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Director Shares Vision for NIH

BY ERIC BOCK

NIH Director Dr. Jay Bhattacharya described his research and how it connects to his vision for NIH at the Jan. 7 Grand Rounds lecture in Masur Auditorium.

Bhattacharya has published extensively in the "science of science" field: advocating "evidence to improve the rigor, incentives and impact of science." He wants to use data to inform science policy.

NIH Director Dr. Jay Bhattacharya at Grand Rounds

"We're at this moment where there's a lot of anxiety about science," he said. "I think there are real opportunities to use science to address these problems."

One of those problems is the reliability of published biomedical literature. Many published findings cannot be replicated or reproduced. He said this is in part because science is complex and the processes that decide what's true are "leaky." Peer review isn't enough. As a result, it's impossible to know whether the reported findings are credible.

"Authority and truth-making in science come

SEE **BHATTACHARYA**, PAGE 2

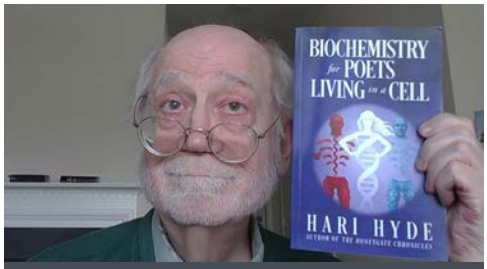
NIH Record Ceases Publication

This will be the final issue of the *NIH Record*.

For more than 76 years, this newsletter published every two weeks, expounding on research advances, charting NIH's progress and highlighting the agency's extraordinary staff. It has served as an ongoing time capsule.

For the *NIH Record's* staff, it has been an honor to inform and captivate NIH'ers and the public for all of these years. Thank you for reading our stories.

Be on the lookout for a new internal monthly newsletter that will merge elements of the *NIH Record* and the *NIH Catalyst.* For public NIH news and updates, visit www.nih.gov.



NIH'er makes biomolecules characters in his latest book. See p. 8.

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ADVANCES IN NEUROGENETICS

Bönnemann Describes Recent Breakthroughs with Patients

BY SEAN MARKEY

Dr. Carsten Bönnemann, a senior investigator with NIH's National Institute of Neurological Disorders and Stroke (NINDS), studies what he calls "the neurogenetics of motion and sensation," affecting spinal cord, muscle and motor and sensory nerves. In his Astute Clinician Lecture in Lipsett Amphitheater in December, the physician-scientist argued that medical progress is "powered by the encounter with patients."

Dr. Carsten Bönnemann

In his talk, Bönnemann presented three case studies of encounters with a single enigmatic patient, moving from the motor neuron to muscle and on to sensory nerves. In each, he summarized how careful observation and deep analysis led to a medical breakthrough and new therapeutic direction.

The first case he described involved a young woman with a novel genetic cause of a childhood-onset motor neuron disease. The patient had normal cognitive and sensory abilities. She developed toe-walking and stiffness in early childhood and experienced progressive muscle weakness as she grew older. By her early teens, she was unable to walk or breathe on her own.

EMG, ultrasound and muscle biopsy tests revealed that her motor neurons were dying but her sensory nerves remained unaffected. The pattern pointed to pure motor neuron disease, similar to ALS, but starting in early childhood.

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Bhattacharya

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from the ground up," he said. "It comes from other scientists looking at the same thing from different angles. Do they find the same answer?"

Over the years, many researchers have evaluated the reproducibility of biomedical research. Studies have shown that less than half of published scientific literature could be replicated. That percentage is even lower in some fields.

Drug developers conduct their own replication studies before investing in potential drug candidates. In a recent study, a team at the pharmaceutical company Bayer found that only a quarter of published preclinical studies could be validated.

"It's a real problem," Bhattacharya said. "If half or more of the published literature is not true, how do we, as scientists, take the next step in our scientific agenda?"

Few researchers are rewarded for ensuring their research is replicable, reproducible and generalizable, he said. There's little incentive to conduct replication studies or publish their failed results.

"Every scientist I've ever respected and admired has had ideas that didn't work out. If you talk to them, they will tell you at length why they thought it didn't work out," he said. "And yet, it's very difficult to tell that story in scientific literature."

Bhattacharya wants scientists to view replication as a mark of success, not a threat. It should be seen as a great honor. He said, "It means your paper is worth the attention of other scientists."

Another priority for Bhattacharya is encouraging "high-risk, high-reward science." Scientists must have permission to pursue promising ideas even if they are controversial, he said. Failure informs progress.

NIH recently released the "Unified NIH Funding Strategy," which changed how institutes, centers and offices evaluate scientific projects. The framework leverages the synergistic missions of each NIH Institute and Center to fund the most meritorious science, address urgent health needs and sustain a robust biomedical research workforce.

"We're going to allow institutes to choose high-risk, high-reward ideas to create a portfolio that has a chance of making a big advance and address some of the key health problems of this country," he explained.

