

JOHNS HOPKINS OFFICE OF GIFT PLANNING
SPRING/SUMMER 2025

Planning MATTERS





On the cover: David Gakenheimer
Photographs by Lisa Helfert

FROM THE JOHNS HOPKINS NEWS NETWORK

HUB

The Irene and Richard Frary Gallery is the **Hopkins Bloomberg Center's** free, public art gallery presenting rotating exhibitions drawn from the university's collections and partnerships with leading museums and collectors. Currently on display is "Strong, Bright, Useful & True," a collection that highlights Baltimore's contemporary art scene and reinforces the university's deep commitment to the city.



SRIRAMANA SANKAR, JOHNS HOPKINS UNIVERSITY

A team from the **Johns Hopkins Neuroengineering and Biomedical Instrumentations Lab** has developed a prosthetic hand that can grip objects with near-human precision skill. The bioinspired hand combines rigid and soft materials, along with three layers of tactile sensors, to allow it to grasp delicate objects without crushing them. Machine learning algorithms then focus the signals from the artificial touch receptors into electrical nerve stimulations that create a realistic sense of touch for the wearer.

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POLL BRAVO, JOHNS HOPKINS UNIVERSITY

SHREYA SRIRAM, JOHNS HOPKINS UNIVERSITY



More than 500 patients at Johns Hopkins Hospital have been visited by students from the **Johns Hopkins School of Medicine** through Students Offering Optimism to Help, or SOOTHE. The student-run volunteer organization was founded by third-year medical student Shreya Sriram in 2023 to provide patients with companionship while teaching future doctors about the human side of medicine. New chapters are now being established at the Mayo Clinic, Harvard, and the University of Arizona.

The HUB is the news center for all the activity going on at Johns Hopkins. To see what's new, important, and just worth sharing, visit

hub.jhu.edu

Student Work Crucial to Bridge Assessment

One year after the Key Bridge collision in Baltimore, a team of Johns Hopkins students have helped identify which major bridges might be next

By Claire Goudreau

On March 26, 2024, a container ship accidentally struck the Francis Scott Key Bridge in Baltimore, causing a collapse that killed six people. At the time, Michael Shields, an associate professor at Johns Hopkins University, described the collision as “a wake-up call.” With the help of a Rapid Response Research grant from the National Science Foundation, he formed a team of students to help assess the country’s bridges and develop new risk models.

The undergraduate and graduate researchers on Shields’ team are responsible for a wide variety of critical tasks, including analyzing dozens of bridges, writing programs to collect data from the internet, and building a virtual portal to report the project’s findings. This allows them to consolidate vast amounts of information to calculate the current stresses on major American bridges and pinpoint the most vulnerable ones.

According to graduate researchers Damir Akchurin and Promit Chakroborty, who manage the undergraduate researchers on the team, being involved in a project like theirs is a key part of the Hopkins experience. Eighty percent of undergraduate students leave the university having contributed to research.



Michael Shields and the research team gather for a group photo taken by Will Kirk.

“At this particular institution, it is kind of inevitable,” Akchurin says. “There are so many opportunities.”

Adds Chakroborty: “Most research projects require tasks at all levels of expertise. There’s always something that can be found to fit your tastes and your niche.”

Junior Diran Jimenez agrees. Despite having little experience, he feels his ideas and input are valued by the group.

“When I say we shouldn’t do X because of Y, that’s taken into account,” he says. “That’s real input that you can see the results of in the future. And a lot of the numbers I’ve put together are relied on by everyone, which is really rewarding because I’ve really contributed to this project.”

Being part of the project has inspired senior Natalia Dougan, another undergraduate researcher on the team, to consider new career ideas.

“I had no intention of ever pursuing any research position or academia,” she says. “Now I’m more inclined to want a position where the research process is part of my day-to-day.”

So far, the team has identified 19 major American bridges that can expect a collision strong enough to cause catastrophic damage or collapse within the next 500 years, including San Francisco’s iconic Golden Gate Bridge and Maryland’s Chesapeake Bay Bridge. Bridge design standards stipulate that the risk should be less than once every 10,000 years.

