

JOHNS HOPKINS OFFICE OF GIFT PLANNING
FALL/WINTER 2024

Planning MATTERS





On the cover: Clyde and Karen Flory
Photographs by Harley J. Seeley

FROM THE JOHNS HOPKINS NEWS NETWORK

HUB

Johns Hopkins University rose to No. 6 in the *U.S. News & World Report* rank-

ings of the nation's best colleges for undergraduates — its highest-ever position. *U.S. News* also recognized JHU as a national leader in several academic disciplines at the undergraduate level. The university is No. 1 in biomedical engineering, No. 5 in bioinformatics/biotechnology, and rose three positions to No. 18 in artificial intelligence.



In a review of previous studies, a **Johns Hopkins Children's Center** team has concluded that some video games created as mental health interventions can be helpful — if modest — tools in improving the mental well-being of children and teens with anxiety, depression, and attention-deficit/hyperactivity disorder (ADHD). Amid a shortage of pediatric mental health providers, researchers hope that the games could be helpful interventions for child patients until they are able to receive individualized care.



WILL KIRK, JOHNS HOPKINS UNIVERSITY

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Students from more than 40 universities competed in this year's HopHacks, an annual coding marathon hosted each fall by the **Whiting School of Engineering's Department of Computer Science** that challenges teams of up to four "hackers" to design new projects from scratch in only 36 hours. This year's grand prize was awarded to the Johns Hopkins team behind NoteSyncer who were inspired to create the accessible, AI-powered notetaking platform after receiving an email from Student Disability Services seeking class notetakers.

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

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Planning Matters

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Under Pressure

New study exposes how proteins resist destruction under extreme conditions while successfully demonstrating that artificial intelligence can accelerate research by decades

By Haley M. Moran, Edgar Manriquez-Sandoval, Piyoosh Sharma, Stephen D. Fried, and Richard E. Gillilan

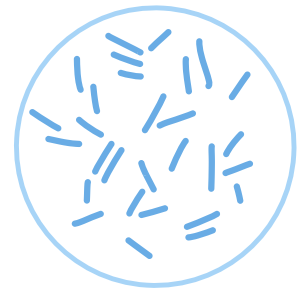
The way a protein's building blocks, or amino acid chains, "fold" or organize into 3D structures determines their function. These structures can be very sensitive to temperature, pressure, and other factors in the environment (as well as biochemical and genetic mishaps) that cause them to misfold into dysfunctional shapes. But there are many species in the deepest ocean trenches of our planet that thrive under extreme pressures that would kill most living things. To better understand how these creatures survive in such crushing conditions, we examined how their proteins, one of the building blocks of life, have evolved ways to resist the pressure.

In our experiment, we subjected *Thermus thermophilus* — a microorganism widely used in scientific experiments owing to its ability to withstand heat — to lab-simulated pressures mimicking those of the Mariana Trench. The tests revealed that 60% of the organism's proteins resisted the pressure while the rest buckled under it and their shapes became deformed, specifically at points or sites known to be of important biochemical function. Those proteins that withstood the extreme conditions were able to do so because they have extra space built-in between their atomic structures, a design that provides flexibility and allows them to compress without collapsing.



Our study demonstrated the potential of artificial intelligence (AI) to dramatically increase the speed of scientific discovery. We used Google's AlphaFold to map the pressure-sensitive parts of *T. thermophilus*' entire set of proteins. The AI tool predicted the structure of the organism's more than 2,500 proteins, helping us calculate the correlation between their configurations and their ability to resist pressure changes — a feat that would have taken many decades to complete with direct measurements alone. The results provide new insights into how the building blocks of life might have evolved under extreme early Earth conditions, highlight how pressure tests can be used to reveal additional molecular functions that remain hidden under ambient conditions, and generate hypotheses for further structural and biophysical research studies.

Researchers from the Fried Lab, including the authors of the pressure study, pose for a group photo outside Gilman Hall. The Fried lab is led by Stephen D. Fried, PhD, and seeks to connect the biophysics of protein folding to the broader context of cell biology, aging biology, and prebiotic biochemistry.



To learn more about about the work being done at the Fried Lab, visit friedlab.com/research.

A Lifetime Dedicated to Health Care

The Dr. Clyde Flory Jr. and Karen Flory Scholarship provides opportunity to medical students

STORY BY RUTH WENDLANDT • PHOTOGRAPHS BY HARLEY J. SEELEY

In 1959, Clyde Flory Jr., MD, made the journey from Baltimore to Detroit to embark on his internship, residency, and fellowship in allergy and immunology at Henry Ford Hospital. That move would change his life. During his residency, he met Karen, the future Mrs. Flory, a registered nurse and native Michigander. Flory recalls after their meeting that he knew Michigan was going to be home.