Bhattacharya describes his vision for the agency.

PHOTOS: MARIA MASLENNIKOV

Young scientists are often the source of the newer, high-risk, high-reward ideas, he noted. However, most principal investigators are in their 40s upon first receiving an R01 grant award.

"If you want to refresh ideas in science, it's very important that early-career scientists get support for their ideas [now], not 10 or 15 years after they start," he said.

Of course, experienced scientists have an integral role. Teams comprising a mix of early-career and mid-to-late career scientists are also likely to try out newer ideas. "If you want new ideas to work, you need expertise," he said.

Bhattacharya also shared his plans for the Clinical Center (CC), which he called "one of the shining jewels of NIH." In the CC, basic scientists and clinicians have worked together for a long time to make transformative discoveries.

In recent years, the CC has faced major challenges. During the Covid-19 pandemic, inpatient admission declined. It hasn't picked up since. He sees that underutilization as an opportunity "to use the CC for exactly what it's good for."

Patient participation is essential to discovery. Bhattacharya wants to make it easier for doctors to enroll patients in studies, remove age and eligibility criteria and improve hospital infrastructure.

He also supports fostering collaboration between ICs, giving early-career researchers opportunities to lead clinical studies and reducing structural barriers to CC access.

Since the CC first opened in 1953, there has been a longstanding tradition of excellent pediatric research. Bhattacharya wants to build upon this track record. Right now, plans are underway to open a pediatric intensive care unit in the hospital, which would allow the hospital to take care of the sickest children.

"In 10, 20 or 30 years from now, I want all of us to look back and say, 'wow, we made huge advances,'" Bhattacharya concluded.

NIHers can watch the archived lecture at https://videocast.nih.gov/watch=57198. R

Rare Disease Day Returns — Feb. 27

NIH's National Center for Advancing Translational Sciences will host Rare Disease Day at NIH on Friday, Feb. 27, from 9 a.m. to 5 p.m. EST. The hybrid event welcomes patients, caregivers, advocates, researchers, clinicians and industry and government representatives to the Natcher Conference Center. The day's sessions will also be streamed on NIH videocast.

This year's agenda features three panel sessions exploring cutting-edge approaches to rare disease research and treatment. Throughout the day, patients and advocates will share their experiences living with rare diseases. These stories offer firsthand insights into the daily realities of navigating complex medical systems, driving research forward and maintaining hope amid uncertainty.

The event also features exhibits, scientific posters and an art exhibition during networking breaks. An unveiling of a "Beyond the Diagnosis" portrait will take place in the morning, showcasing artistic representations of rare disease experiences and the people they affect.

Registration is required for both in-person and virtual attendance. Register at https://ncats.nih.gov/rdd.

Investigators Develop Resources to Understand Temperature Exposures

BY DOUGLAS MURPHY

A new model for tracking temperatures demonstrates how research conducted by NIH's National Institute of Environmental Health Sciences (NIEHS) directly benefits communities.

Using a network of personal weather stations already collecting real-time data, scientists from NIEHS's Division of Translational Toxicology (DTT) developed a model that precisely maps temperatures in city neighborhoods. This capability will help researchers better understand the relationship between extreme heat and health outcomes, and support efforts to reduce heat-related risks.

"This work provides an innovative platform for understanding how weather-related stressors and other environmental factors interact to affect human well-being," said DTT Scientific Director Dr. Heather Patisaul.

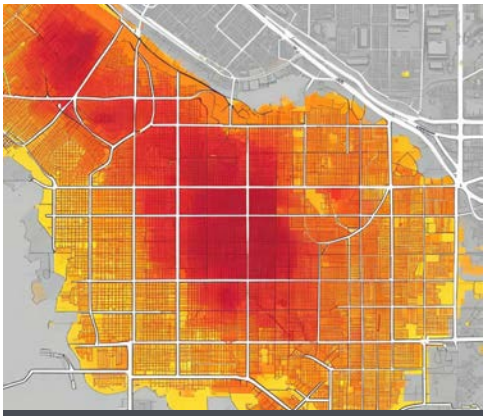
A collaborative approach

The project unites specialists from different research backgrounds to devise innovative methods and solutions. Dr. Kyle Messier, who leads the Spatiotemporal Exposures and Toxicology Group at NIEHS, specializes in developing geospatial models that show how environmental factors influence health across regions and over time. Although he primarily focuses on chemical exposures, he teamed up with Dr. Eva Marquès, a recent postdoctoral fellow at NIEHS, to develop heat models for U.S. cities.

"It seemed like a natural step because we take an exposomics approach to research," Messier said. "We work to understand how exposure to everything under the sun affects health over a lifetime."

Practical applications

Messier and Marquès collected hourly readings of air temperature from weather-monitoring stations embedded in neighborhoods in New York, Philadelphia, Phoenix and Raleigh-Durham, NC. Their model mapped temperature variations across time and space, identifying urban heat islands—areas where city landscapes amplify heat compared with surrounding regions.



