

Timely Funding for Promising Scholars

A New Hub for Healthy Aging Takes Off

Transforming the Patient Experience

Shifting the Paradigm in Mind-Body Illness

Medicine is a public trust
THE JOHNS HOPKINS CENTER
FOR INNOVATIVE MEDICINE



David B. Hellmann, M.D.,
M.A.C.P.
*Aliko Perroti Professor
of Medicine*

STEPPING UP WITH AGATHOS

One of the many wonderful gifts I received from my dad was his fascination with words — and the more complex the word, the better. Into this category falls “agathokakological.” A mouthful by any measure, it beautifully combines Greek roots to describe something that is simultaneously good (*agathos*) and bad or evil (*kakos*).

As I survey the unprecedented challenges at play today in health care, and the heroic way that CIM donors and faculty members are stepping up to meet them, it strikes me that “agathokakological” is an ideal descriptor. Or, to put a more literary spin on it, I could borrow from Dickens’ opening line to *A Tale of Two Cities*: “It was the best of times. It was the worst of times.”

In response to recent catastrophic cuts to federal research funding for talented clinician-scientists, CIM’s donors have met *kakos* with *agathos* by generously funding the Next Generation CIM Scholars program. As you’ll read on p. 2, the program will support the work of 11 early career clinician-scientists at Johns Hopkins with up to \$300,000 in funding over three years. It’s impossible to overstate the impact this timely funding will have in ensuring that life-saving advances in human health don’t wither on the vine.

Among the pressing health challenges we face today is Alzheimer’s disease. You’ll be encouraged to know that pathologist **Meaghan O’Malley Morris**, the *Anne and C. Michael Armstrong CIM Human Aging Project (HAP) Scholar*, is stepping up with creative approaches in the lab (p. 14) aimed at stopping Alzheimer’s early in its tracks, *before* it wreaks *kakos*.

Alzheimer’s disease isn’t the only threat to our rapidly aging population. Fortunately, with the opening of the *Human Aging Project*’s new translational research hub (p. 6), Johns Hopkins engineers and clinicians are collaborating to enable older Americans to experience “the best of times” — healthy, independent living, for as long as possible. The launch of Geriatrics Engineering@Johns Hopkins, truly a source of *agathos*, is tempered by our great sadness at the recent passing of HAP’s founding director **Jeremy Walston** (p. 9). While we all miss Jeremy terribly, the *Human Aging Project* stands as a proud tribute to his vision.

There are other reasons for optimism in the face of current trying circumstances, like the way CIM’s *Center for Humanizing Medicine* is multiplying improvements in patient care across Johns Hopkins through CHM’s impact grants (p. 12), and the legacy that CIM’s *Amos Food, Body and Mind Center* has had in bringing relief — and defining a new syndrome — to hundreds of patients afflicted by physical and psychological distress (p. 10).

I am so grateful to the many friends of CIM, and faculty members, whose unflagging commitment to *agathos* are enabling advances in patient care to continue during these tumultuous times.

David B. Hellmann, M.D.

2

Timely Funding for Promising Scholars

Thanks to support from generous donors, the Next Generation CIM Scholars program has offered a lifeline to early-career faculty who are “bright lights” in the areas of research, education and clinical care.

A New Hub for Healthy Aging Takes Off

Engineers and clinicians are working shoulder to shoulder — with others from nursing, business and public health — to create affordable solutions aimed at extending the time that older adults can remain living safely and independently at home.

6

Shifting the Paradigm in Mind-Body Illness

For hundreds of patients beset by significant gastrointestinal problems and psychological distress, CIM’s Amos Food, Body and Mind Center has brought answers and healing, and moved the field forward by identifying an entirely new syndrome.

- 12 Transforming the Patient Experience
- 14 Untangling the Origins of Alzheimer’s Disease
- 16 Catalysts for Change

WE BELIEVE

Medicine belongs to the public. Our mission is to create a different kind of academic medicine, to tear down ivory towers, share knowledge and dedicate ourselves toward one goal — making life better for patients.

DIRECTOR
David Hellmann, M.D.

ASSISTANT DIRECTOR
Michelle Sharp, M.D.

CHAIR OF INTERNATIONAL
ADVISORY BOARD
Stephanie Cooper Greenberg

CO-FOUNDERS
David Hellmann, M.D., *Director*
Richard Paisner, J.D.

COMMITTEE
Antoine Azar, M.D.
Mary Catherine Beach, M.D., M.P.H.
Clifton O. Bingham III, M.D.
Cynthia Boyd, M.D., M.P.H.
Colleen Christmas, M.D.
Shelley Cooke
Chris Durso, M.D.
Michael Fingerhood, M.D.
Elliot Fishman, M.D.
Panagis Galiatsatos, M.D.
Khalil G. Ghanem, M.D., Ph.D.
Jeremy Greene, M.D., Ph.D.
Dan Hale, Ph.D.
Nadia Hansel, M.D., M.P.H.
Hilary Hatch, Ph.D.
Melissa Helicke, M.B.A.
Caroline Jelavich
Jacky Jennings, Ph.D., M.P.H.
Erica Johnson, M.D.
Jill Kearney, M.H.A.
Landon S. King, M.D.
Steven Kravet, M.D.
Bruce Leff, M.D.
Rafael H. Llinas, M.D.
Justin C. McArthur, M.B.B.S., M.P.H.
Cynthia S. Rand, Ph.D.
Selwyn Ray, J.D.
Stuart Ray, M.D.
Antony Rosen, M.D.
Martha Abshire Saylor, Ph.D., R.N.
Mark Sulkowski, M.D.
Scott M. Wright, M.D.
Jonathan M. Zenilman, M.D.
Roy C. Ziegelstein, M.D.

on the web

If you’d like to learn more about the Johns Hopkins Center for Innovative Medicine, please visit our website: hopkinscim.org

Timely Funding for Promising Scholars

In her scientific quest to improve treatments for people living with HIV, Johns Hopkins' **Eileen Scully** has long held a strong commitment to both research and patient care. The holder of an M.D./Ph.D. from Yale, who trained at MIT and Harvard, Scully has since 2016 split her time between caring for patients in Hopkins' Bartlett Clinic and building her translational research program. That work focuses on the impact of sex on immune responses to viral infections such as HIV.