These findings have serious implications for the safety of the nation’s infrastructure. Shields hopes the team’s assessment will lead to real-world change, all thanks to the work of student researchers.

Combining Engineering and Medicine

Alumnus David Gakenheimer's legacy giving ensures future innovators can push the boundaries of biomedical engineering

STORY BY SARA FALLIGANT • PHOTOGRAPHS BY LISA HELFERT

When David Gakenheimer was a Johns Hopkins undergraduate in the early 1960s, collaboration between engineers and doctors was rare. But Gakenheimer, Engr '65, saw untapped potential — possibilities that, decades later, he is helping to unlock. Now, through a combination of planned and current-use gifts, he is investing in the integration of engineering and medicine, empowering the next generation of innovators to revolutionize patient care.



“It’s not that we didn’t know there were some interesting problems, but there was no motivation on either side of the table,” recalls Gakenheimer, who later earned a PhD in applied mechanics at Caltech and patented one of the first FDA-reviewed medical devices using artificial intelligence (AI). “But now the ballgame is really very different. There have been some dynamic products developed using AI and engineering methods that really make a difference for doctors and patients.”

“I greatly appreciate my education at Hopkins. I want to help continue the tradition of groundbreaking research.”

- DR. DAVID GAKENHEIMER -

To help drive the future of biomedical engineering, Gakenheimer has made a lasting commitment through his estate plan to support the Whiting School of Engineering. He is providing for Hopkins by naming the university as the beneficiary of his IRAs and a testamentary charitable remainder unitrust.

His estate gift will endow a professorship, an investment Whiting’s Vice Dean for Faculty Lori Graham-Brady says can have a broad impact across the entire school.

“Named professorships enable us to attract and retain top faculty who drive engineering innovation and elevate

Gifts from the estate of Dr. David Gakenheimer will establish the David C. Gakenheimer Professorship at the Whiting School of Engineering.

Dr. Gakenheimer and his partner, Tina Imamura, recently visited the Johns Hopkins University Homewood Campus for a tour of the new Hopkins Student Center, which is expected to open this year.

Whiting's scholarly impact," she explains. "Professors in these roles play a transformative part in expanding research areas and strengthening existing programs. In some cases, professorships help us retain top talent — highly sought-after faculty that other institutions would love to recruit."

For faculty, these positions also provide time and resources to explore bold, high-risk ideas.

"The potential payoff, both for the faculty member and the school, is enormous," Graham-Brady adds.

In addition to his legacy giving, Gakenheimer is supporting the next generation of researchers today. He funds doctoral students at the Johns Hopkins University Institute for Computational Medicine who are pioneering research into heart arrhythmias. It's a topic of personal interest, as he lives with atrial fibrillation (Afib).

"It's a very important scientific area for the future," he says.

Gakenheimer has also enjoyed interacting with the fellows, even from his home in California.

"Having the fellowship is a lot of fun because I get to meet the students, mostly by Zoom," he says. "I enjoy staying engaged with people at Hopkins. It keeps me involved and sharp."

The benefits of a fellowship extend beyond mentorship. Like named professorships for faculty, fellowships provide students with the freedom to explore innovative ideas without the constraints of predefined research grant requirements.

"PhD students are the engine that drives research across the university," Graham-Brady says. "They're the source of so many new ideas and



innovative approaches. In many ways, research just couldn't happen without them."

Gakenheimer was an early explorer of AI in medicine, diving into the field in the late 1990s after a career in aerospace defense. Today, Graham-Brady's own lab is researching AI's potential in extreme environments, highlighting its evolving role in science and engineering.

"When people think of AI, they often picture tools like ChatGPT and Siri, which are amazing applications," she

says. "But AI has far greater potential. It can generate new research directions, synthesize vast and varied data, and enhance decision-making, all in collaboration with human expertise."