AI-generated heat map of a U.S. city reveals higher temperatures (orange and red) in city landscapes compared with surrounding areas.

IMAGE: SHUTTERSTOCK

Dr. Eva Marques (l) and Dr. Kyle Messier

Messier noted that the model complements ongoing efforts, such as NIH's *All of Us* Research Program and the Personalized Environment and Genes Study. Both initiatives compile large datasets toward understanding how environmental factors, lifestyle and genetics interact to influence health. Integrating temperature data will allow researchers to better evaluate the role of heat stress over time and guide public health strategies.

"Our approach reveals hotspots where attention is needed," said Marquès. "The data can support actions like heat awareness campaigns, guide construction methods and park development, and inform other strategies to improve the urban environment and reduce health risks."

Spreading the benefits

Messier and Marquès prioritized making their data accessible and reproducible.

"We've put a lot of effort into ensuring it can be run and integrated into other studies," said Messier. "It's tested, documented and accessible for other scientists and analysts to make their own calculations."

The team made predictions for the largest 100 U.S. urban areas, which is publicly available at the Harvard Dataverse: bit.ly/4s9XSqL

Marquès hopes other scientists will use the model to understand health effects—ranging from sleep discomfort to severe disease—of urban heat islands.

ON THE COVER: *Neutrophil extracellular traps (NETs) are web-like structures that play a key role in the immune response and act as a source of modified antigens implicated in various autoimmune diseases, including lupus and rheumatoid arthritis. Here, myeloperoxidase is stained in magenta, and DNA is shown in white.*

IMAGE: CARMELO CARMONA-RIVERA, NIAMS

The NIH Record

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Clinical Center CEO Pius Aiyelawo (l) joins Bönnemann in displaying his lecture award. **PHOTO: JUSTIN BAKER**

Neurology

CONTINUED FROM PAGE 1

Whole-exome genetic sequencing revealed a surprise: a previously unknown mutation in the *SPTLC1* gene. Bönnemann noted that different variants of the gene were already known to cause the *opposite* disease: loss of pain and temperature sensation (i.e., sensory neuropathy) but not motor function.

After sharing his findings, Bönnemann said other doctors around the world quickly helped identify other patients with childhood-onset motor neuron disease and mutations in the same small region of the *SPTLC1* gene, confirming the discovery of a new disease.

Deeper study revealed a key biochemical insight. SPTLC1 is part of a molecular machine, the SPT complex, that produces sphingolipids, essential fats used to build nerve cell membranes and nerve insulation known as myelin. The ancient pathway is tightly regulated because too little or too much production of the sphingolipids is bad.

In the case of the previously known sensory neuropathy disease, the underlying *SPTLC1* mutations cause the enzyme to use the wrong substrate, producing toxic deoxy sphingolipids that damage sensory nerves.

But in the newly identified ALS-like patients, the underlying mutation caused the enzyme to produce too much of the right product in an unregulated fashion, resulting in toxicity to the motor nerves. Bönnemann said experiments using RNA-based therapies on patient cells to silence the mutant gene resulted in sphingolipid production returning to normal. The findings identified a new precision medicine therapy.

In the second case study, Bönnemann described working with a patient with an unusual form of collagen VI-related muscular dystrophy.

A group of genetically inherited muscle diseases, collagen VI-related muscular dystrophies are caused by defects in the connective tissue that surrounds and supports muscle tissue. Symptoms range from mild to severe. Some patients retain the ability to walk into adulthood, while others lose that ability in childhood.

Bönnemann's patient experienced typical symptoms of the severe form, but genetic testing did not find a genetic mutation associated with the severe forms of the disease. Only by applying RNA sequencing on muscle combined with whole genome sequencing—and guided by the clinical phenotype in collaboration with the Broad Institute—was the team able to identify a hidden mutation deep in an intron that activated a "poisonous exon" in one of the collagen VI genes causing the disease. This previously hidden mutation has now emerged as one of the most common single causes of the disease.

Because this specific mutation activates a splice event resulting in the poisonous pseudo exon to be included in the messenger RNA, it became evident that it could potentially be addressed with a precision genetic therapy to suppress the abnormal splice and revert the messenger RNA to normal. The team is taking this research toward a future clinical trial. Thus, he said, clinical recognition combined with cutting-edge genomic technology led to identifying both the cause of the disease and development of a precision therapy.

In his final case study, Bönnemann described his team's encounter with a patient who had a complete absence of proprioception (the sense of body position in space) and specific aspects of touch sensation. Bönnemann and his team determined that loss of function of the recently discovered mechanosensory PIEZO2 was the cause of this constellation. In collaboration with NIH's Dr. Alex Chesler, they identified and characterized more patients with this unique new syndrome.

