say there's a large table for science and there's room for all of us."

Her advice? Be nosy. Be inquisitive. "All of us are born scientists," she said. "We're all wired to wonder. That passion might even help us create a new lane [of inquiry] that doesn't currently exist."

Gaillard is glad to see more women entering science-related careers. When she arrived in the 1990s, "I didn't see a lot of reflection in the mirror of women who were lab chiefs," she said. "And as an African-American woman, it can be rather daunting." While some hurdles remain, she appreciates seeing more women on scientific panels and in leadership roles.

As director of NIGMS's Genetics, Molecular, Cellular, and Developmental Biology Division, Gaillard works with three branch chiefs and a cadre of program officers who manage grant applications among 29 different science areas.

"It's a blast," she said of her job. "There are new things to discover. It's a wonderful time to be in science."

Of course, not every applicant gets funded. She's glad that some principal investigators persevered, continued the dialogue with staff and others and got the award on a successive try.

"In the extramural program, we have a duty to make sure we help pull people from the brink of giving up on science or thinking they don't belong for whatever reason," Gaillard said. "Maybe they just needed to fine-tune [their application]. I think we're in a position to help the science infrastructure from that standpoint. We need great minds to come in and think of new ways to solve really big problems.





NIGMS Director Dr. Jon Lorsch speaks to Asbury's Keese School of Continuing Education. PHOTO: RHODA MACKENZIE/ASBURY METHODIST VILLAGE At right, Lorsch talks during the Q&A with Asbury resident and former NIH-funded researcher Dr. Frederick "Fred" Kauffman. Now a professor emeritus of pharmacology and toxicology at Rutgers University, Kauffman says he "owes [his] entire 30-year career" to NIH. PHOTO: OWEN OLDER

NIGMS Director Shares Basic Science Breakthroughs with Lifelong Learners

Dr. Jon Lorsch, director of the National Institute of General Medical Sciences (NIGMS), spoke to continuing learners



Lorsch stands with Dr. Joye Jones, Asbury resident and former member of NIGMS's leadership team. During her career, Joye was a postdoc at NCI and served on a study section for NHGRI.

PHOTO: RHODA MACKENZIE/ASBURY METHODIST VILLAGE

at Asbury Methodist Village, a 55+ community in Gaithersburg, Md., on Feb. 8.

Titled "How Basic Science Leads to Medical Breakthroughs," the talk was arranged through Asbury's Keese School of Continuing Education, a robust program run entirely by Asbury residents. Lorsch was introduced by Dr. Joye Jones, an Asbury resident who worked for NIGMS in the late 1980s and early

1990s as a health scientist administrator and section chief in what is now the institute's Division of Genetics and Molecular, Cellular and Developmental Biology. Jones also served as the NIGMS deputy associate director for program activities.

Lorsch's talk emphasized the critical role of basic research in medical breakthroughs



Audience members raise hands after Jones asked who's familiar with NIGMS.

PHOTO: OWEN OLDER

such as Cisplatin, CRISPR and the Covid-19 vaccines. He explained that such discoveries emerge on complex foundations of fundamental information and knowledge contributed by many people over many years. A Q&A followed, with several audience members sharing stories of their own research careers and connections to NIH.

NIMHD To Host Minority Health 5K

Celebrate National Minority Health Month 2024 by participating in the Minority Health Walk, Run, Roll 5K on Thursday Apr. 11, 11:30 a.m. to 1 p.m. (rain or shine) on NIH's Bethesda campus.

The race will start and finish on the front lawn of Bldg. 1. Participants will exit campus, travel the perimeter and return through security. To register, visit https://forms.office.com/g/7ygVOANUDs.

To sponsor a water station and show your institute/center/office spirit, contact Seppi Sami at Seppideh.Sami@nih.gov.

The event is jointly sponsored by the National Institute on Minority Health and Health Disparities, NIH's Office of Research Services and the Recreation and Welfare Association Fitness and Wellbeing Program.

Individuals who need sign language interpreters and/or reasonable accommodation to participate may contact Edgar Dews at Edgar.Dews@nih.gov or (301) 594-8424. Requests should be made at least five days in advance of the event.



5K participants approach the finish line in 2023. PHOTO: MARLEEN VAN DEN NESTE

Surgery Provides Long-Term Blood Glucose Control, Type 2 Diabetes Remission



People with type 2 diabetes who underwent bariatric surgery achieved better long-term blood glucose control compared to people who received medical management plus lifestyle interventions, according to a new study supported by NIH.

