



MORGRIDGE
INSTITUTE FOR RESEARCH

SPRING 2026

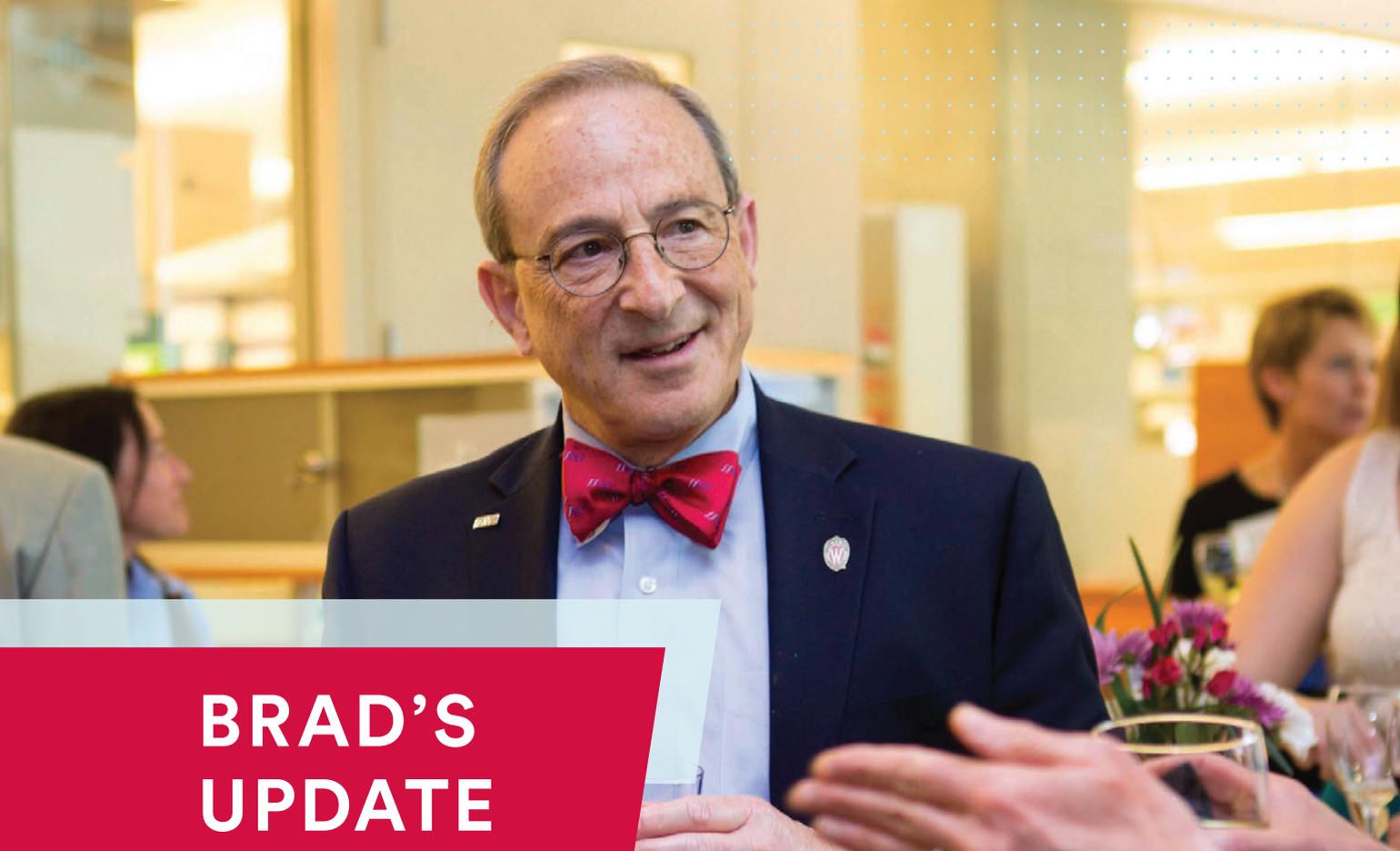


YOU MAKE A DIFFERENCE

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A special report for
supporters of the
Morgridge Institute
for Research



BRAD'S UPDATE

An idealistic community of donors powers our curiosity-driven approach to science. What grows from your idealism and generosity are discoveries that advance human health and change lives.

Our community is broad and diverse. What unites you is a shared desire to expand the reach of research and spark scientific curiosity in the public. Some of you make high-profile gifts. Others find room in your budgets to write checks that help sustain our work. Every contribution matters.

When you believe in our mission, your gifts create a powerful foundation that lets us do new things. This is especially important today. Traditional grant funding often comes with strict limits that can slow down lab research and hold back the kind of creative thinking that defines Morgridge science. Your support frees our scientists to follow new paths and push the frontiers of biomedical science.

In 2025, two of our principal investigators received endowed chairs through donor generosity. Ken Poss, Morgridge's director of regenerative biology, was named the James W. Neupert Investigator in Regenerative Biology. Morgridge Investigator Jing Fan received the Arthur C. Nielsen Chair in Metabolism. These chairs will support their work for many years to come.



THANK YOU

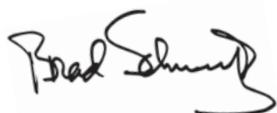
Your vision and support attract talented researchers who power the *Fearless Science* that helps improve human health.



Across Morgridge, your support funds research initiatives, educational programs, and community engagement opportunities that hold personal meaning for you. We are grateful for every form of support you offer.