“We are now celebrating our 61st wedding anniversary,” he says. “My education at Johns Hopkins School of Medicine opened doors for me both professionally and socially, throughout my 65 years and counting in Michigan.”

Clyde’s medical career took the Florys to Lansing, Michigan, where he worked in private practice for 42 years and



Clyde and Karen Flory married in 1963.

taught at the Michigan State University College of Human Medicine. He retired in 2005. Karen worked as a nurse with the East Lansing School District for 20 years prior to her retirement.

The Florys have been dedicated to advancing health care, and it’s why they have remained committed to the Johns Hopkins School of Medicine. Most recently, they established a charitable gift annuity (CGA) to create the Dr. Clyde Flory Jr. and Karen Flory Scholarship.

“We want to enable the best students to be able to afford a Johns Hopkins School of Medicine education,” says Clyde. “Johns Hopkins has a worldwide reputation of continuing excellence in cutting-edge research, education of medical students, doctors, and patient care.”

A CGA provides guaranteed income and potential tax savings to donors and supports the future needs of Johns Hopkins. The Florys established their CGA through a one-time distribution from their IRAs, a unique way to give for individuals who are 70 ½ and older.

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- DR. CLYDE FLORY JR. -

“It gave us the opportunity to complete our funding of our chosen amount for our scholarship,” explains Clyde. “In return, Johns Hopkins rewards us for our early deposit and commitment.”

It’s all about opening doors for the next generation of health care professionals, underscores Karen. “All I ever wanted to do was be a nurse. I’ve always enjoyed working with people.”

“Karen was born to be a nurse,” echoes Clyde.

Clyde and Karen Flory each used a one-time distribution from their IRAs to fund a CGA supporting the Dr. Clyde Flory Jr. and Karen Flory Scholarship at the Johns Hopkins University School of Medicine. The CGA provides them with guaranteed lifetime income and funding their gift via their IRAs helped them meet their required minimum distributions.

In addition to their giving, the Florys also venture back to the School of Medicine campus. This past spring, they drove to Baltimore to attend Clyde's 65th class reunion. The event brought back memories for Clyde as he toured campus and watched lab demonstrations. He reminisced about studying nightly at the Welch Medical Library until closing and then into the early hours in his room.

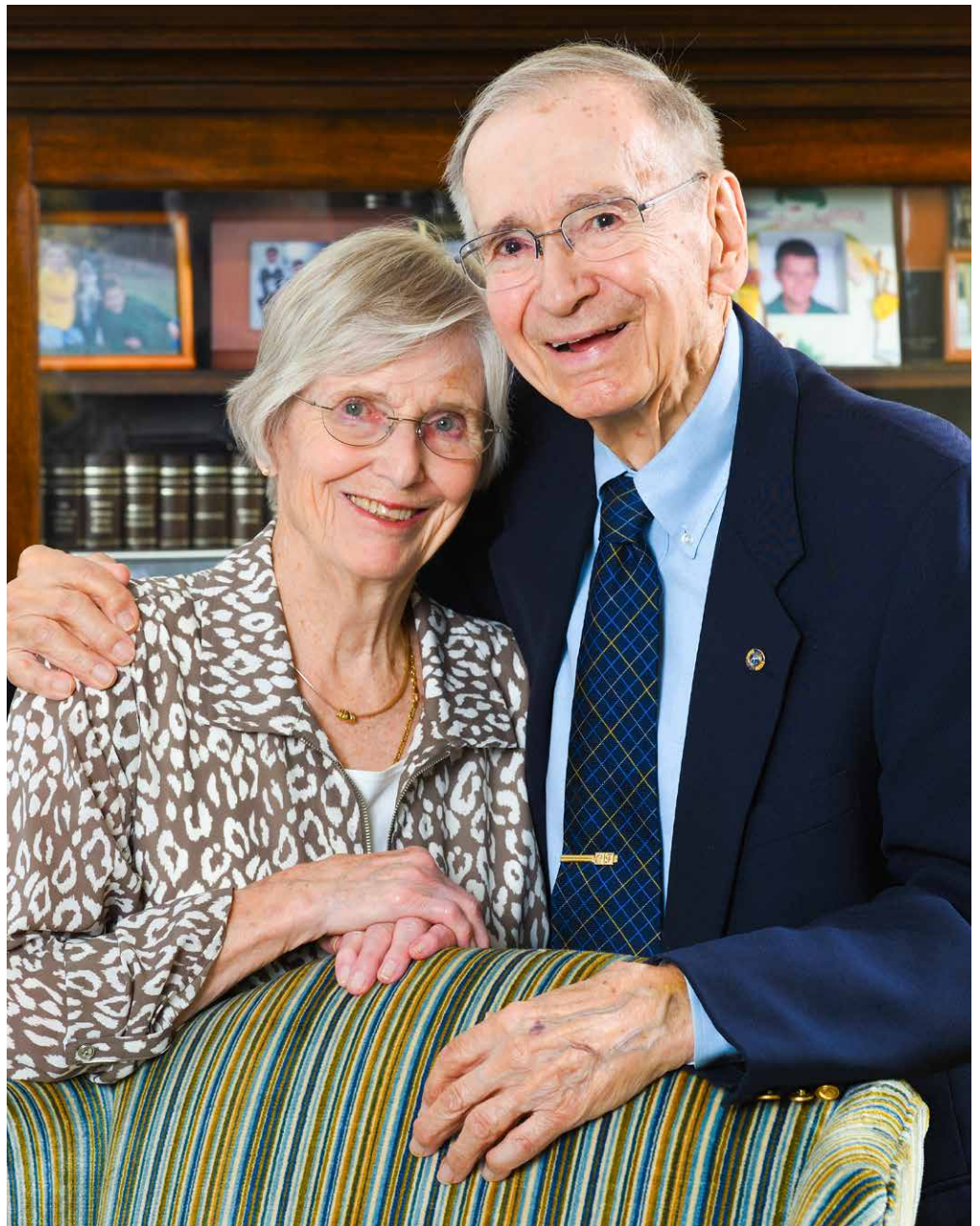
"On revisiting Hurd Hall, I recalled my CPC presentation one Saturday morning to a Johns Hopkins senior staff physician, before a packed auditorium when I was a near-petrified medical student," he says. "This year there were four of us from the class of 1959 at the reunion. It was meaningful."