Bönnemann went on to describe how this discovery also led to fundamental insights into the roles of mechanosensation in human sensory perception and organ functions. It also inspired development of a sensory prosthesis to overcome the loss of joint position sense by using other sensory modalities such as deep touch to relay this information to the brain.

Opening his talk, Bönnemann touched on three transformative experiences that set him on his current research path. The first was his medical school training in his native Germany, where he served a mandatory first-year summer nursing internship on a pediatric neurology ward.

The second was his work in the 1990s in the lab of Dr. Louis Kunkel at Harvard Medical School, at a time when the human genome had not yet been mapped and genetic sequencing was done by hand. There, Bönnemann helped discover the genes responsible for certain types of limb-girdle muscular dystrophy.

The final transformative experience was his recruitment to NINDS, where Bönnemann said he fully realized his "bench-to-bedside" dream: Start with a patient to identify specific symptoms and their genetic makeup; move to the lab to understand the underlying biological mechanisms; then develop precision treatments.

"I am a clinician at heart," Bönnemann said. "I think everything we do in human medicine is powered and inspired by the encounter with our patients."

Rider Receives Public Service Award from AMA

NIH's Dr. Lisa Rider will receive the 2026 American Medical Association (AMA) Award for Outstanding Government Service on Feb. 24. The honor is in the category Member of the Executive Branch in career public service.

Dr. Lisa Rider

Rider is a senior clinician, specializing in pediatric rheumatology, who heads the environmental autoimmunity group at NIH's National Institute of Environmental Health Sciences (NIEHS). Her group conducts clinical, translational and basic investigations in adult and pediatric autoimmune diseases, using multidisciplinary approaches to understand the roles of genetic and environmental risk factors for these diseases.

This prestigious award recognizes Rider's outstanding efforts in advancing public health.

OITE's Milgram Retires

BY DANA TALESNIK

Dr. Sharon Milgram, who served as director of NIH's Office of Intramural Training and Education (OITE) for the past 18 years, retired in December.

Milgram arrived at NIH in 2007, having just moved to the DC area from North Carolina with her research group. She came to NIH to head up a burgeoning OITE in the Office of the Director and also arrived as a principal investigator to continue her previous research. She was given a dual appointment with NIH's National Heart, Lung and Blood Institute (NHLBI) and NIH's National Human Genome Research Institute (NHGRI) to study protein trafficking in polarized cells, mostly airway epithelial cells, which line the lungs. Her lab, though, mainly focused on trafficking of the protein that is mutated in cystic fibrosis.

Dr. Sharon Milgram

Milgram found it much harder than expected to build up and direct the then-small OITE while concurrently running a lab, so she closed her lab about five years after arriving at NIH.

When Milgram arrived, OITE did not have a career center or pre-graduate or premedical advising or well-being center. "The idea was to come with fresh eyes and to redefine what OITE could and should be," Milgram said. "It was almost a reinventing of an office that existed."

Much growth occurred under her leadership. Today, OITE is a vibrant office serving the entire agency, dedicated to the career advancement of more than 6,000 trainees.

"The thing I'm most proud of at NIH," she reflected, "is the work we've done in the realm of well-being and mental health support, not only for our fellows but also the broader dialogue in the entire biomedical community here."

Milgram said she's also proud of programs OITE launched to expand opportunities for people traditionally excluded from exploring science, particularly the high school program for students from financially disadvantaged backgrounds and a program bringing community college students to the summer internship program.

"Some of those high school students and community college students are medical residents and postdocs, planning all kinds of exciting careers in research and health care," Milgram said. "Those two programs were impactful."

Milgram is grateful to the OITE staff who have worked tirelessly to expand services for fellows. "We really go out of our way to welcome fellows, to step in when they're struggling, to help them grow and learn through their mistakes and despite their mistakes," she said. "Many of the OITE staff started as fellows here."

Looking back, Milgram said what OITE accomplished during the pandemic reflects their dedication. The staff ran postbac poster day through online presentations; a summer program fully virtual and another as hybrid with a few people on campus; programming every day so students at home were fully engaged.

"Sharon transformed training at the NIH and across the nation," said OITE Deputy Director Dr. Lori Conlan. "She pioneered career education over 20 years ago and built on that foundation to revolutionize well-being and resilience for the biomedical workforce. Personally, I will miss her energy, wit and joy."

Milgram received a bachelor's degree in physical therapy from Temple University and a Ph.D. in cell biology from Emory University. She completed postdoctoral training at the Johns Hopkins University before joining the faculty at the University of North Carolina at Chapel Hill, where she ran a research group and developed graduate programs.

At UNC, she rose to the rank of full professor in the Department of Cell & Developmental Biology. She also served as associate director of the Medical Scientist Training Program, director of the Interdisciplinary Biomedical Sciences Graduate Program and director of the Summer Undergraduate Research Experience.

"I thought a lot about training issues at Chapel Hill and then realized I was more interested in the administrative training side," she said. "I wanted a more formal position, in that regard, and we wanted to live in a bigger city," so NIH seemed the perfect opportunity. It turned out to be a great fit.