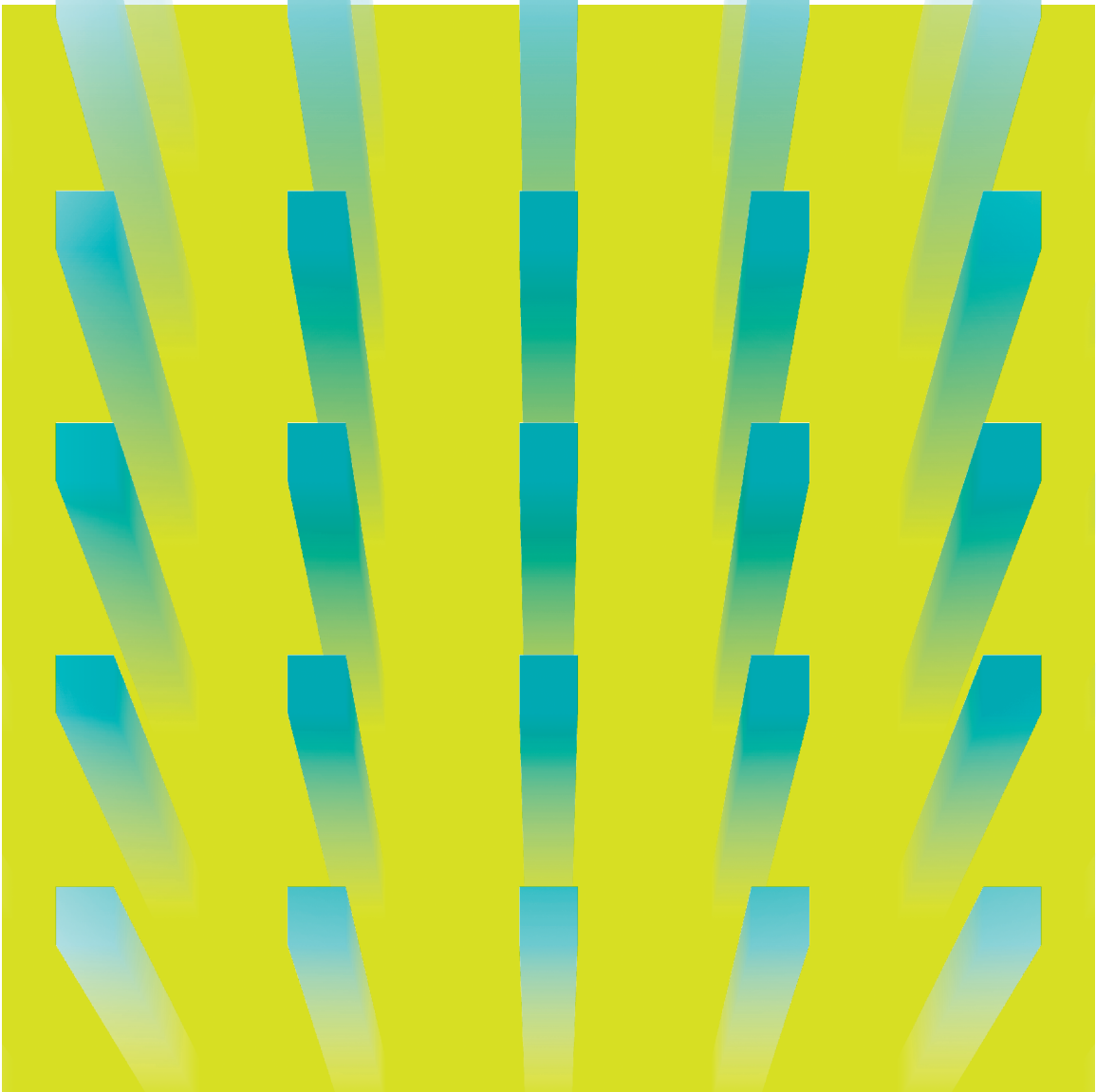
"Earlier this year, I felt the momentum really shift for me," Scully recalls. "I had secured a good amount of federal research funding and after what had felt like years of an uphill slog, I thought: 'Wow, now I have the fuel to really advance these promising areas of inquiry.'"

But in March, the bottom dropped out after two large federal grants that supported her work were terminated. The affected projects examine how sex-specific hormone exposures may impact the HIV reservoir, the primary barrier to a cure for HIV. At the same time, additional funding for a planned project on HIV dynamics during pregnancy and menopause in women in Uganda was delayed by new federal restrictions. It's work that could potentially lead to improved treatment in infectious diseases for both men and women everywhere.

"The funding disruption was a total earthquake in my own career, coupled with the much bigger cessation of USAID for health projects around the world, which felt so much bigger," says Scully.

Then in June came some good news: Scully was among 11 promising clinician-scientists at Johns Hopkins to receive a **Next Generation CIM Scholar Award**. The awards are made possible thanks to funding from generous CIM donors, including *Sarah Miller Coulson*, who is funding Scully's work.

The Next Generation CIM Scholars program was created to support outstanding early-career faculty who are innovators in the areas of research, education and clinical care. The selection process is very rigorous. CIM is accepting applications three times per year. Applicants must explain how the work they are proposing will fortify medicine as a public trust, and identify a senior faculty member who will mentor their work. Each Next Generation CIM Scholar is eligible to receive up to \$300,000 of funding over three years. From the 24 applicants who submitted proposals last spring, 11 recipients — hand-picked by leaders in specialties across the school of medicine — were selected.



"They are bright lights in their fields, who have the potential to make real advances."

Nadia Hansel

“They are bright lights in their fields, who have the potential to make real advances,” says **Nadia Hansel**, director of the Department of Medicine. “We need to invest in our best and our brightest now more than ever,” she adds, citing the recent cuts and interruptions in federal research funding, as well as increasing financial pressures on health care and academic medicine.

“It’s hard for me to overstate the importance of this award and its timing,” says Scully. “It’s been incredible, really allowing me to hone in on the questions where we will have the most impact.”

In creating the Next Generation CIM Scholars program, leaders were very intentional in targeting the support to clinician-researchers who are early in their careers. “This is where funding can make the biggest influence, where an early investment can give young faculty the boost they need to launch their careers,” says Hansel.

That is certainly the case for *Leslie Miller & Richard Worley Next Generation CIM Scholar* **Bipasha Mukherjee-Clavin**, an assistant professor of neurology whose research focuses on the progressive neurodegenerative condition known as Charcot-Marie-Tooth (CMT) disease.

“There is a lot of momentum-building during this early career stage,” she says. “If one good thing happens — one small grant or one new source of support — that success feeds on itself and starts to open more doors. It’s an outsized impact.”

“There is a very beautiful alignment between CIM and the Department of Medicine because our core values — that medicine is a public trust — are well entwined.”

Nadia Hansel

“There is a lot of momentum-building during this early career stage. If one good thing happens — one small grant or one new source of support — that success feeds on itself and starts to open more doors.”

