Johns Hopkins University and Medicine have renamed the Johns Hopkins Outpatient Center in honor of Dr. Levi Watkins Jr., Hopkins’ first Black chief resident and full professor. Watkins performed the world’s first implantation of an automatic heart defibrillator in 1980 and worked to make Johns Hopkins more inclusive and connected to the community it serves, making him an ideal namesake for the center.

People with diabetes who experience periods of low blood sugar — a common occurrence in those new to blood sugar management — are more likely to have worsening diabetic eye disease. Now, researchers at Johns Hopkins Medicine have shown that these periodic low glucose levels are linked with a molecular pathway that is turned on in oxygen-starved cells in the eye and can cause an increase in certain retinal cell proteins, resulting in an overgrowth of blood vessels and worsening diabetic eye disease.

A new Billie Holiday collection, recently acquired by the Sheridan Libraries, is revealing details of her life in Baltimore. The collection includes the earliest known photo of Billie Holiday — a posed studio shot taken in 1917 when she was 2 years old — ephemera such as programs from clubs, hand-written set lists, a grocery shopping list, and 140 taped interviews with not only musicians and jazz scholars but also Holiday’s childhood friends and neighbors from Baltimore.

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
“Can you hear me now?”

New research indicates there may be more to age-related hearing loss than the ear

By Patrick Kanold, PhD

Age-related hearing loss is one of the most common conditions affecting adults as we grow older. In fact, most people will experience some kind of hearing loss after age 65, like the inability to pick out individual conversations in a restaurant. Age-related hearing loss has long been linked to hair cells in the inner ear that become damaged over time, but we are now learning that the brain has more to do with the condition than we originally thought. This opens up the exciting possibility that we may be able to treat age-related hearing loss simply by re-training the brain.

We tested the ability of older and younger mice to detect a tone with and without ambient noise in the background. Both groups performed the same in the absence of ambient noise, but in the presence of ambient noise the older mice were worse at detecting the tone than the younger mice. Also, the younger mice detected the tone at its onset or end. Older mice detected the tone when it started playing, but also indicated that they thought a tone was present when there wasn’t one.

During the tests we recorded the activity of neurons in the auditory cortex brain region of the mice. We found that in the younger mice some neuron activity increased when the mice heard the tone and other neurons became repressed, or turned off. In most of the older mice, however, the balance tipped to having mostly active neurons, and the neurons that were supposed to turn off when the tone was played in the presence of a noisy background failed to do so. In addition, just before the tone cue, there was up to twice as much neuron activity in older mice than younger mice, especially among males, before the start of the tone. This caused the older mice to think the tone was present when it wasn’t.

The younger mice could suppress the effects of ambient noise on neural activity while older mice could not. In older animals, ambient noise seems to make neuron activity more “fuzzy,” disrupting the ability to distinguish individual sounds. On the upside, because of the mammalian brain’s flexible learning potential, it may be possible to teach the brain to address the fuzziness in older animals, including humans, by training the brain to focus on individual sound amid a cacophony of noise. If successful, this method may provide significant benefit to those suffering from age-related hearing loss.

Dr. Kanold is a neuroscientist and engineer studying the auditory cortex at the Kavli Neuroscience Discovery Institute, which unites the scientific enterprise at Johns Hopkins University to study the brain and establish the global standard for integrative neuroscience research.
Paul Ragonese has a strong connection to Johns Hopkins: He’s a 1967 graduate of the engineering program at the Johns Hopkins evening college, and he’s been a patient at the Wilmer Eye Institute since the 1980s. When he and his wife Anne decided to include a gift to Johns Hopkins University and Medicine in their wills, they knew they wanted to support the Whiting School of Engineering and Wilmer, two areas that have had a profound impact on Ragonese’s career and his quality of life respectively.

When reflecting on what inspired him to support Johns Hopkins, Ragonese stresses that he and Anne, who was a nurse at Union Memorial Hospital in Baltimore for 32 years, have been fortunate in many ways and their gift gives them a chance to help others. “We felt we could do something that would be a benefit to people,” he says.

The Ragoneses are now part of a group of more than 1,900 donors who are members of the Johns Hopkins Legacy Society, which celebrates those who contribute an estate or life income gift that supports the future of Johns Hopkins.