Milgram, (second row, third from r) celebrates with colleagues at her retirement gathering in December.

Upon retirement, Milgram plans to continue working to improve mentor-mentee relationships and discussing well-being with scientists.

"There's a need for a culture change in the biomedical research community in how we engage teams and work with each other," she said. To that end, Milgram has a longer-term goal of launching a small company that provides program development and coaching.

For now, she looks forward to more cooking and traveling. "It's been an intense year," she said. "Taking some time to catch my breath feels really appropriate."

Conlan added, "I hope Sharon's retirement is full of finding the best restaurants and taco joints that her adventures lead her to."

ORS Director McGowan Retires

BY AMBER SNYDER

Colleen McGowan

NIH's Office of Research Services (ORS) Director Colleen McGowan retired at the end of 2025. Her NIH journey began in December 2001 and spanned 24 years of service.

McGowan arrived at NIH as a senior administrative officer at the Clinical Center (CC), a fitting segue from her previous role as a hospital administrator with the U.S. Air Force. She ascended to the role of CC deputy chief operating officer in 2010 and then executive director in 2016. She applied for the ORS director position at the urging of an NIH friend and officially became director in 2019.

"My predecessor, Dr. Alfred Johnson, described the ORS director position as the NIH mayor," McGowan recalled. She has found this description to be true. "It's like running a city."

She oversaw 22 different divisions, offices and branches in NIH's Office of the Director and advised the NIH deputy director for management and other NIH senior staff on the management and delivery of technical and administrative services in support of the NIH research mission.

"Every day is different," she said.

McGowan recalled the beginning of the Covid-19 pandemic, which was a challenging, memorable time for all of ORS. Many employees were essential, and McGowan herself met seven days a week with NIH leadership to manage crucial campus

CONTINUED ON PAGE 6

operations. She organized a series of "Gratitude Tours" with then-NIH-director Dr. Francis Collins to thank the various essential ORS employees who never stopped working during the pandemic.

"I wanted to illuminate the important work that our unseen players do," she said.

Other memorable (but maybe lower stakes) events McGowan managed over the years include visits from then-Prince Charles and Duchess Camilla, the Dalai Lama, various U.S. presidents, members of Congress and public figures like singer Barbra Streisand and poet Maya Angelou.

These visits, McGowan said, "made me realize that NIH impacts everyone," whether they are patients coming to receive care or members of Congress who want to learn more about the NIH mission. "The fight against disease resonates with everyone."

Upon her retirement, she plans to take a few months off to relax and spend time with her two teenage daughters. McGowan said she may seek out a second career as a consultant or executive coach.

"I feel called to pass on the lessons I've learned to others," she said.

NIH Remembers Jacobson

Dr. Arthur E. Jacobson passed peacefully on November 9 at the age of 97. He was a consultant and collaborator in the Drug Design and Synthesis Section of NIH's National Institute on Drug Abuse (NIDA) and NIH's National Institute on Alcohol Abuse and Alcoholism for 24 years and in civil service in the intramural research programs at NIH's National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) and NIDA during the preceding 37 years.

Dr. Arthur Jacobson

Jacobson attended the Bronx High School of Science and Fordham University College of Pharmacy. He earned his B.S. in 1949 with honors, an M.S. in pharmaceutical chemistry (1952) and a second M.S. in organic chemistry (1954) from Rutgers University before being drafted into the army during the Korean War.

Jacobson served from 1954-1956 in the Pharmaceutical Chemistry Section of the Army Chemical Center in Edgewood, Md., and returned to Rutgers where he earned a Ph.D. in organic chemistry (1960). He conducted postdoctoral work in the Biochemistry Department of the Albert Einstein College of Medicine, Yeshiva University.

In 1962, Jacobson joined Dr. Everette May's medicinal chemistry group in NIDDK as a research chemist studying the structure and function of various drugs, especially the 6,7-benzomorphans and the 5-phenylmorphans, classes of antinociceptives that are still being explored.

Jacobson had a long, notable association with the College (formerly, Committee) on Problems of Drug Dependence (CPDD) from its tenure as a Committee of the National Research Council of the National Academy of Sciences, then as a founding member of the CPDD as it transformed into a membership organization and as a World Health Organization collaborating center for research and training in the field of drug dependence.

He was an internationally recognized expert in used/misused drugs, and he acted as the biological coordinator and/or chair of the Drug Evaluation Committee of the CPDD from 1976-2000. This committee included researchers from universities nationwide who evaluated the physical dependence, potential and abuse liability of opioids and psychotropic drugs. Jacobson received the J. Michael Morrison Award from the CPDD in 1990 for his outstanding contributions in scientific administration related to substance use disorders.