The participants who underwent bariatric surgery, also called metabolic or weight-loss surgery,

were also more likely to stop needing diabetes medications and had higher rates of diabetes remission up to 12 years post-surgery. Results of the study were published in *JAMA* and funded by NIDDK.

"While there are many factors involved, and not all of them are completely understood, bariatric surgery typically results in greater weight loss that affects a person's metabolic hormones, which improves the body's response to insulin and ability to maintain healthy blood glucose levels," said NIDDK project scientist Dr. Jean Lawrence. "These results show that people with overweight or obesity and type 2 diabetes can make long-term improvements in their health and change the trajectory of their diabetes through surgery."

The current study is a follow-up that combined data from four independent single-center randomized trials conducted at clinical sites in the United States. The original trials evaluated the effectiveness of bariatric surgery compared to intensive lifestyle and medication therapy involving oral and injectable diabetes medications including insulin, for adults with type 2 diabetes and overweight or obesity. While some participants in the study were prescribed GLP-1 agonists as part of their medical management of diabetes, these drugs were not specifically examined in the study. Investigators from the four individual studies pooled their data to provide a larger and more geographically diverse data set to evaluate efficacy, durability and safety of bariatric surgery to treat type 2 diabetes.

In total, 262 participants from the four original studies enrolled in the current study. Of these, 166 were randomized to surgery and had undergone one of three bariatric surgery procedures. The remaining 96 participants were randomized to the medical/lifestyle management group. The medical/lifestyle interventions have previously been shown effective for weight loss.

All participants were between ages 18 and 65 and had overweight or obesity as measured by body mass index, or BMI.

Antibody Reduces Allergic Reactions to Multiple Foods in Clinical Trial

A 16-week course of a monoclonal antibody, omalizumab, increased the amount of peanut, tree nuts, egg, milk and wheat that multi-food allergic

children as young as one year could consume without an allergic reaction in a late-stage clinical trial.

Nearly 67% of participants who completed the antibody treatment could consume a single dose of 600 milligrams (mg) or more of peanut protein, equivalent to 2.5 peanuts,



without a moderate or severe allergic reaction, in contrast with less than 7% of participants who received placebo.

The treatment yielded similar outcomes for egg, milk, wheat, cashew, walnut and hazelnut at a threshold dose of 1,000 mg of protein or more.

This suggests the antibody therapy has the potential to protect children and adolescents if they accidentally eat a food to which they are allergic despite efforts to avoid it, according to investigators. The findings were published in the New England Journal of Medicine.

"People with food allergies and their caregivers need to maintain constant vigilance to avoid foods that could cause a potentially life-threatening allergic reaction. This is extremely stressful, especially for parents of young children," said Dr. Jeanne Marrazzo, director of NIAID, the trial's regulatory sponsor. "Although food avoidance remains critical, the findings reported today show that a medicine can help reduce the risk of allergic reactions to common foods and may provide protection from accidental exposure emergencies."

Intervention Lessens Likelihood of Developing Postpartum Anxiety, Depression

Results from a large clinical trial funded by NIH show that an intervention for anxiety provided to pregnant women living in Pakistan significantly reduced the likelihood of the women developing moderate-to-severe anxiety, depression or both six weeks after birth.

The unique intervention was administered by non-specialized providers who had the equivalent of a bachelor's degree in psychology—but no clinical

experience. Results suggest this intervention could be an effective way to prevent the development of postpartum mental health challenges in women living in low-resource settings.

"In low-resource settings, it can be challenging for women to access mental health care due to a global shortage of trained mental health specialists," said NIMH Director Dr. Joshua A. Gordon. "This study shows



IMAGE: VGSTOCKSTUDIO/SHUTTERSTOCK

that non-specialists could help to fill this gap, providing care to more women during this critical period."

Led by Dr. Pamela Surkan of Johns Hopkins Bloomberg School of Public Health, the study was conducted in the Punjab Province of Pakistan between April 2019 and January 2022.

Pregnant women with symptoms of at least mild anxiety were randomly assigned to receive either routine pregnancy care or a cognitive behavioral therapy (CBT)-based intervention called Happy Mother-Healthy Baby. Researchers assessed participants (380 women in the CBT group and 375 women in the routine care group) for anxiety and depression six weeks after the birth of their child.

Investigators found that 9% of women in the intervention group developed moderate-to-severe anxiety compared with 27% of women in the routine care group. Additionally, 12% percent of women in the intervention group developed depression compared with 41% of women in the routine care group.