“The Whiting School continues to be shaped by the vision, generosity, and trust of others like the Ragoneses,” says Whiting School Dean Ed Schlesinger. “Their gifts towards research and support for the school ensure that our students and faculty can be given the right tools to become leaders in their fields and engineer solutions for unseen futures.”

As a Hopkins student in the 1960s, Ragonese says he was impressed with the exceptional education in his engineering program, which laid the groundwork for a fruitful career to follow. After graduation, he worked as a public health engineer with the Maryland Department of Public Health and as an environmental engineer with a startup company focused on water pollution control. From 1983 to 1998, he was also a mechanical engineer with the U.S. Coast Guard.

Years later, the Ragoneses came back to Hopkins to take a tour of the Whiting School. Paul Ragonese was especially impressed with the research that focused on nanobiotechnology.

At Whiting, faculty, students, and research centers such as the Institute for NanoBioTechnology work to create new technologies at the interface of nanoscience, engineering, and medicine.

Through the development of diagnostic tools and treatments on the atomic or molecular level, Whiting researchers are exploring new cancer therapies, methods of regenerating tissues, and early disease detection. Getting a firsthand look at some of these innovations also motivated the Ragoneses to support the school.

Ragonese’s connection with the Wilmer Eye Institute has also been longstanding. More than 35 years ago, he came to Wilmer seeking treatment for glaucoma, a leading cause of adult blindness that runs in his family. Decades later, he continues to see a team of ophthalmologists at Wilmer, with Henry Jampel, MD, his longtime provider, coordinating his care.

Glaucoma is a group of eye diseases that cause high pressure in the eyes, which can damage the optic nerve and lead to impaired vision and blindness. As part of his treatment, Ragonese used eye drops and later had an outpatient laser procedure, both of which lowered his eye pressure for some time.

Then Ragonese had a trabeculectomy in each eye about nine years ago. With this procedure, a new passageway is created in the eye for fluid to
drain to relieve the eye pressure and prevent further vision loss. Both were successful.

As Ragonese’s provider for three decades, Jampel says his role is akin to a quarterback who keeps track of all the moving parts involved with his patient’s multiple diagnoses. This includes his treatment for a wrinkled retina and cataracts, which is provided by two other ophthalmologists at Wilmer: Adam Scott Wenick, MD, and Esen Karamursel Akpek, MD.

The Ragoneses are now part of a group of more than 1,900 donors who are members of the Johns Hopkins Legacy Society.

“It would be very difficult for one patient to keep track of all of these details,” says Jampel, Odd Fellows Professor of Ophthalmology at Wilmer and a member of the Glaucoma Center of Excellence since 1988. “So, I look out for his care and make sure that nothing is done in a vacuum. It’s all done with consideration for the whole patient.”

Today, Ragonese meets the criteria for being legally blind, but he says his vision is better than the term would suggest. He continues to visit Wilmer several times a year.

Ragonese says that being able to access many specialties in one place is what first drew him to Wilmer, and why he and Anne have decided to support the institute. “At Wilmer, I feel I’m being attended to by very competent people,” he says. “They are very patient in telling me what the problems are, and they’re willing to discuss them with me. I feel like I am in good hands.”

The gratitude goes both ways. “The Ragoneses have endowed professorships and research funds, expanded resources for clinical care, and provided opportunities to educate the next generation of leaders in ophthalmic medicine,” says Wilmer Director Peter J. McDonnell, MD.

“They also inspire us because these gifts demonstrate the faith our supporters have that investing in the future of Wilmer is worth doing.”
The Lasting Impact of the DART Mission

STORY BY APL COMMUNICATIONS

Astronomers estimate there are tens of thousands of near-Earth asteroids approximately 500 feet wide and larger, big enough to cause regional or global devastation if one of them were to actually hit the Earth. In 2016, NASA established the Planetary Defense Coordination Office (PDCO) to provide early detection of such potentially hazardous objects and coordinate U.S. government planning to mitigate any potential impact threat.

The Double Asteroid Redirection Test (DART) is part of NASA’s larger planetary defense strategy. The DART mission addresses the “mitigate” component of overall planetary defense efforts by demonstrating a potential technology for deflecting an asteroid off a predicted impact course with Earth, if such action were warranted. DART is NASA’s first spacecraft developed to achieve planetary defense objectives and was designed, built, and operated by the Johns Hopkins Applied Physics Laboratory (APL) in Laurel, Maryland, for the PDCO.