As AI continues to transform research and medicine, Gakenheimer remains proud of Hopkins' leadership in engineering and medical innovation, particularly within the Whiting School.

"I greatly appreciate my education at Hopkins," he says. "I want to help continue the tradition of groundbreaking research."

Research Saves Lives



Asante Wawa-Achayo

By Helping Kids with CDH Breathe Better

At five months pregnant, Songo Wawa went to a routine appointment and learned her baby, Asante, had a hole in his diaphragm preventing his lungs from developing fully. About 20% of children with the condition, known as congenital diaphragmatic hernia (CDH), don't survive, according to Shaun Michael Kunisaki, a professor of surgery in the Johns Hopkins University School of Medicine and the director of the fetal program at the Johns Hopkins Children's Center. Kunisaki's laboratory, which is funded by the National Institutes of Health, researches ways to speed up lung growth in-utero so that when children with CDH are born they have enough lung to survive. One method being studied is fetoscopic tracheal occlusion, in which a small balloon is placed in the windpipe to help the lungs expand. The experimental surgery was performed on Asante while he was still in the womb. After birth, he underwent a second procedure to repair his diaphragm. The surgeries, both performed at Johns Hopkins, were successful. Asante, now a 1-year-old who loves *Sesame Street*, no longer routinely needs oxygen support and can eat by mouth. He follows up regularly with his doctors at Johns Hopkins. "What they did for our family, what they continue to do," says his mother. "We're grateful."

By Reducing Delays in Leukemia Diagnosis

Growing up in Ukraine in the wake of the Chernobyl nuclear disaster, Eugene Shenderov was diagnosed with leukemia at an early age. He survived the cancer and now, as a researcher at Johns Hopkins University, he helps others do the same. Shenderov's team has developed an artificial intelligence program that helps doctors diagnose acute promyelocytic leukemia (APL), a rare subform of leukemia that affects the white blood cells. APL is extremely aggressive and can cause sudden, life-threatening brain bleeds. But there is one silver lining: Once diagnosed, APL goes from being the most lethal leukemia to the most curable one. Currently, only specialized hospitals can make the diagnosis using genomic testing, with multi-day delays being the norm. Shenderov's program helps doctors reach the same conclusion in just a few hours using peripheral blood smears, allowing them to start treatment as soon as possible. Now, his program needs thorough testing to get it ready for clinical rollout. Typically, that would involve federal support, but cuts to research funding have Shenderov worried about the impact on future treatments, cures, and diagnostic tools — including his own AI program. "You never know what you need in order to save a life until you've looked into it," he says.



Eugene Shenderov

Without research — at Johns Hopkins and at thousands of other universities, medical schools, and research institutions across the nation — scientific breakthroughs suffer, and the lifesaving treatments of tomorrow are at risk.



Vanessa

By Testing New Treatments for Colon Cancer

Just before her 60th birthday, Vanessa was diagnosed with advanced colon cancer that had already spread to her stomach and liver. Even after a five-hour surgery and nearly a year of grueling chemotherapy, her cancer continued to grow. When her doctor told her there was nothing left to try, the mother and grandmother began searching for information on her own. She learned about a clinical trial, based on more than 30 years of research and funded in part by the National Institutes of Health, being conducted at the Johns Hopkins Kimmel Cancer Center. Vanessa was admitted to the clinical trial, which was testing pembrolizumab, a drug that allows the immune system to override cancer cells' attempts to shut down its response. Her tumor shrank by 60%. Vanessa is certain the treatment saved her life. "They were so wonderful to my family and me," she says of Johns Hopkins oncologist Dung Lee and nurse Holly Kemberling. "They explained everything. It was evident their hearts are in it." Ultimately, treatment provided through the federally supported trial gave Vanessa the one thing she wanted most: more time with her family. She shares her story to help others. "My dream was to see my grandchildren grow up," she says. "Now I'm a great-grandmother. ... Each day is a blessing."