The Florys' visit to Maryland wasn't the only memorable highlight of their trip. "We met our first great-grandchild on our way home," they share. "We have three sons, six grandchildren, and our one great-grandchild."

As Clyde reflects on his career, he says his passion for health care and the philosophy of giving back was instilled in him at a young age. He accentuates its relationship to the forced frugality of the years of the Great Depression and World War II.

"I'm old enough to have experienced those events and how they altered lifestyles," he says. "It's an emphasis of gratitude for what we had and a reason to share with others."

Clyde says his greatest accomplishment is his family, and professionally it was passing a law through the Michigan Legislature focused on increasing the availability of adrenaline and training in



the treatment of anaphylactic shock on all 911 emergency vehicles. After three years of Clyde's statewide research, presentations, and persistence, the bill passed unanimously. Gov. Jennifer Granholm even handed Clyde one of her signing pens.

"I've been president of different medical organizations throughout my career, but nothing is equivalent to getting that bill passed, which affects about 200k Michiganders," Clyde says.

Outside of those career moments, Clyde stresses you never know where your adventure is going to lead you.

"From Hopkins, I thought I would be heading to the Rocky Mountain states. But lo and behold, I met this RN at Ford Hospital who convinced me to stay," he says. "I felt there would be a great future thanks to Hopkins. I've spent my lifetime in medicine; it's been impactful. It all has worked out wonderfully well for me."

JOHNSHOPKINSLEGACYSOCIETY

Engage and Explore

STORY BY BETH MORGEN • PHOTOGRAPHS BY LISA HELFERT

What better place to spotlight space exploration than the Maryland Science Center. It was an ideal setting for the 7th Annual Johns Hopkins Legacy Society Luncheon, which celebrated donors who support the future of Johns Hopkins University and Medicine. Attendees enjoyed the museum's interactive exhibits before they gathered for a three-course meal and heard from a Hopkins space expert.

The event, held on Sept. 10 and hosted by the Johns Hopkins Office of Gift Planning, featured keynote speaker Jason Kalirai, PhD, mission area executive for space formulation



at the Johns Hopkins Applied Physics Laboratory (APL). He leads a team responsible for the formulation of all new APL civil space initiatives, oversight of the laboratory's large portfolio of space science grants, and integrated initiatives that cut across the nation's civil and national security space domains.

"Everything we do at Johns Hopkins APL and the work that we pursue and that my team enables would not be possible without the support that people like you provide to the university. It's what makes the university strong," Kalirai told the audience.