Bipasha Mukherjee-Clavin

Despite its unusual name, Charcot-Marie-Tooth is a “remarkably common” form of peripheral neuropathy that is thought to affect about 1 in 2,500 people in the United States, Mukherjee-Clavin says. In her early research, she was on a team that created one of the first stem cell models of the disease. More recently she has moved into using animal models to better understand the biology behind the most common form of CMT.

“There are 130 different genes identified with CMT but about half of people have CMT1A, which involves a duplication of the PMT22 gene,” she explains. The funding will also advance her investigations into studying whether therapeutic interventions are best targeted early, or later, in the progression of CMT. These are questions with important implications for the millions of people worldwide who suffer from this debilitating condition.

“This is an important population to help because at present there are no disease-modifying treatments for this disease,” Mukherjee-Clavin says. “We treat the symptoms, through the use of leg braces and tools to help with opening jars, for example, but these are imperfect strategies since being able to walk and use your hands is so important to functioning in this world.”

The funding that comes with her Next Generation CIM Scholar award “came at a very, very important time for my career development,” she says.

Next Generation CIM Scholars

Francis Coyne, M.D.,
Next Generation CIM Scholar, Hematology

Seun Falade-Nwulia, M.B.B.S., M.P.H.,
Susan & Steve Immelt/Douglas Carroll, M.D.,
Next Generation CIM Scholar,
Infectious Diseases

Ashraf Fawzy, M.D., Ph.D.,
Next Generation CIM Scholar,
Pulmonary & Critical Care

William Garneau, M.D., Ph.D.,
Next Generation CIM Scholar,
JHH Hospital Medicine

Max Konig, M.D.,
Jill & Mark Fishman Next Generation
CIM Scholar, Rheumatology

Bipasha Mukherjee-Clavin, M.D., Ph.D.,
Leslie A. Miller & Richard Worley
Next Generation CIM Scholar, Neurology

Michelle Ogunwole, M.D., Ph.D.,
Mark & Robin Rubenstein Next Generation CIM
Scholar, General Internal Medicine

Dipal Patel, M.D., Ph.D.,
Nancy Grasmick Next Generation
CIM Scholar, Nephrology

Eileen Scully, M.D., Ph.D.,
Sarah Miller Coulson Next Generation
CIM Scholar, Infectious Diseases

Justin Echouffo Tcheugui, M.D., Ph.D.,
Esther Pearlstone Next Generation
CIM Scholar, Endocrinolgy,
Diabetes & Metabolism

Mfon Umoh, M.D., Ph.D.,
Sarah Miller Coulson Next Generation CIM
Scholar, Geriatric Medicine & Gerontology

Looking across the broad variety of specialties touched by the Next Generation CIM Scholars funding, Nadia Hansel says she has renewed excitement for the future and the potential for truly game-changing advances in research, education and patient care.

“There is a very beautiful alignment between CIM and the Department of Medicine because our core values — that medicine is a public trust — are well entwined,” says Hansel. “By partnering together through the Next Generation CIM Scholars program we can double down on our shared mission. I’m very excited about the partnership!” ■

A New Hub for Healthy Aging Takes Off

In a large lab space known as the “motion capture room,” a Johns Hopkins Ph.D. engineering student is quite literally putting an older woman through her paces. Sixteen cameras are set up in pairs throughout the room, tracking the woman’s gait in real time as she walks across the room, and then moves through a series of exercises on a treadmill. The data collected is aimed at detecting factors — such as misaligned hips or hunched shoulders — that could impair the woman’s balance and put her at risk for a fall.

IT’S OFFICIAL!

The ribbon-cutting for the new Geriatrics Engineering @Johns Hopkins translational research hub took place on November 19, with many Johns Hopkins leaders — including Whiting School of Engineering Dean Ed Schlesinger and School of Medicine Dean/CEO Theodore DeWeese — in attendance.

Meanwhile, down the hallway, a Hopkins neurologist and an engineering professor lead a man in his 70s through a series of reading and writing exercises on a digitized notepad. An array of sensors tracks the movement of the man’s eyes, the cadence of his voice and the movement of his hand. The researchers will continue to assess the man’s reading and handwriting every few months. Their overarching goal: to detect neurodegenerative diseases like Parkinson’s or Alzheimer’s in their earliest — and most treatable — stages.

These two projects are just a few of many efforts that are unfolding — some now, others in the months and years to come — in a new hub for healthy aging research, which opened in July at the Johns Hopkins Bayview Medical Campus under the umbrella of the CIM-supported *Johns Hopkins Human Aging Project (HAP)*.

The 10,000-square-foot center, believed to be the first of its kind in the country, is bringing together faculty and students from engineering and medicine — as well as nursing, public health, and business — with older adults and their caregivers to test technology-driven solutions to some of the biggest challenges older adults face.

These include social isolation, mobility issues, and neurodegenerative decline, notes **Najim Dehak**, associate professor of electrical and computer engineering at the Whiting School of Engineering and co-director of the new hub. “Our aim,” he says, “is to leverage technology to extend the time that older adults can remain living safely and independently at home.” Dehak has even coined a term for this new area of translational research, which is reflected in the hub’s name: Geriatrics Engineering @Johns Hopkins.

The Human Aging Project: Focused on the Future

Launched in 2021 and based at Johns Hopkins Bayview Medical Campus, the CIM-supported Human Aging Project is assembling the very best minds at Johns Hopkins to slow aging’s impact and improve life for the nation’s rapidly aging population. Already, the HAP has attracted more than \$60 million in funding, and 13 faculty members are now supported in aging research as HAP Scholars. Eleven of those HAP Scholars have been funded through the Center for Innovative Medicine.

“The partnership between clinicians and engineers and other interdisciplinary scientists all coming together is transformative,” says geriatrician **Cynthia Boyd**, a *Lavinia Currier CIM Scholar* and director of the Division of Geriatric Medicine and Gerontology, who has stepped in to shepherd the Human Aging Project after the passing of the HAP’s founding director, **Jeremy Walston**, a *HAP Salisbury Family Scholar* (see “In Memoriam”).

“Our aim is to leverage technology to extend the time that older adults can remain living safely and independently at home.”

Najim Dehak

With its plentiful conference rooms, labs, and offices, as well as a model apartment that simulates a realistic living space of an older adult, the hub notably provides a new home for the Johns Hopkins Artificial Intelligence & Technology Collaboratory for Aging Research (AITC). Established in 2021 with \$20 million in funding from the National Institute on Aging, the AITC currently has 129 pilot projects up and running. Developed by research teams at Johns Hopkins and universities and tech incubators around the country, some AITC projects have spawned prototypes that are already in market testing.