After his retirement in 2001 as deputy chief of the Laboratory of Medicinal Chemistry at NIDDK, Jacobson returned to NIH in the Drug Design and Synthesis Section (DDSS) of NIDA, collaborating with Dr. Kenner Rice, with whom he worked for more than 50 years. During his career, he authored or co-authored over 400 peer-reviewed scientific papers, patents and pending applications, scientific reviews and book chapters. He also helped train more than 100 postdoctoral scientists.

"Art was an exceptional scientist, colleague, counselor and role model. He was a veteran who served his country, a chemist who served his profession, an award-winning scientist who served his field," said NIDA staff scientist Dr. Agnieszka Sulima.

"Art had a rare gift for listening and supporting others with kindness and truth," said Rice. "His honest opinions and constructive critiques helped guide our team forward. His extensive knowledge advanced our program. Art will be deeply missed by all of us."

NHLBI Director Gibbons Retires

Dr. Gary Gibbons, director of NIH's National Heart, Lung, and Blood Institute (NHLBI), is retiring from federal service at the end of January. Gibbons has served as NHLBI director since 2012, dedicating his federal service to leading research in the prevention and treatment of heart, lung and blood diseases as well as sleep disorders.

Dr. Gary Gibbons

"Being the director of NHLBI has been my greatest privilege in public service," Gibbons wrote in an internal memo to NHLBI staff. "Serving alongside exceptional NIH leaders, scientists and staff has been an honor.

"The dedication exhibited by the NIH community, the investigators we fund, our advocacy community and, importantly, the research participants and patient representatives whose support is invaluable, will continue to advance heart, lung, blood and sleep research in ways that help improve and extend people's lives."

Under Gibbons' leadership, NHLBI has contributed to the fields of vascular biology, genomic medicine and the pathogenesis of vascular diseases. One of his notable efforts was the NHLBI-supported Systolic Blood Pressure Intervention Trial (SPRINT), which showed that intensive blood pressure management, below a commonly recommended target, significantly reduces the risk of death from cardiovascular events across all age groups.

Also under his leadership, the Cure Sickle Cell Initiative made great progress. Notably, less than five years after its launch, the FDA approved the first gene therapies for sickle cell disease in December 2023.

Gibbons championed and advanced the use of big data through NHLBI's TOPMed program. This data source has served to generate major findings like new genetic variants linked to chronic obstructive pulmonary disease (COPD); genetic risk factors and molecular pathways involved in idiopathic pulmonary fibrosis, and has revealed genetic risk factors for obstructive sleep apnea.

He also led NIH-wide initiatives like the Community Engagement Alliance (CEAL) Initiative and the NIH Researching Covid to Enhance Recovery (RECOVER) to address the disproportionate impacts of Covid-19 in specific communities across the country and examine the debilitating conditions that have come to be known as Long Covid, respectively.

Gibbons earned degrees from Princeton University and Harvard Medical School. Prior to joining NIH, he served as the founding director of the Morehouse Cardiovascular Research Institute at the Morehouse School of Medicine, Atlanta. He was elected to the Institute of Medicine in 2007 and is a recipient of the 2021 Samuel J. Heyman Service to America Medal, the 2023 Wenger Award for Excellence in Public Service and the 2025 Research!America Builders of Science Award.

In retirement, in addition to spending more time with family, Gibbons plans to continue his ongoing contributions to the cardiovascular field.

NIH Mourns Passing of Schecter


Dr. Alan Schechter

Dr. Alan Neil Schechter, a world-renowned figure in biomedical research, died in October, following a distinguished career spanning more than six decades at NIH. He was 86.

Arriving at NIH in 1965 to join NIH's intramural program, Schechter exemplified the physician-investigator ideal. His career arc traced the evolution of modern molecular medicine, from foundational studies to pioneering translational research.

Schechter received his medical degree from Columbia University's College of Physicians and Surgeons, following his undergraduate studies at Cornell University. He completed his clinical training in internal medicine at the Albert Einstein College of Medicine before joining the Laboratory of Chemical Biology at NIH's National Institute of Arthritis and Musculoskeletal and Skin Diseases (then NIAMD), where he trained under the Nobel laureate Dr. Christian B. Anfinsen.

Early in his career, Schechter made seminal contributions to the canonical studies of protein folding, publishing landmark papers on the kinetics and thermodynamics of protein denaturation and renaturation. His mastery of biophysical techniques and keen insight into protein structure established him as a leading investigator in the field.

Sickle Cell Disease Research

In 1972, Schechter was appointed chief of the Section on Molecular Biology and Genetics of NIH's National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) and, in 1982, he assumed leadership of the Laboratory of Chemical Biology when Anfinsen retired. Under Schecter's stewardship, the laboratory evolved into a model research program.

His research illuminated the molecular pathophysiology of sickle cell disease, particularly the polymerization of hemoglobin S and its effects on red blood cell deformability and organ damage. His work provided crucial insights that led to clinical trials demonstrating the therapeutic potential of hydroxyurea—findings that transformed treatment approaches for sickle cell patients worldwide. The unit was renamed the Molecular Medicine Branch in 2004.