Members Jill McGovern, Robert Schuerholz, and Linda Schuerholz at the 2024 Johns Hopkins Legacy Society Luncheon



In his presentation, Kalirai provided a status update on the space industry, including the NASA Dragonfly mission to explore Saturn’s moon Titan and involving a team of experts led by APL. He also shared APL’s strategy to protect the world from space hazards, like asteroids, and revisited the successful DART mission of 2022. He discussed other focus areas, from the goals of

lunar missions to the Parker Solar Probe’s exploration of the sun. The presentation was followed by a lively Q&A with legacy society members.

Established in 2012, the Johns Hopkins Legacy Society recognizes more than 2,000 donors who have made a commitment to Johns Hopkins University and Medicine through an estate plan or a life income gift, such

Legacy Society members enjoyed Dr. Kalirai’s presentation and a three-course meal in the Maryland Science Center’s first-floor atrium.

as a charitable gift annuity.

Anne Doyle, executive director of the Office of Gift Planning, closed the luncheon by thanking legacy society members for their forward-looking commitments. “Your legacy gifts are a source of strength and support for Johns Hopkins,” she said.



Above: In his presentation, Dr. Kalirai described the critical role that APL is playing in several current space missions, including NASA’s Parker Solar Probe, which is operated and was designed and built at APL. The spacecraft will come within 3.9 million miles of the Sun on Dec. 24, 2024. Image: NASA/APL.

Left: Several Legacy Society members spoke with Dr. Kalirai after his presentation and got personal answers to their space-related questions.

It's Never Too Early

Passion and practicality inspire School of Education alum's legacy commitment

STORY BY BETH MORGEN • PHOTOGRAPH BY ERIN WHITTLE

At age 52, Jonathan Nateghi-Asli might not seem like a legacy donor. But since retiring from a nearly 30-year career in the Montgomery County School, Maryland, public school system, he started aligning his assets with his values. Among them was education, including his graduate student experience at the Johns Hopkins University School of Education where he earned a master's in educational studies in 2005. He has since included the school in his estate plan.

Nateghi-Asli also remembers what it was like when his mother died rather suddenly, leaving him and his father guessing at what her wishes would have been. The lessons learned led them to complete his father's estate plan before he died last year at age 86.

"It's not thinking about life versus death," Nateghi-Asli says. "It's just thinking ahead and saying, 'All right, what do I want to do with all this stuff at some point in my life?'"

We spoke with Nateghi-Asli to learn more about his early — and generous — commitment to the School of Education

What inspires you to stay connected to the Johns Hopkins School of Education?

Hopkins allowed me to explore programs at the highest quality research-based institution available. The School of Education was very project and implementation-based, and that was really important for me — to apply immediately the work that I was learning about to the jobs that I was holding at the time. And particularly now with education, the school is looking at the challenges that we face to get our educational system back on track post-COVID — not only at what's going on in education, but they're being innovative. They are going into school systems and supporting education in its ever-changing world.

You spent much of your professional career in education, including as a teacher and school administrator. How did your experience at the School of Education impact you throughout your career?

While I was getting my master's, I had also moved into a new position called a staff development teacher, which was a school-based training program. I was able to use what I was learning about curriculum, leadership, and building a school culture to my job. The other thing that was really great was this data-driven decision-making class. When I became a resource teacher at a different school, which was one year from a takeover from the State of Maryland because of test scores, it was the beginning of the No Child Left Behind Act. It's all about the data. A strong focus of my work was developing a data system long before schools were doing this on a global scale and working with these teams of people to turn around the school. We had to do that in one year, and we did.

You made a generous commitment from your estate plan to support a scholarship at the School of Education. Why did you make your commitment now?

I was getting toward the end part of a career and looking at finances and property. It was time to make sure that all this stuff was on paper so it didn't become chaos if I or my husband suddenly pass away. Our discussion was really about giving to what we've worked hard for — about helping people and making sure that people can make themselves better and have opportunities. Hard work paid off for me in my life, and I want that hard work to continue returning on its investment even when I'm gone. The School of

Jonathan Nateghi-Asli has included a gift in his estate plans that will support a scholarship at the Johns Hopkins School of Education.

Education is probably one of the best to focus on the education part of who I am and the importance of that.

Your scholarship includes a preference for supporting first-generation students. Why is that important to you?

I am a first-generation college graduate. I never really thought too much about that until I started working in a high school where we had a very diverse population racially and socioeconomically. What I noticed was a huge disparity of access to resources or knowledge compared to families who had gone to college and who lived in certain zip codes. I was helping all of my students but realized my minority students actually needed extra support, care, and awareness to help get them through. These students, who are now going into colleges and universities, are becoming the firsts in their families, and some of them are going into education. They're going to need support throughout their career just like everybody else.

What do you hope your scholarship achieves?