By Making Epilepsy Surgery More Successful

For the roughly 21 million epilepsy patients worldwide whose seizures aren't relieved by medications, removing the region of the brain where seizures originate is the last resort. But current clinical tools make precisely locating the epileptogenic zone (EZ) extremely difficult, rendering surgery effective in only about half of cases. That's why Johns Hopkins biomedical engineer Sri Sarma and her team are developing new technologies to pinpoint the exact origin of seizures in the brain — helping surgeons determine if and where they should operate and improving the success rate of epilepsy surgeries. Among the innovations developed by Sarma's lab is the software EZTrack, which creates a heat map of the brain to help doctors identify a patient's EZ in seconds with high precision. Outside of her lab, Sarma has emerged as a mentor for tomorrow's neurotech leaders. She notes the significance of Johns Hopkins, not only as a leader in translating the latest research into treatments and cures, but also as a place where so many future innovators find their start. "Funding doesn't just enable us to make discoveries," Sarma says. "It supports the mentoring and growth of the next generation of leaders. We can't afford to underestimate the importance of building up America's STEM workforce."



Sri Sarma

Discoveries come to life through the people they impact. To learn more about the critical research being done at Johns Hopkins, visit hub.jhu.edu/research-saves-lives.

The Power of Persistence

School of Nursing alumna shares her extraordinary path to Hopkins and the inspiration behind her legacy commitment

STORY BY RUTH WENDLANDT • PHOTOGRAPH BY WENDY HALPERIN

“If not now, when?” Cathy Lonas asks as she reflects on her journey to the Johns Hopkins School of Nursing and the reason behind her legacy gift. At the age of 53, Lonas, who was well established in her business and marketing career, embarked on a nursing degree — an inflection point in her life.

Lonas, a lifelong learner, shares how education alleviated some of her darkest days. Growing up, she faced trauma and abuse but persevered, breaking away from a tumultuous environment.

“Those experiences are lifelong and have a lifelong impact,” explains Lonas. “I survived and created a fulfilling life for myself through education.”

Hopkins is where Lonas realized her personal adversity and professional life had been guiding her towards nursing.

“Everything started weaving together,” says Lonas, Nurs ’07. “The background of my childhood trauma, of care, of seeing nurses in action, all of that started to combine.”

The immense gratitude Lonas has for the School of Nursing motivated her to include the school in her estate plan, establishing the Cathy Lonas RN ’07 Scholarship for Psych DNP Students and the Cathy Lonas RN ’07 Strive to Thrive Fund.

We spoke with Lonas about her giving, career, and why it’s never too late to chase your dreams.

How did your passion for health care begin, and how did the School of Nursing impact your career trajectory?

During my career in business, I became more immersed in health care and gerontology. After I earned my master’s degrees in marketing and gerontology, I spent several years working in marketing at retirement communities. I told my late husband that I felt older adults were not being heard, and I perceived this as a problem. He responded, ‘What are you going to do about it?’ At 50, I marched into my local community college and earned my certified nursing assistant (CNA) degree. I needed to prove to myself I could do it.

In the spring of ’06, I enrolled at Hopkins. I showed up in Baltimore, and the race was on. I was in my early 50s, and I was acing organic chemistry. You are never too old to go back to school. After graduation, I started my own geriatric care management practice. It was hands-on care. My clients were in their 70s, 80s, 90s, and 100s. I’m now retired, but I miss it every day.

Your legacy gift targets two separate areas: mental health and danger assessment training. What do you hope your support achieves?

Through the scholarship, I hope I can give nurses interested in psych and mental health the opportunity to experience the extraordinary clinical training at Hopkins. I want students to learn through the Hopkins lens how to navigate the changing waters of our health care system.

The second part, the Strive to Thrive Fund, is born out of my experiences, and it fits into that nursing component as well. It’s to provide additional training, funds, and opportunities for

Cathy Lonas is supporting mental health education and danger assessment training at the Johns Hopkins School of Nursing through her estate plan.

students to learn how to use the danger assessment tool. It's an instrument designed to measure the risk in women for death or almost death from an intimate partner.