The Happy Mother-Healthy Baby intervention was created using input from pregnant women in a hospital in Rawalpindi, Pakistan. Pregnant women took part in six intervention sessions where they learned to identify anxious thoughts and behaviors, such as thoughts about possible miscarriage, and to practice replacing them with helpful thoughts and behaviors. The first five sessions were conducted in early to mid-pregnancy and the sixth session occurred in the third trimester.

NINDS Mourns International MS Expert McFarland

BY SHANNON E. GARNETT

Scientist emeritus and international multiple sclerosis expert Dr. Henry McFarland, a longtime stalwart

researcher at the National Institute of Neurological Disorders and Stroke (NINDS), died Jan. 11 at age 83.

McFarland was world-renowned for his research on multiple sclerosis (MS), a debilitating neurological disease characterized by the destruction of the insulating myelin sheath surround-



Dr. Henry McFarland

ing nerve cells. He distinguished himself for his discoveries using MRI to identify MS treatments. His contributions to research on the disorder laid the groundwork for efficient testing of disease-modifying therapies and for applying new techniques and technologies to research.

"Henry made a significant impact during his lifetime, not only on the millions of individuals living with MS, but on the culture of NINDS and the field of neurology," said NINDS Director Dr. Walter Koroshetz. "He helped set the tone for the spirit of kindness, collaboration and discovery that we hold so dear. To those who knew him, he was an innovative thinker, dedicated mentor and warm and humorous friend."

Born in Pennsylvania and raised in Arizona, McFarland earned his bachelor's degree from the University of Arizona and his medical degree from the University of Colorado. A lecture on the lymphocytic choriomeningitis virus, during his residency at Thomas Jefferson Medical College

in Philadelphia, sparked McFarland's interest in neurovirology and led to his career in neuroscience. After completing his clinical training, he went on to do postdoctoral studies as an NIH special fellow in neurovirology at Johns Hopkins University School of Medicine and in immunology at University College in London, England.

From 1973 to 1975, McFarland served as assistant professor of neurology at Johns Hopkins Hospital. He joined NINDS in 1975 as deputy chief of the Neuroimmunology Branch (NIB)—which he helped to establish—and was later appointed branch chief in 1994.

McFarland spent more than three decades with NINDS. During that time, he conducted research in a variety of areas including genetics, clinical trials and imaging. His work spanned various topics such as the role of viruses—and immune responses to those viruses—in chronic neurological diseases, as well as the cellular immune response in MS.

In addition to his research, he trained many young scientists from all over the world.

"Henry taught me so much about neurology, caring for patients and so much more," said Joan Ohayon, a clinical research project manager in NINDS's Division of Clinical Research. "He was respected and loved by many. Very few people really make a true impact in this world—but he was one of them." McFarland hired Ohayon, who is also a family nurse practitioner, in 1997.

McFarland's primary scientific contribution was in the integration of MRI technology into MS research; his work led to both innovative trial designs and a deeper understanding of the disease. This research laid the foundation for accurately predicting treatment efficacy in phase 3 trials, resulting in the approval of more than two dozen disease-modifying therapies for relapsing MS.

Between 2002 and 2007, McFarland served as NINDS's clinical director and was instrumental in the founding of both the NIH Neuroscience Nurse Internship Program and NINDS training programs for American Indian and Alaska Native scientists.

In his leadership roles, he was known for approaching employees to ask, "Is everyone happy?" and "What have you discovered today?" He was committed not only to challenging his staff and mentees but also to cultivating them as well.

"Henry was a wonderful clinician-scientist and human being and deeply committed to the NINDS Intramural Research Program," said former NINDS Director Dr. Story Landis. "I was very grateful that he was willing to become the clinical director in addition to running NIB."

An internationally recognized leader in the field of

neuroimmunology, McFarland received numerous awards for his research accomplishments, including the John Jay Dystel Prize—sponsored by the American Academy of Neurology and the National Multiple Sclerosis Society—in 1998, the Public Health Service Physician Clinical Researcher of the Year in 1996, and the 2003 Charcot Award for a lifetime achievement in MS research.

Although he retired in June 2009, McFarland continued his research at NIH as a scientist emeritus. His impact extended beyond his retirement through advisory roles with MS-focused organizations.

McFarland retrieves frozen blood

sample for measles killer cell

testing in 1986.