The goal with AITC projects and other research efforts unfolding in the new facility is to move innovations as quickly as possible into affordable solutions that seniors of all income levels can easily use, says

CONTINUED ON PAGE 8

geriatrician **Peter Abadir**, who co-directs the new facility. He notes that faculty and graduate students from Johns Hopkins' Carey Business School are actively engaged on many projects to ensure that products can be marketed successfully and made widely available and affordable.

"We aren't just building gadgets. We're creating scalable solutions to meet older adults where they are — in their homes, or senior centers, or their doctor's office," says Abadir, *Salisbury Family Foundation CIM/HAP Scholar*. "We're bringing engineers from the Homewood campus together with clinicians in East Baltimore to work shoulder by shoulder, quite literally, to design and validate technology that will help older adults live independently for longer, and with dignity."

A focal point of Geriatrics Engineering @Johns Hopkins is the model apartment, which includes a living room, kitchen, bedroom, and bathroom. While planners were still in the process of furnishing the living space in early fall, they are intent on creating a look and feel that is both comfortable and familiar for older adults and their caregivers — clutter and all.

"So much technology currently on the market is developed by testing it on young people, then reverse-engineered for older adults, and it's developed in a sterile, studio-like setting," says Abadir. "Here we are starting with older adults and determining their needs to make sure the technology we develop is relevant to them, in the places where they live."

Dehak, a 2021 *Whiting School of Engineering/HAP Scholar*, concurs. "It's so important for older adults to be included in the design of any new 'smart home.' They need to be a part of the conversation." Toward that end, in the months ahead, both older adults and their caregivers will visit the model apartment to try out and provide feedback on the wearable trackers, robotic assistants and voice-activated systems that will be tested there.

"We aren't just building gadgets. We're creating scalable solutions to meet older adults where they are — in their homes, or senior centers, or their doctor's office."

Peter Abadir

Boyd notes that the Bayview campus is already the site of many well-established geriatrics-focused clinical programs and research centers, which will afford easy access to, and collaboration with, clinicians and their older patients and caregivers — thanks, in large part, to the ground-building work of Jeremy Walston.

"Jeremy took the lead in building a registry of older adults in the community who were interested in participating in studies aimed at healthy aging, many recruited through the Beacham Center for Geriatric Medicine," she says.

She continues, "There is a long history at Bayview of aging research and geriatric clinical care — of working to support older adults living in our community — that is deep and profound and goes back decades. This hub is an exciting next step in partnership with Johns Hopkins clinicians, engineers and community members that will allow us to continue to advance the science and enable older adults to age as healthfully as possible."

Ed Schlesinger, dean of the Whiting School of Engineering, has been an early and ongoing champion of the collaborative space. He says, "There is really no university today that is better equipped to lead in this area than Johns Hopkins. If anyone can do this, we can." ■

In Memoriam

Internationally recognized geriatrician **Jeremy Walston**, the Raymond and Anna Lublin Professor of Geriatric Medicine and Gerontology, died on June 10 at the age of 64.

A renowned expert in geriatric medicine, Walston made influential contributions to research, education and clinical care at Johns Hopkins Medicine and around the world. He developed the **Frailty Assessment Calculator**, a measurement system that has become the leading tool for hundreds of studies, and is increasingly being integrated into clinical practices to improve risk assessment and care planning for older adults.

As director of the *Johns Hopkins Human Aging Project (HAP)*, deputy director of the Division of Geriatric Medicine and Gerontology, principal investigator of the Johns Hopkins Older Americans Independence Center, and co-director of the **Biology of Healthy Aging** program, Walston performed translational research on the biological characteristics that promote resiliency and healthy aging.

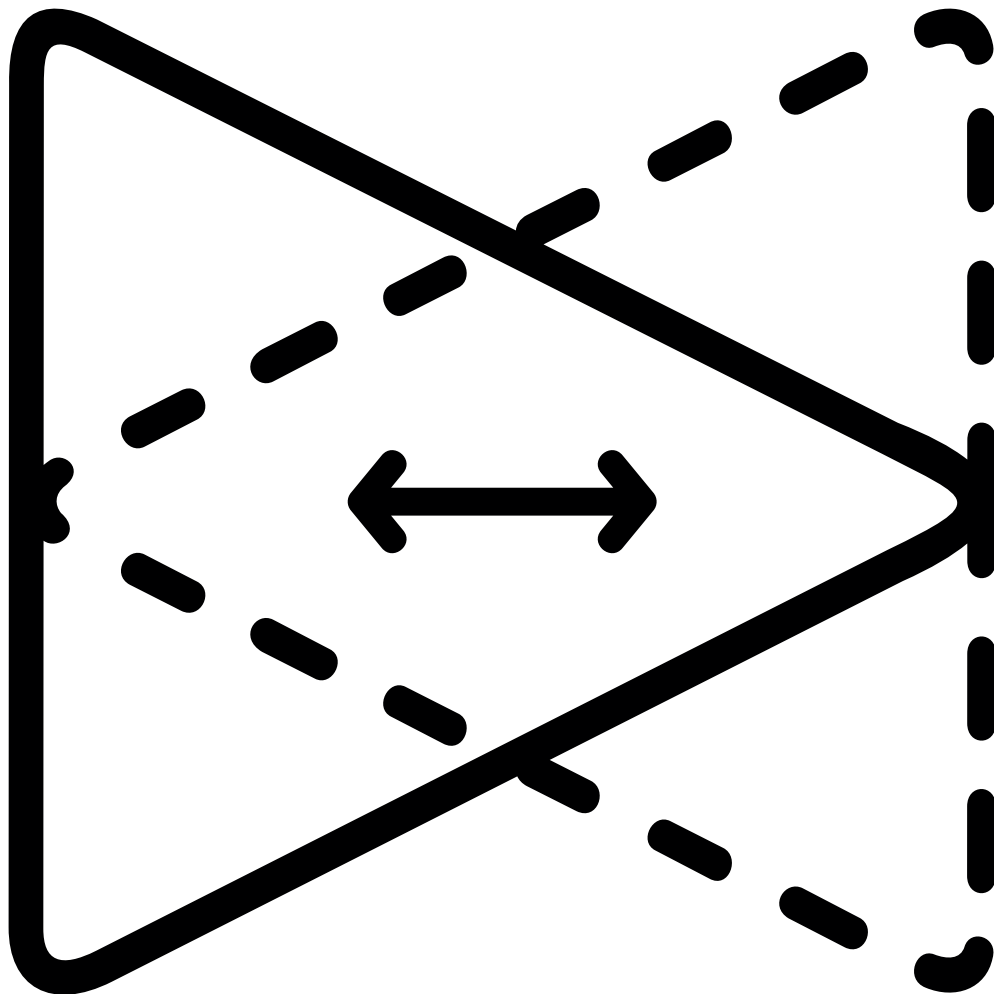
"The cohesiveness of the HAP speaks volumes not only to Jeremy's scientific excellence but also to his many admirable personal qualities," says CIM Director **David Hellmann**. "Because of his humility, generosity of spirit and impish sense of humor, Jeremy became a treasured friend to us and to so many others."