Nitric Oxide and Vascular Biology

Schechter's most recent research focused on the biology of nitric oxide as a vasodilator and its role in regulating blood flow, particularly in the context of ischemic disease and sickle cell complications. His investigations opened new therapeutic avenues for cardiovascular and pulmonary disorders. This work generated multiple patents and inspired a new generation of studies on the physiological roles of nitric oxide and related metabolites.

His bibliography encompasses nearly 400 publications. And, his work on sickle cell disease and nitric oxide biology continues to influence clinical practice and research worldwide.

A Life in Service to Science

Schechter was renowned for training and inspiring the next generation of physician-scientists. His mentoring philosophy was distinctive: he taught physicians to think like researchers and researchers to understand clinical medicine. Through his teaching positions at George Washington University, Johns Hopkins University and the NIH Graduate School, as well as his leadership roles at the Foundation for Advanced Education in the Sciences (FAES), Schechter shaped careers and promoted the mission of the physician-investigator.

Schechter's leadership extended far beyond his own laboratory. He served as acting NIH historian and director of the Office of NIH History and the DeWitt Stetten, Jr. Museum of Medical Research, where his scholarly work documented the landmark achievements of intramural researchers, including the Nobel Prize-winning contributions of Dr. Marshall Nirenberg and Anfinsen. His service on grant review committees, study sections and advisory boards at NIH, the National Science Foundation and other federal agencies reflected the deep trust and respect he earned across the scientific community.

Scientific research was Schechter's calling, and NIH was his home. His extraordinary gift lay not only in his own discoveries but in his capacity to connect people, ideas and opportunities across disciplines and institutions. He was a scientist's scientist—rigorous in thought, generous with knowledge, and deeply committed to advancing human health through research.

With his passing, the biomedical research community has lost a founding figure of modern physician-scientist training, a pioneer in translational medicine and a champion of scientific integrity. His legacy endures in the investigators he mentored, the patients who benefited from his research, and the culture of rigorous, ethical science he helped to establish at NIH and beyond.

Schechter is survived by his wife, two children, and four grandchildren.
—Griffin Rodgers and Connie Noguchi

NIH Remembers NCATS Program Director


Dr. Rashmi Gopal-Srivastava

Dr. Rashmi Gopal-Srivastava (known as Dolly) passed away on Dec. 24 at age 65. She was a scientist and devoted public servant who touched many lives through science and art.

Gopal-Srivastava served as a program director in the Clinical and Translational Science Awards (CTSA) Program Branch within the Division of Clinical Innovation at NIH's National Center for Advancing Translational Sciences (NCATS). In this role, she provided leadership and programmatic oversight for several nationwide CTSA program hubs.

Prior to joining the Division of Clinical Innovation, she served as program director in the Office of Rare Diseases Research (now the Division of Rare Diseases Research Innovation) where she led and coordinated the Rare Diseases Clinical Research Network (RDCRN), a multidisciplinary national program in collaboration with 10 NIH Institutes. She dedicated more than 30 years to NIH, beginning her service in 1989. Her work spanned rare diseases, biochemistry, molecular biology and basic and translational research. Her career reflected a combination of scientific rigor, collaborative leadership and deep commitment to improving lives.

Gopal-Srivastava earned her Ph.D. in microbiology and immunology from the Medical College of Virginia at Virginia Commonwealth University. Her honors include the Virginia Commonwealth Fellowship; a research fellowship from the U.S. National Research Council of the National Academies of Sciences, Engineering and Medicine; numerous NIH individual merit awards; and recognition from the U.S. Department of Health and Human Services for outstanding community service. She also contributed to the launch of the peer-reviewed journal *Translational Research in Rare Diseases* and served as co-editor-in-chief since its first issue.

She took great pride in passing down language, culture and tradition. She loved teaching Hindi to her students and was deeply committed to preserving and sharing Indian traditions across generations.

Gopal-Srivastava was a painter, photographer, cook, singer and speaker. Her hobbies included spending time with family, traveling, painting and sketching.

Gopal-Srivastava is survived by her husband, Dr. Sudhir Srivastava; her daughters, the Honorable Aditi Srivastav Bussells (Louis Bussells) and Dr. Jigisha Srivastav (Adam Goldammer); and two grandchildren. She will be remembered not only for what she accomplished, but for who she was: a person of intellect, creativity and joy.

HYDE AND SEEK

Filpula's New Book Turns Biochemistry into Poetry

BY DANA TALESNIK

Different molecules perform essential functions in our bodies. As these proteins, lipids, nucleic acids and other biomolecules go about their work, they can have reactions, adapt, bond, be spontaneous—among their many traits reminiscent of human behaviors.