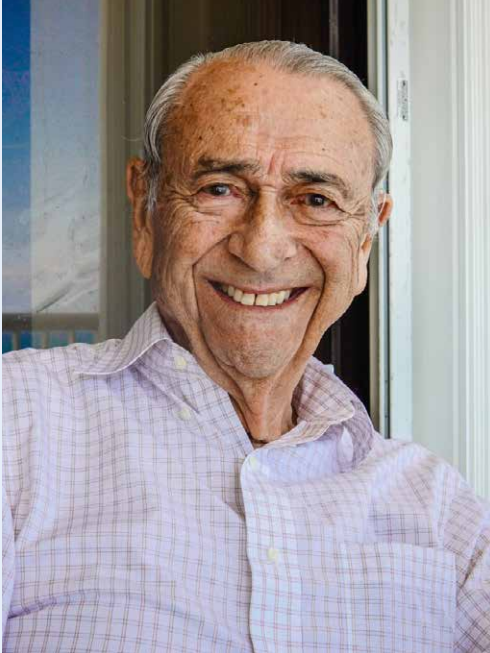
I want the American dream to continue, allow the melting pot to flourish, and remove barriers that immigrants particularly face daily, but especially in educational and white-collar employment. I want them to be able to bring their perspectives to the table in their programs to help them grow and for other students who may not be like them to actually hear and understand. And by planting that seed there, that seed will continue to grow and plant more seeds. This might take multiple generations to happen, but if I feel like I've dropped a few seeds and had a few plants come up and they have seeded, then that's the right thing to do.



“Hard work paid off for me in my life, and I want that hard work to continue returning on its investment even when I’m gone. The School of Education is probably one of the best to focus on the education part of who I am and the importance of that.”

– Jonathan Nateghi-Asli –

Their Legacy Told



Dr. Gilbert Levin supported the Whiting School of Engineering and the Sheridan Libraries at Johns Hopkins through a gift from his trust.

DR. GILBERT V. LEVIN was a scientist ahead of his time. A Baltimore native, he began his undergraduate education at the Johns Hopkins Whiting School of Engineering in 1941, but paused his studies to become a shipboard radio operator in the Merchant Marine during World War II. After his service, he returned to the Whiting School where he completed his undergraduate (1947), masters (1948), and doctoral studies (1963). He then turned his attention to public service, cleaning the water and air and addressing all manner of public health concerns as a sanitary engineer in Maryland’s health department and as a public health engineer in the health departments of California and D.C. In the course of this work, he developed a technique for detecting the presence of micro-organisms in water using food

sources labeled with radioactive isotopes to identify whether or not digestive processes had occurred. While chatting with a friend from NASA, Dr. Levin had the thought that this same technique could be used to test for the presence of microbial life in space. He pitched the idea, and he and his late colleague, Dr. Patricia Straat, were invited to conduct their labeled release experiment as part of the Viking Project, the first successful attempt to land a spacecraft on Mars. He donated a collection of prototypes and papers regarding his work to Johns Hopkins during his lifetime and provided support for the Whiting School and the Sheridan Libraries through his trust so that future generations of scientists can continue to learn from his experiments and carry on his legacy of discovery.

ANNE KELLY is remembered as a good listener who made a difference in the lives of others. She began her life on a dairy farm in Pennsylvania where she enjoyed caring for her family’s animals and learning about the business side of farming. After studying political science and history in college and earning a master’s degree in education, she became a teacher in Montgomery County, Maryland. She later returned to school herself and completed a second master’s in organizational development at George Washington University, which she followed with an impressive career in organizational leadership. She spent eight years as CEO of Federal Consulting Group, where she served as an advisor to government officials and developed a talent for helping others

work through the issues they faced. When she developed peritoneal cancer in 2012, her doctor recommended she go to Sibley Memorial Hospital, a Johns Hopkins community hospital located in Washington, D.C. There she found comfort and solace in Sibley’s personal approach to care. Her physicians, Dr. Jeffrey Lin and Dr. Ari Fishman, who her surviving husband, Don, calls “real heroes,” provided her with outstanding treatment over the years and he credits them with giving the couple more time together. A gift from the Kellys’ trust supports efforts to find a cure for peritoneal cancer at Sibley’s Center for Gynecologic Oncology and Advanced Pelvic Surgery, continuing Anne’s legacy of helping others find hope during treatment and beyond.



A gift from Anne and Don Kelly’s trust supports peritoneal cancer research and treatment at Sibley Memorial Hospital.

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70	6.3%
65	*7.9%
65	*7.2%

*When payments are deferred for 5 years.



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