Walston, who earned his M.D. from the University of Cincinnati College of Medicine, completed a residency in general internal medicine and a fellowship in geriatric medicine and gerontology at Johns Hopkins Bayview Medical Center in 1993. He remained at Johns Hopkins for the rest of his career.

Walston's research — which includes nearly 300 publications and book chapters — built bridges between disciplines and had a profound influence on subspecialists and biologists outside the field of aging research. His mentorship helped launch the careers of numerous prominent geriatricians and gerontologists, earning him the 2025 Dean's Distinguished Mentoring Award.

— Marc Shapiro

Shifting the Paradigm in Mind-Body Illness



It's impossible to overstate the pain, frustration and despair that hundreds of patients faced before finding their way to CIM's *Amos Food, Body and Mind Center* at Johns Hopkins, says psychiatrist **Glenn Treisman**, center co-founder.

"These were patients with significant gastrointestinal problems, who also were dealing with a host of other issues like migraines, chronic fatigue, depression and even hypermobile joints," says Treisman. "Most had been very sick for years and had bounced from doctor to doctor, who couldn't find anything wrong and told them their problems were 'all in their head.'"

Fortunately, these patients finally found answers, and healing, when they made their way to the Amos Center, which was established in 2014 thanks to a generous gift from *Courtney and Paul S. Amos*. The center, which was co-created and co-led by Treisman and gastroenterologist **Pankaj "Jay" Pasricha** is considered to be the first clinic in the world that brought together gastrointestinal and psychiatric experts to treat patients in both physical and psychological distress.

The Amos Center truly shifted the paradigm by taking a multidisciplinary approach to diagnosis and treatment. Where before patients with these complex symptoms would have endured an endless stream of appointments with different specialists — cardiologists, rheumatologists, gastroenterologists, nutritionists, pain medicine doctors, psychiatrists — the experience was dramatically different at the Amos Center. There, patients would meet together with a team of Johns Hopkins experts from varied clinical areas.

"We would all sit in the room together, sometimes even arguing about what we thought the problem might be, right in front of the patient. Our disagreements were no secret," Treisman says. "Ultimately, over the course of an hour, we would come to consensus on the best path forward — and the patient would know why. Some would break down weeping, saying, 'This is the first time anyone has ever listened to me.'"

Ultimately, as a result of this unconventional approach, Pasricha and Treisman would identify an entirely new syndrome, which defined about 75% of the 600 or so patients they saw at the Amos Center. Known as JAG-A, it is thought to be rooted in an underlying autoimmune disorder and involves a combination of four conditions:

- **Joint** hypermobility or connective tissue disease, such as Ehlers-Danlos syndrome.
- **Autonomic** dysfunction, like postural orthostatic tachycardia syndrome (POTS), which causes an abnormal heart rate upon standing.
- **Gastrointestinal** dysmotility, including gastroparesis (stomach paralysis) or slow-transit constipation.
- **Autoimmunity** or a predisposition to autoimmune disease.

By describing the JAG-A syndrome and the criteria that define it, Pasricha and Treisman have opened new pathways for treatment — at the Amos Center and among specialists around the country, who previously had been mystified by the unusual constellation of symptoms.

Through papers and presentations on JAG-A, they've shed light on new culprits in some people with disabling GI disorders: autoimmune disorders and/

"Some patients would break down weeping, saying, 'This is the first time anyone has ever listened to me.'"

Glenn Treisman

or dysautonomia (problems affecting the autonomic nervous system, which controls involuntary bodily functions like heart rate, digestion and blood pressure).

"We now have objective tests that we can perform, which we didn't have 20 years ago, that can help make a JAG-A diagnosis," Treisman says. "These tests include whole gut transit imaging, where we can trace a piece of food that is eaten, such as a sandwich, and identify where there are delays in digestive function. In patients presenting with chronic pain, a skin biopsy can be used to identify small fiber neuropathy, 'a sign that the autoimmune system is attacking the nerves,' he says. Patients also undergo testing for abnormal immune function.

As a psychiatrist, Treisman has been able to bring a vital perspective to diagnosing and helping to treat patients with JAG-A and related disorders, who often have associated problems with their mental health.

"People have talked about the gut-brain connection for a long time, but usually in the context of people who are depressed or anxious and, as a result, have physical symptoms. But that's not the whole story," says Treisman. "We are emphasizing that this is bidirectional. Signals emanating in the gut can influence how the mind feels."

While Pasricha left Johns Hopkins in 2022 to become chair of medicine at Mayo Clinic, Scottsdale, Arizona, the impact that the Amos Food, Body and Mind Center had in its eight years of existence continues to be felt at Johns Hopkins and beyond.

"We have broken new ground, and as both of us and our colleagues continue to see new patients who come in with a devastating array of symptoms, we are now able to get a lot of people better — people who would never have gotten better before," Treisman says. "It's remarkable." ■

Transforming the Patient Experience

The affirming words on the wall are painted in bright colors and embellished with rainbows, sunbursts and stars: “Believe in Yourself!” “Smart, Strong, Fearless!” and “Anything is Possible.” Amid the inspiring exhortations hang two large bulletin boards, filled with polaroid snapshots of smiling young Johns Hopkins patients. All have scoliosis, or curvature of the spine. Some stand proudly, modeling their back braces. In one shot, a grinning girl poses in a field goal stance, as if about to kick her brace. The photo was taken after her final visit.

“We often see children and parents lingering over the photographs with smiles on their faces, and when we ask if they want their picture added to the board, the children are eager and excited,” says Kristen Venuti, a nurse practitioner who worked with physician assistants Karen Wille and Alison Dyszel to create and install the boards at three outpatient pediatric orthopedic locations.

The trio’s project is just one of two dozen made possible last year by the CIM’s *Center for Humanizing Medicine (CHM)* through its impact grant program. The idea behind the grants, totaling up to \$1,500 each, is that small ideas can have an outsized effect on patients’ lives, says **Martha Abshire Saylor**, the *Mary Ousley CIM Scholar* and the first CIM nurse scholar, who is leading the impact grant effort.