In September 2022 the DART mission successfully employed the kinetic impactor technique — which in simplest terms means smashing a thing into another thing, such as a spacecraft into an asteroid — to alter the trajectory of the asteroid Dimorphos.
By crashing an autonomous spacecraft into the asteroid, the DART mission altered Dimorphos’ orbit around its parent asteroid, Didymos, by approximately 33 minutes without an advanced reconnaissance mission. In doing so, the DART mission validated the effectiveness of kinetic impact for preventing future asteroid strikes on the Earth.

In addition, DART’s impact made Dimorphos an “active asteroid” — a space rock that orbits like an asteroid but has a tail of material like a comet. Although scientists had proposed that some active asteroids are the result of impact events, until now, no one had ever observed the activation of an asteroid. The DART mission activated Dimorphos under precisely known and carefully observed impact conditions, enabling the detailed study of the formation of an active asteroid for the first time.

In recognition of its successful completion of the world’s first planetary defense test mission, the DART mission earned the National Space Club and Foundation’s Nelson P. Jackson Aerospace Award, which honors the previous year’s most outstanding contribution to the missile, aircraft, or space field and was named Popular Science magazine’s “Best of What’s New” award winner in the aerospace category. The DART mission project manager, APL’s Ed Reynolds, has also been named to the 2023 TIME 100 list of most influential people in recognition of his contribution to the mission’s success.

Planetary defense is an international concern; that’s why the DART team is drawing on expertise from around the world to evaluate the mission’s results and enable planning for future planetary defense efforts. “DART was a spacecraft designed to prove humanity has technology capable of purposefully moving a celestial object’s path in space,” said Lindley Johnson, NASA’s Planetary Defense Officer. “Planetary Defense is an endeavor of unity.”

Scientists will continue to use telescopic observations of the Didymos system as well as data from the DART mission to build more accurate models and better prepare us to successfully defend the planet should a future asteroid impact threat ever be discovered.
A Love Story for the History Books

How one couple’s passion for rare books and devotion to each other inspired a widow’s gifts to Johns Hopkins

STORY BY ANNE B. DOYLE • PHOTOGRAPHS BY LISA HELFERT

The year was 1960, and Ingrid Rose (née Roessner) was running late for her French Civilization class at the Alliance Française in Paris, France. She darted into the classroom and took the only available seat next to a man who, upon noticing an American magazine sticking out of her coat pocket, addressed her in English. The man was Milton Rose, then stationed with the U.S. Army in Fontainebleau, outside of Paris. The conversation he began with Ingrid would last a lifetime.

Ingrid, please tell us a little bit about Milton and your life together.
Milton grew up in Romania, but was fluent in English through his American father. He often borrowed and exchanged books from the American and British Embassy libraries. This drew suspicion from the post-War Communist authorities and Milton was arrested in 1946 while taking soup to his dying father. He was put in a labor camp working on the Danube-Black Sea Canal. Milton claimed to know how to weld in order to receive food rations, so he worked as a welder on the Canal. After his tour in France, Milton attended the Defense Language Institute in Monterey, California, and continued his military service in Frankfurt/Main, Munich, and then Baltimore where he was discharged in 1967. By that time, Milton and I were married and we decided to move from Baltimore to Washington, D.C., where he worked for the departments of the Interior and Commerce, while I became an employee at the European Community Information Service. During the Cold War Milton worked with the Department of State in Poland and Romania where I trained as a paper conservator in Warsaw and engaged in microscopic research of paper fibers and pigments.

Why did you decide to leave Milton’s and your book, art, and conservation collection to the Sheridan Libraries at Johns Hopkins?
It’s important to me that our collection is well taken care of. The Sheridan Libraries have an amazing group of conservators and professors who understand the history and significance of books, prints, and art.
Ingrid Rose is donating much of Milton’s and her collection to the Sheridan Libraries at Johns Hopkins through her estate.