"Henry leaves a towering legacy of scientific contributions and mentorship of future leaders in the MS community," said Dr. Tim Coetzee, chief advocacy, services and science officer at the National MS Society. "We are grateful for the many contributions that he made to the work of the National MS Society—a remarkable life and legacy that is making life better for people with MS today and in the future"

McFarland will be missed by all who knew him and by those who benefitted from his extensive work to improve the lives of people with neurological disorders. He leaves behind his beloved wife Karen, their son Paul, and two granddaughters, Elizabeth and Alison.

Remembering Broadbent, Early Children's Inn Resident

NIH mourns the passing of Hydeia Broadbent, who died Feb. 20 in Las Vegas, Nev., at age 39.

One of the first patients to stay at the Children's Inn at NIH after it opened in 1990, Broadbent was 4 years old when she arrived at NIH as part of the first generation of HIV/AIDS research. She



Hydeia Broadbent had served as an advocate for HIV/AIDS research since she was four years old. Below, she's shown at NIH in 1991 for the first anniversary celebration of the Children's Inn.

charmed the nation when she appeared alongside Magic Johnson in 1992 and four years later when she gave an interview on the Oprah Winfrey Show. Broadbent touched countless hearts with her resilience and spirit as a spokesperson for those living with HIV/AIDS.

In a Feb. 22 social media post, NIH Director Dr. Monica Bertagnolli acknowledged Broadbent's impact, noting, "Hydeia...became a remarkable advocate for HIV/AIDS awareness. We honor her recent passing, remembering her courage and devotion to sharing information and spreading hope as lessons for us all."



ART AS MEDICINE NIDA Debuts Community Exhibit in Clinic Spaces

Hope and new beginnings. Those messages ring true at the National Institute on Drug Abuse (NIDA) with the most recent debut of the NIDA Intramural Research Program (IRP) Community Art Collective.

The unprecedented effort pairs art with medicine to promote healing in an aesthetically pleasing environment and as part of a larger initiative to help de-stigmatize addiction care.

NIDA plans to rotate artwork in the outpatient clinics at the IRP Bayview campus in Baltimore throughout the year.

The first exhibit on loan from the Art League of Ocean City, "Portraits of Recovery," is now on display. The remarkable project illustrates on canvas and in verse, the intimate experiences of people living with addiction expressed through the eyes of the artists and individuals portrayed.

The interactive exhibit is complemented by additional new artwork displayed throughout NIDA clinics depicting local landmarks and nature, donated by local artist and NIDA staff member Golnar Miamee, a health communication strategist serving the IRP recruitment and outreach team.

NIDA staff hope that the collective will continue to bring people together to better understand addiction and help overcome the stigma of addiction.

"Artistic expression offers a voice to people with addiction and the walls of our clinics at the NIDA IRP have come alive," said NIDA Clinical Director Dr. Lorenzo Leggio. "Merging our clinical needs with the power of art is allowing us to unify the importance of our mission to do cutting-edge clinical research with the beauty of art. We here at NIDA are grateful for this opportunity to provide a platform of all patients and families living with addiction."



The recently displayed artwork is hung in the outpatient clinics at the NIDA IRP Bayview campus. At left, Portrait of Jerry Elston painted by Jessica Schlegel (the picture has a darker left side and a lighter right side to signify Jerry "leaving the darkness and coming into the light...facing each day knowing his demons are behind him and that he's heading on to a brighter future.") At right, Portrait of Leah Scott painted by Jill Glassman, who described Leah as "a woman of immense energy, joy and exuberance."



The Community Art Collective pairs art with medicine to promote healing. At left, Portrait of Jim Lavrich painted by Jim Rehak, who Lavrich described as "a thoughtful hard-working man with both feet on the ground"). At right, Portrait of Julia Burr Roveti painted by Katrin Huber. The artist shows a "wave of creative spirit and fun with the splash of colors around her" alongside "the sad version of her in the back…if only as a shadow of the past."

RIGHT: Guests at NIDA IRP clinics can enjoy the exhibit on display. The art shown (from I): Portrait of Taylor Gordon painted by artist Joanne Guilfoil; Portrait of Todd Cauffman painted by artist Jacki Yamin (the work features Todd and a painted bear that Yamin explained is "small and peaceful as it sleeps, but awake it is wild and uncomfortable; that is addiction"); Portrait of Kristin Jones-KoKo painted by Teri Edgeworth, who says, "behind her smile is the best kept secret, just like looking at the Mona Lisa."