Based on survey feedback from recipients of the first round of CHM impact grants, many participants are finding ways to make their piloted efforts sustainable, says Abshire Saylor. Buoyed by that success, she and her team put out a call for proposals and funded a new round of promising proposals this fall.

“Once again, the project ideas we received from interdisciplinary teams across Johns Hopkins, all aimed at improving the patient experience in creative ways, were absolutely inspiring,” says Abshire Saylor, who is stewarding the effort together with **Scott Wright**, director of the *Miller Coulson Academy of Clinical Excellence* and holder of *The Anne Gaines and G. Thomas Miller Professorship*, and **Mary Catherine Beach**, co-leader of the *Center for Humanizing Medicine*. Both Wright and Beach are *Mary Gallo CIM Scholars*.

The dozen projects funded for 2025–2026 will touch patients and families from The Johns Hopkins Hospital in Baltimore, to Howard County General Hospital in Columbia, Maryland, to All Children’s Hospital in St. Petersburg, Florida.

They include an initiative with the apt acronym HUSSH (for Healing Using Soothing Sounds in the Hospital) that will bring white noise machines to the comprehensive transplant unit to give adult patients a more restful environment for recovery, as well as a monthly “caregiver café” that will offer monthly dinners for patients (and their families) undergoing long hospitalizations for cellular therapy. And in the neurocritical care unit, an initiative spearheaded by music therapist Kerry Devlin will create legacy keepsake kits for families whose loved ones die while in care.

The impact grants were inspired by the earlier success of CIM’s “pyramid grants” program, launched in 2011, which **Cynthia Rand** — the *Mary Gallo CIM Scholar* (2022) and an active member of the *Center for Humanizing Medicine* — oversaw at Bayview.

Abshire Saylor says that the outpouring of proposals that have come in from all corners of the Johns Hopkins Health System is evidence that staff and clinicians of all stripes — nurses, doctors, technicians, social workers, unit staff — are eager to embrace and further the work of CIM’s Center for Humanizing Medicine.

“The Center is focused on transforming the patient experience by promoting empathy, trust, and dignity, and ensuring each patient is known as a person rather than just a case,” she says. “These projects really are the cornerstone of that mission.” ■

“Once again, the project ideas we received from interdisciplinary teams across Johns Hopkins, all aimed at improving the patient experience in creative ways, were absolutely inspiring.”

Martha Abshire Saylor

Untangling the Origins of Alzheimer's Disease

By any measure, Alzheimer's disease is a neurodegenerative condition with a massive impact. Currently more than 7 million Americans over 65 are living with this progressive, memory-robbing illness, which brings steady decline and heartbreak for those living with the disease and the millions of family members and friends who care for them.

To get a better handle on how this outsized disease begins in the brain, Johns Hopkins pathologist **Meaghan O'Malley Morris** is looking small, very small — to a 2-millimeter-wide region buried deep in the brain stem known as the locus coeruleus (LC). Specifically, her team is zeroing in on the very earliest formation of abnormal Tau protein in the LC, and then tracing how those abnormal Tau proteins accumulate and spread to other regions in the brain. Tau protein is an important target, since it is known to clump and produce tangles that are implicated in Alzheimer's disease, notes Morris, who is the *Anne and C. Michael Armstrong CIM Human Aging Project (HAP) Scholar*.

"Thanks to funding I have received as a HAP Scholar, our lab has been able to take a step into more advanced protein studies, known as spatial proteomics, to look at which proteins in which cell

types are associated with the early formation and the spread of Tau," says Morris, who earned her M.D./Ph.D. from Johns Hopkins and also completed her residency and fellowship training here.

To get a better picture of how the disease "gets off the ground," Morris and her team are examining the post-mortem brain tissue of people ages 16–65, a period in the human age span before symptoms of Alzheimer's disease would typically appear.

In addition to studying the formation and spread of abnormal Tau protein and associated inflammatory cells in the LC, the researchers are also examining the presence of Amyloid beta protein — which is known to accumulate into clumps or plaques in people with Alzheimer's — to see how the two proteins interact.

"It's very important for us to figure out what is going on very early in the disease, because by the time people start showing symptoms of Alzheimer's, there is already a decent amount of Tau and Amyloid that has accumulated," says Morris.

Until recently, traditional proteomic techniques have not been fine-grained enough to offer a useful window into the ultra-tiny locus coeruleus, which is barely the size of a toothpick tip. But thanks to advances in spatial proteomics, which reveals which proteins are active where, Morris and her team can now get down to a 20-micron level, basically the size of a single cell, in their investigations.

They are finding the presence of abnormal Tau protein in nearly all of the brain tissue they examine, even those of younger people under 40.

What causes Tau cells in some people to leave the LC and travel from deep in the brain stem up into regions like the cortex, where they grow into tangles and wreak havoc? How might inflammatory cells surrounding Tau in the LC contribute to Tau's early formation and growth?

"It's very important for us to figure out what is going on very early in the disease, because by the time people start showing symptoms of Alzheimer's, there is already a decent amount of Tau and Amyloid that has accumulated."

Meaghan O'Malley Morris

These are among the big questions that Morris and her team are working to shed light on as they tap into the latest advances in proteomics, data science and biostatistics. The answers they find could hold tantalizing clues for stopping Alzheimer's disease early in its tracks, before it is able to take hold and cause destruction in our brains.

"The funding I have received as the *Anne & C. Michael Armstrong CIM HAP Scholar* has been crucial to advancing our work," says Morris. "We are so excited about what lies ahead." ■



Catalysts for Change

Whether it’s the candid experiences shared by a survivor of sarcoidosis, the insights of a Nobel Prize winner in medicine, or the ethical framework that guides a Johns Hopkins transplant oncologist, one key theme has come through in all of this fall’s *CIM Seminars*: the importance of medicine as a public trust.

“At CIM and across the Department of Medicine at Johns Hopkins, this concept must be a north star for all of us,” says pulmonologist **Michelle Sharp**, a *Mary and David Gallo CIM Scholar* and *Elena and Everardo Goyanes CIM Scholar*, who is the organizer of the 2025–2026 CIM Seminars. “My goal in the speakers we’ve selected is to explore how we can learn from medicine’s history and really look to the change that’s coming in health care to ensure that medicine remains a public trust.”

This principle, as articulated by public health expert Steven Schroeder in his seminal 1989 paper, is both timeless and incredibly timely, given the current landscape in medicine. Crucially, it calls for shared responsibility: “Medicine is entrusted by society to improve the health of the public through education, patient care and research. In return, medicine receives significant public funding, respect and autonomy.”