The insidious nature of abuse is victims are trained to hide it, keep quiet, and not tell. Let's expand the danger assessment training to all health care professionals and providers to help support victims. We can teach victims they can survive and thrive through support services.

What motivates you to stay connected to the Johns Hopkins School of Nursing?

Hopkins has been an invaluable part of who I have become. I can still see the auditorium on my first day, full of professors and classmates; they live in me today. The Hopkins credential is priceless. It is only in the aftermath that I have fully embraced and acknowledged the experience I have been privileged to receive. The School of Nursing is a family. Our motto is *vigilando*, which means 'forever watchful.' It's my goal and my wish with my gifts to help the next generations of nurses succeed.

As you reflect on your career, what has inspired you the most?

The hallmark of my Hopkins experience is attending the School of Nursing at a late age. It put a capstone on my career. When I developed my legacy gift, I never anticipated it would happen — as the reality sank in on what I had just done, nobody could have prepared me for the sense of gratitude and peace. It was such a full-hearted moment. It's still sinking in. The when is now, and I am grateful.



“I hope I can give nurses interested in psych and mental health the opportunity to experience the extraordinary clinical training at Hopkins. I want students to learn through the Hopkins lens how to navigate the changing waters of our health care system.”

— Cathy Lonas —

Their Legacy Told



Charitable gift annuities from Richard and Cindy Nickelsen support the Krieger School's Department of Earth and Planetary Sciences.

DR. RICHARD P. NICKELSEN was a dedicated scientist and educator who led a life of great adventure. An outdoorsman and avid birdwatcher, he served in the army in World War II and, after graduating from Dartmouth College in 1949, completed both his master's (1951) and his PhD (1953) in geology at the Johns Hopkins University Krieger School of Arts and Sciences. He then embarked on a teaching career, first at Penn State, then at Bucknell University, where he founded the Department of Geology and taught for 32 years. Throughout his tenure, he continued to pursue research. His wife of 64 years, **HELEN "CINDY" BEARDSLEY NICKELSEN**, accompanied him on a variety of expeditions, from a ranch in Wyoming to the mountains of Norway. She also shared

her husband's passion for teaching and learning. Having earned a history degree from Connecticut College in 1948, she received training in social work before stepping back to focus on raising the couple's children. Later, she would enter the education field herself as a reading and math specialist. The couple felt it was important to give back to their community. Richard was active in several local environmental organizations and a founding member of the Linn Conservancy. Cindy was a dedicated member of the League of Women Voters. In honor of the education Richard received and his professors at the Krieger School, the Nickelsens established charitable gift annuities to support the future of geological scholarship and research at the Department of Earth and Planetary Sciences.

DR. RICHARD P. LONGAKER had a long and distinguished career in academia. He grew up in Pennsylvania and served in the army in World War II before completing his bachelor's at Swarthmore College and his master's at the University of Wisconsin in 1950. After earning his PhD from Cornell University in 1954, he went on to professorships at the University of California, Riverside, and Kenyon College. He began teaching courses on the U.S. presidency and constitutional law in the Department of Political Science at the University of California, Los Angeles, in 1961 and became the department's chair in 1963. From there, he was selected by Johns Hopkins to become the university's eighth provost and vice president of academic affairs

in 1976. A respected leader, he oversaw an expansion of the university during his tenure and played an important role in the founding of the Center for Talented Youth, or CTY, in 1979 and the School of Nursing in 1983. In 1986, he stepped down from his role as Johns Hopkins' chief academic officer and returned to California to lead the university's first West Coast office in Santa Monica. The same year, he cemented his legacy of commitment to Johns Hopkins by establishing a charitable gift annuity benefitting CTY and the university's center for graduate programs focusing on Italian Renaissance literature, art, and culture. After his retirement, he remained involved with the university and enjoyed reading, being outdoors, and traveling with his wife, Mollie.



Provost and Vice President for Academic Affairs Emeritus Richard Longaker, pictured with his wife, Mollie Longaker, also served on CTY's advisory board.

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65	*7.9%
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