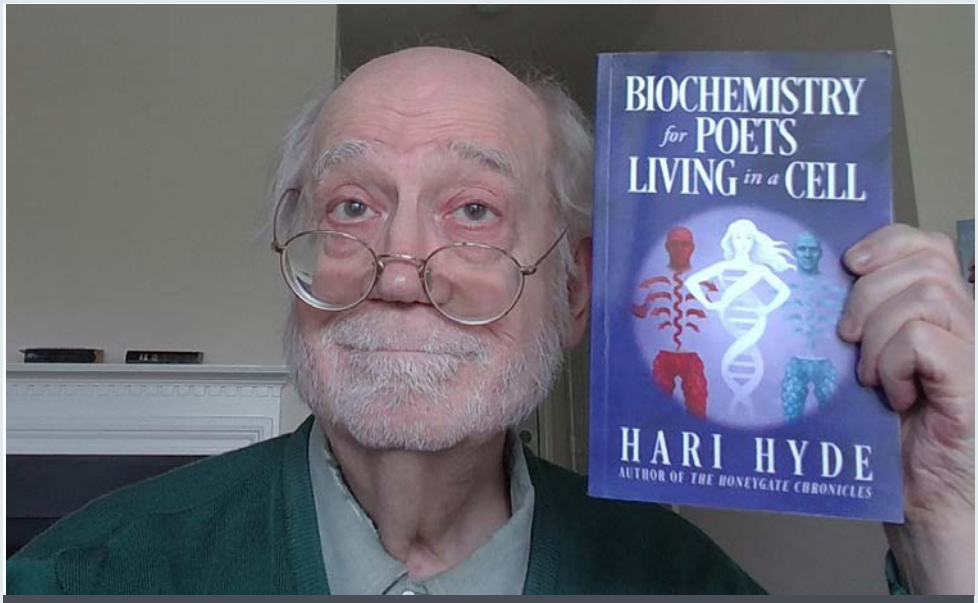
Inspired by this idea, NIH's Dr. David Filpula made biomolecules characters in his latest book, titled, *Biochemistry for Poets Living in a Cell.*

Filpula, an NIH scientific review officer for the past 14 years, is a biochemist who loves literature, particularly fables and poetry. He has published several books over the past decade under the pseudonym Hari Hyde, though his latest book, published last summer, is the one most tightly connected to science.

"The urge struck me less than a year ago to combine my knowledge of biochemistry with my love of poetry," he said. His new book is a collection of 70 tales.

"I explain complex biochemistry concepts using biomolecules, who are now characters in the cell, having personalities, motives and emotions," Filpula said. "Whereas a biochemistry text would provide a descriptive report, my book humanizes these biomolecules, portraying them as characters with actions and voices...These molecules are such easy metaphors for human behaviors."

There are hero proteins, traitorous viruses and enzymes that are militant maniacs. Sometimes the molecules ponder their mysterious environment, namely the human. In one chapter, "The Unanswered Question," a biomolecule gazes outside the cell membrane, hearing the thump of the heart and thinking, "why are things this way?"



CSR's Dr. David Filpula has written several books under the pseudonym Hari Hyde. His latest book features tales that bring biochemistry to life.

Another vignette, "Auntie's Pet Protein," introduces a woman who loses her dog, Marley, and decides she wants a better-behaved, less-mischievous pet. Her nephew convinces her to adopt the biggest protein in her heart, named Titin. He's very obedient and they get along but, after a while, she comes to miss Marley's rebellious nature.

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"The urge struck me...to combine my knowledge of biochemistry with my love of poetry. "

-DAVID FILPULA

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Yet another tale, "L-asparaginase: Juggler in Bondage" is based on an enzyme Filpula studied during his previous 30-year career in the biotech industry. Some cancer cells lose their ability to make the amino acid asparagine, Filpula explained. Scientists had discovered that adding the bacterial enzyme L-asparaginase to a cancer culture stops cancer cells from growing because they require external asparagine. The enzyme eventually became a useful drug.

"I tell the story from the perspective of the enzyme, who is very annoyed and put upon because he is taken away from his happy home in *E. coli*, where he came from, to go into the human bloodstream and have to, basically, serve in a foreign army," Filpula said. "So I describe his adventures and regrets in doing that."

During Filpula's years working for biotech companies, he'd collaborated several times with NIH scientists. "I had a lot of great memories of NIH and developed a love for the institution before I even joined," he recounted. "When I joined NIH's Center for Scientific Review (CSR) in 2011, it was my final stop." He'd found his happy home.

When Filpula became an author, he wanted to keep his day job and writing hobby separate so he decided to take on a pseudonym. One day, while looking in the mirror at his scruffy face, he thought to himself, "You look like a ball of hairy hide." That was it! He changed the spelling to Hari Hyde and his pseudonym was born.

Through his latest book, Filpula seeks to engage the imagination of readers, bringing them on a journey where they experience the events alongside the characters. He hopes the scientist and non-scientist alike will connect to these stories on an emotional level, because everyone loves a good story.

"I want to be entertaining," he said, "and I want readers to learn something."