Toward that end, Sharp has been intentional in bringing a wide variety of voices and perspectives to this year’s CIM Seminars, which unfold about twice a month over Zoom for an avid audience of patients, CIM donors, and current and former Johns Hopkins faculty members, sometimes totaling as many as 100 or 200 people.

While a number of speakers are esteemed leaders in medicine (such as the 2019 Medicine Nobel Prize-winner and former Johns Hopkins Osler Medical resident **William G. Kaelin Jr.**, who spoke

about the power of curiosity-driven research, or Hopkins’ **William B. Greenough**, who pioneered oral rehydration therapy to treat cholera) other speakers this fall are public figures who have made a name in TV, the movies, and music.

For example, **Ted Koppel**, renowned TV anchor and winner of 52 Emmys, discussed what we can learn from broadcast journalists about building public trust in accurate communication, and celebrated actor **Alan Alda**, now 89, will talk about the importance of empathy in fostering human connection. For that seminar in January, Sharp will travel to Manhattan with physician **Karl VanDevender** to conduct a live interview with Alda, who hosted PBS’s *Scientific American Frontiers* documentary TV series for 12 years. Alda continues to host the popular podcast Clear + Vivid, which focuses on the art of connecting and communicating.

Sharp notes that skills such as empathy and strong communication are absolutely critical to providing humanistic health care, “which is central to the mission of why so many of us went into medicine in the first place.” She underscored the importance of the patient experience herself with the very first seminar of the year, on September 16. In that presentation, Sharp hosted **Tishia Humes**, a patient in the sarcoidosis clinic at Johns Hopkins, which Sharp leads. “Our patients need to be at the center of everything we do, so it was very important to me that we start off with a patient’s perspective,” she says.

Because sarcoidosis is an inflammatory disease that can affect almost any organ, and there is currently no known cure, living with the devastating condition is particularly challenging, as Humes shared for the CIM audience.

Given the value such insights hold for those working in the medical community, Sharp is looking to grow the audience for the CIM Seminars, to include medical students and trainees, in the months ahead.

“Right now, many would agree that our medical system is facing many significant challenges,” she says. “As a generation of clinicians and scientists, we need to be thinking innovatively about how everyone can have access to the public trust that medicine should be. I am hoping the CIM Seminars can be a catalyst for the field.” ■

FRIENDS OF THE JOHNS HOPKINS CENTER FOR INNOVATIVE MEDICINE

Anonymous
Dr. Stephen C. Achuff
American Legacy Foundation
Mrs. Georgine M. & Mr. Reyaz Ahmad
Ms. Jean Amos
The Arkwright Foundation
Atran Foundation
Mr. & Mrs. Charles R. Ballard Jr.
Dr. Rosaline Zam & Dr. Alan M. Barron
Mr. Gary Bartel
Dr. Theodore M. Bayless *
Mrs. Grace Bender
Dr. Richard Bennett
Mrs. Karen & Mr. David Bentz
Mr. Bruce C. Berger
Mr. David J. Beveridge
Drs. Joel & Risa Bordman
Dr. William Brody, W.R. Brody
Revocable Trust
Brutus Constructors, Inc.
Drs. John & Lynda Burton
Mr. Donald C. Carter
Mrs. Ann K. Clapp
Mr. Roger M. Cline
Dr. Christopher Connors *
Mrs. Eleanor Connors *
Mr. & Mrs. George Coumantaros
Mr. James Crystal
Mr. & Mrs. Neil Dahlmann
Dr. Alan & Ms. Hedy Daniel
Mr. & Mrs. Michael J. Davies
Mrs. Rosalee C. Davison
Ms. Mary Nell Donald *
The Dorney-Koppel Foundation
Mr. George C. Doub * &
Ms. Mary Tyler Doub
Dr. Thomas P. Duffy *
Mr.* & Mrs. Juan Eljuri
Mr. Juan Pablo Eljuri
Mr. & Mrs. Kyriakos Filippou
Mr. & Mrs. Brian Finn
The family of Mr. & Mrs. Leonard S. Fiori Sr.
Mr. Michael Fiori
Mr. & Mrs. David B. Ford Jr.
Mrs. Sheila & Mr. Michael Frederick,
Lawruk Machine and Tool Company
Mr. & Mrs. Bernard Garil,
Elmwood Country Club
The Deane A. & John D. Gilliam Foundation
Mrs. Claiborne W. Gooch III
Mrs. Clare* & Mr. Keith Goodman
Mr. Peter B. Goodrich
Mr. & Mrs. William O. Goodwin
Mr. & Mrs. Steven T. Gorski
Mrs. Laura Gottesman

Mr. Everardo & Mrs. Esther Goyanes
Mr. David * & Mrs. Stuart S. Graham *
Mr. David B. Graham Jr.
Jerome L. Greene Foundation Inc.
Dr. William B. Greenough III
Mr. Eric Gronningsater
Mr. Richard Grossi
Dr. W. Daniel Hale
Dr. & Mrs. Barry Halpern
Dr. Ingeborg Hanbauer-Costa
Mr. & Mrs. James Hanne
Dr. Sidney Harman *,
Harman International Industries
Healthnetwork Foundation
Dr. & Mrs. David B. Hellmann
Ms. Virginia Henderson *
Mr. Frank Hicks and Mrs. Karen Hicks
Mrs. Jeannette M. Hobbins
Mr. Wallace F. Holladay Jr.
Mr. B. Judson Honaker *
Ms. Lenora Irwin
Mr. & Mrs. Robert J. Katz
Mrs. Marjorie & Dr. David Kaufman
Ms. Marilyn Kocher
Dr. Steven J. Kravet
Mr. Christos D. Lambrakis *
Ms. Carol M. Lascaris
Mr. Douglas Lee* and
Mrs. Barbara Levinson-Lee
Drs. Se-Jin Lee & Emily Germain-Lee
Mrs. Harriet & Mr. Jeffery Legum
Lema Corporation
Mr. & Mrs. Adam M. Lewis
Dr. David M. Levine
Mrs. Fotini Livanos
Dr. Diana Chua Liu, J.D.
Mrs. Beata Lock & Dr. Ted Loch-Temzelides
Mr. Harold R. Logan Jr.
Dr. Kenneth M. Ludmerer
Dr. Joseph Malina & Mrs. Therese Malina
Ms. Ann L. Marsh
Dr. Robert S. Marvin
Mr. John Mitchell McKay
Mr. Harvey M. Meyerhoff *
Mr. Edward O. Minniear
Mr. & Mrs. George Miron
Dr. & Mrs. Mack C. Mitchell Jr.
Mrs. Betty & Mr. Walter S. Montgomery Jr.
Mr. Melvin C. Muntzing
Mr. Delbert Ousley
Ms. JoAnn M. Orlinsky
Mr. Thomas L. Owsley
Mr. Richard Paisner & Ms. Christine Weiner
Ms. Sallye S. Pence
Ms. Christinia Z. Poe