**When did your interest in rare books and art begin?**
Once settled in D.C., we got involved in print collecting with the Washington Print Club, and our interest in works on paper really took off. When we discovered that original prints and illustrations were being removed from books and sold separately, we made it our mission to buy and preserve as many as we could. During that period of collecting and associating with printmakers, I compiled the catalogues raisonnés of printmakers Werner Drewes and Prentiss Taylor.

**What prompted your legacy gift to the Sidney Kimmel Comprehensive Cancer Center?**
In late 2000 Milton was diagnosed with leukemia which went into brief remission, only to reappear in early 2001. By 2007, we were told that there was no longer any hope of his getting well again. Aware of clinical trials at Johns Hopkins, we asked to participate in one, and that is how we met Dr. Judith Karp, then at Kimmel. With her team she took Milton under her wing and, against the odds, resurrected his health, improving the last six months of his life during which he regained some strength and his “joie de vivre.” I am forever grateful to the Kimmel Cancer Center and Dr. Karp for giving us those last six months.

“I became aware of the high ethos at Johns Hopkins Medicine and am most grateful to its practitioners.”
– Ingrid Rose –

**And finally, why did you want to support the Wilmer Eye Institute?**
When I was diagnosed with age-related macular degeneration, it became necessary to seek a second opinion. I was referred to Dr. Adam Wenick, who was very honest, which prompted me to include Wilmer in my will. Dr. Wenick continues to monitor and treat my eyes. Through these medical challenges, I became aware of the high ethos at Johns Hopkins Medicine and am most grateful to its practitioners. It gives me real pleasure to close the circle of our 1966 beginning in Baltimore and my working as a research assistant for a children’s health study at Johns Hopkins by including Kimmel and Wilmer in my will in memory of Milton. Thank you, Johns Hopkins Medicine!
Their Legacy Told

DR. ROBERT WELCH is remembered not only as a caring physician, but also as a mentor to residents at the Wilmer Eye Institute. He graduated from the Johns Hopkins School of Medicine in 1953 and co-directed the Wilmer Retina Service from 1959 to 1985. He met his wife, ELIZABETH “BETTY” WELCH, who pre-deceased him, in 1950 when they were both racing sailboats in Annapolis. During their 62 years together, Betty managed the office for Robert’s private ophthalmology practice and supported his work at Wilmer. They shared an interest in history, a love for travel and adventure, but most of all they shared a dedication to the Wilmer Eye Institute and its residents. They established the Robert Bond Welch, M.D. Professorship in Ophthalmology in 2006 through generous gifts from their estate, which will ensure their continued legacy of support to Wilmer.

DR. JAMES A. ROSEBORO was taught from an early age that the power of education could be used to achieve success and be an uplifting force for himself and those around him. He earned his bachelor’s from Johnson C. Smith University, master’s from Johns Hopkins University in Radiological Science, and his PhD from UCLA in Medical Physics. Dr. Roseboro often said that his professors at Johns Hopkins University were instrumental in developing the skills which led him to his career as a scientist and educator. Because Dr. Roseboro attributed his successes to his education, he was inspired to support Johns Hopkins University in his estate plans. His gift ensures that his legacy of being a scientist, educator, and philanthropist will live on and encourage the next generation to follow in his footsteps.

ROBERT “TOM” YOHO was known as a larger-than-life character with a passion for racing sailboats. He is greatly missed by his friends in the sailing community. Mr. Yoho grew up surfing on the California coast and later moved to Hawaii where he spent time working in commercial fishing. When his aunt fell ill, he moved to Delaware to care for her. After her passing, his love of sailing brought him to Maryland where he participated in yacht races and gained a reputation for his skill with the ships’ rigging. After being diagnosed with bladder cancer, he was treated at the Johns Hopkins Brady Urological Institute and was very impressed with the care he received from Dr. Max Kates. His treatment gave him a new lease on life and a second chance to do what he loved, which inspired him to support Dr. Kates’ work at Brady through gifts from his estate.

Gifts from Dr. Robert Welch and Elizabeth “Betty” Welch support the Robert Bond Welch, M.D. Professorship in Ophthalmology.

Gifts from Robert “Tom” Yoho support the work of Dr. Max Kates in treating bladder cancer at the Brady Urological Institute.

A gift from Dr. James A. Roseboro ensures that students interested in studying radiological sciences have access to the same world-class education that he did.
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