Mr. John C. Portman Jr.
Ms. Mary J. Portman
Ms. Betty S.* & Mr. Ralph Prettyman
Mr. Max S. Pudelkewicz & Family
Roche Family Foundation
Mrs. Marjorie S. & Mr. Peter K. Roosevelt
Mr. Henry A. Rosenberg Jr.
Mr. Robert R. Rosenheim
Mr. Richard Rosenthal
Mr. & Mrs. George M. Ross
Mr. Robert Rowling
Mr. Norman Rukert
James and Mary Frances Schneider
Mr. George R. Scholl
Dr. Gary P. Schoppert
Mrs. Joan Schoppert
Mr. Stephen Scott & Mrs. Betsy Scott
Mr. Thomas Selck *
Mrs. Barbara Shapiro &
Mr. M. Sigmund Shapiro
Mr. Clint & Ms. Melissa Shifflett
Mr. Alan A. Shuch
Dr. Charles E. Silberstein
Mr. Larry Silver & Mrs. Deborah Silver
Mr. Neil W. Silverstein
Dr. Phillip R. Slavney
Mrs. Stephanie S. Smith &
Mr. Robert D. Smith
Mr. Michael Sniffen
Ms. Ashlyn W. Sowell
Mr. & Mrs. Stelios Spiliadis
Dr. John D. Stobo & Mrs. Mary Ann Stobo
Mr.* & Mrs. Richard L. Storch
Mr. Ram Sundaram
Ms. Nina Tao
Mr. David Tepper
Mr. & Mrs. James R. Thompson
Mr. & Mrs. Richard D. Thurman
Mr. Alfred Tyler II
Mr. Dimitris H. Varvatsoulis
Mrs. Sue & Mr. David Viniar
Mrs. Sarah & Mr. Eric von Hoven
Mr. Charles W. Wagner
Dr. Wilma “Willi” Walker-Thompson
Ms. Diana Walters
Dr. Myron L. Weisfeldt
Mrs. Meredith & Mr. Peter Wellington
The Willenborg Family
Mr. & Mrs. A. Morris Williams
Mr. Donald D. & Mrs. Patty Wolf
Mrs. Jacquelyn & Mr. Gregory Zehner
Dr. & Mrs. Jonathan Zenilman
Zimmerman Family Charitable Giving Fund

* Deceased

Medicine is a public trust

THE JOHNS HOPKINS CENTER FOR INNOVATIVE MEDICINE

5200 Eastern Avenue
Mason F. Lord Building
Center Tower, Room 353
Baltimore, MD 21224
410-550-0516

 HOPKINSCIM.ORG
 FOLLOW US @HOPKINS_CIM

BREAKTHROUGH is published by The Johns Hopkins
Medical Institutions, Baltimore, MD 21287-2101.
If you do not wish to receive this newsletter, please
write to us at the address above.
Director: David Hellmann, M.D.
Writer/Editor: Sue DePasquale
Writers: Marc Shapiro, Vanessa Wasta
Design: Skelton Sprouls

BENEFACTORS

OF THE JOHNS HOPKINS CENTER FOR INNOVATIVE MEDICINE

Members of the International Advisory Board and
donors who have established CIM scholarships
and CIM endowed professorships

Mr. & Mrs.* George Aidinis *
Mr. Aristidis Alafouzos *
Mr. Yiannis Alafouzos
Ms. Monica Goes de A.
Mendes De Almeida °
Mr. Daniel P. Amos,
Daniel P. Amos Family Foundation
Mrs. Courtney Amos °
Mr. Paul Amos °
Anonymous
Mr. & Mrs. C. Michael Armstrong
The Armstrong Foundation
Mrs. Caryl ° & Mr. George Bernstein *
Mrs. Joan Carl & Mr. Bernard Carl
Ms. Dana L. Case °
Clearshot Holdings
Mr.* & Mrs. Hugh C. Cosner
Mr. Frank L. Coulson * & Mrs. Sarah Miller
Coulson °, Frank L. & Sarah Miller
Coulson Foundation
Ms. Lavinia Currier
Mr. and Mrs. Eugene Fife
Mrs. Jill Fishman & Mr. Mark Fishman
Mr. Seth E. Frank, Georges Lurcy
Charitable & Educational Trust
Mrs. Mary Gallo
Mrs. Suzanne ° & Mr. William Gooch
Mrs. Elena & Mr. Everardo Goyanes *
Dr. Nancy Grasmick

Mrs. Stephanie Greenberg ° &
Mr. Erwin Greenberg
Mr. Edward Hanmer °
Mrs. Wilhelmina C. Holladay *
& Mr. Wallace F. Holladay Sr. *
Dr. Susan C.° & Mr. Steve J. Immelt
Mrs. Leslie & Mr. Scott Jacobs °
Mrs. Karen Leder & Mr. Ethan Leder
Dr. Stanley M. Levenson ° *
Mr. & Mrs. David L. Lowe
Mrs. Anne G. Miller &
Mr. G. Thomas Miller *
Mrs. Leslie A. Miller &
Mr. Richard B. Worley,
Miller-Worley Foundation
Mr. & Mrs. Fred Mirmiran *,
The Mirmiran Foundation
Dr. Hamilton Moses °
Mrs. Julie ° & Mr. C. Patrick Oles Jr. °
Ms. Mary K. Ousley, RN °
Ms. Jenny Pao & Mr. Bo Shao °
Mrs. Tara Sakraida Parker ° &
Mr. Richard G. Parker
Ms. Esther S. Pearlstone °,
The Pearlstone Fund Inc.
Mrs. Aliki D. Perroti °
Mr. George A. Roche
Roche Family Foundation

Mr. Stephen Rosenthal &
Mrs. Sandy Rosenthal
Mrs. Robin & Mr. Mark E. Rubenstein °
Mrs. Edith &
Mr. Charles H. Salisbury Jr. *
Mrs. Claudia Serwer ° &
Mr. Michael Skol
Sonosite Incorporated
Mrs. Mary ° & Mr. Louis Trotter
° Johns Hopkins Center for Innovative
Medicine International Advisory
Board Member
* Deceased

HOW TO GIVE

ONLINE



E-MAIL
DOMdevelopment@jhmi.edu

PHONE
410-550-3417

MAIL
Johns Hopkins University
and Medicine
ATTN Department of Medicine
Center for Innovative Medicine
PO Box 49143
Baltimore, MD 21297