Our scientists are inspired by your vision and generosity. We take seriously our responsibility to deliver real benefit in return. That means pursuing discovery through rigorous methods and careful interpretation of our findings. Your gifts help us uphold the ideals of science and strengthen public trust in it.

Thank you for being part of this community. Your continued support of the Morgridge Institute for Research will drive the progress of science and society well into the future.



Brad Schwartz, M.D.

Carl Gulbrandsen Chair
Chief Executive Officer
Morgridge Institute for Research



Virology research helps Helena Jaramillo Mesa soar

Growing up in Medellín, Colombia, Helena Jaramillo Mesa remembers her mother's oft-repeated admonition to "never let anyone or anything cut your wings."

Early on, she came to believe that her altitude in life relied on constant learning, absorbing every chance to take on new challenges and absorb fresh ideas. With that as a backdrop, Jaramillo Mesa is thriving as a postdoctoral researcher in Morgridge Investigator Paul Ahlquist's lab in the John W. and Jeanne M. Rowe Center for Research in Virology.

"I'm driven by purpose. I like waking up every day feeling that I love what I do and I'm so

fortunate and privileged that my job is learning," says Jaramillo Mesa. "I literally get paid to learn new things every day. I wouldn't do well in an environment where I'm not stimulated all the time."

In the Ahlquist Lab, Jaramillo Mesa studies how RNA viruses replicate by assembling specialized structures inside host cells. Understanding these processes could help unlock new strategies for developing broad-spectrum antiviral treatments to control the viruses.

"Each virus has its own way to do it," she says. "The major limitation we face in controlling viruses is that we're developing one antiviral against one virus, and that is a losing game. That virus is going

to mutate and overcome the specific antiviral. What we need is broad-spectrum antivirals based on mechanisms that these viruses have in common.”

Jaramillo Mesa is animated and enthusiastic as she describes her work. “Curiosity-driven science is what leads to solutions. Until we understand the basics of how things work, we can’t re-engineer them and develop applications. I would love to be part of that. But just understanding how they work is fascinating to me,” she says.

Her road to science began with the arts in middle and high school in Medellín. She was immersed in orchestral music, polishing her skills as a viola player.

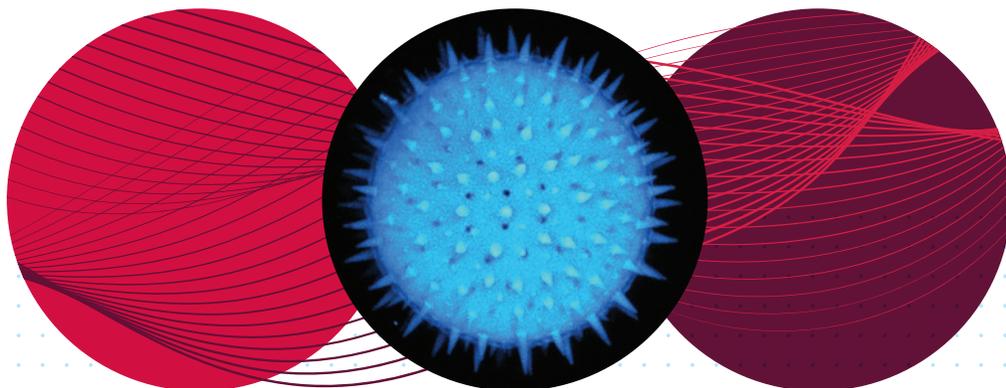
“It’s just you and your instrument, and if you don’t have the discipline to go forward and improve, then you don’t have a chance with that. It teaches you so much about what you’re capable of,” she says.

Jaramillo Mesa was drawn to science but was unsure of what path would be best. At a career fair, she ran across biological engineering as a possible major at the Universidad Nacional de Colombia. Plunging ahead, she earned a bachelor’s in biological engineering and a master’s in biotechnology.

She became fascinated with bioinformatics, working in a plant pathology lab studying viruses’ effects on tropical fruit crops such as purple passion fruit, lulo, and tree tomatoes.



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“I fell in love with viruses. They blew my mind,” she says. “They’re these incredible, perfect machines that can completely manipulate a multicellular organism. They are miniscule machines that aren’t even alive, but they can completely control a host.”

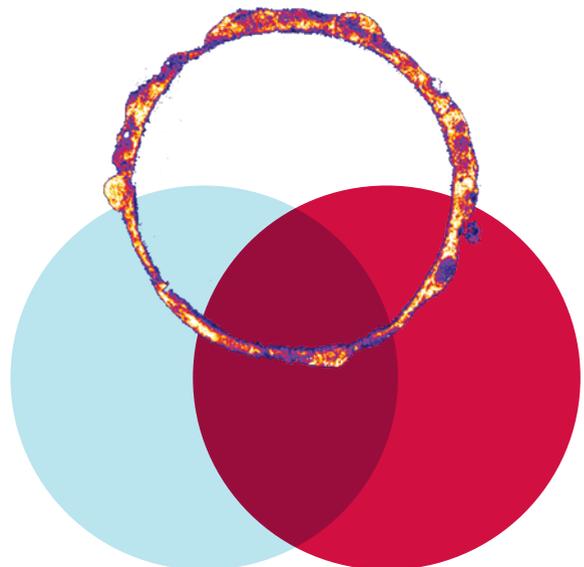
Aiming for a doctorate, Jaramillo Mesa considered a Danish university and Ohio State but was drawn to Madison after meeting with UW–Madison plant pathology Professor Aurelie Rakotondrafara, who was studying how plant viruses make proteins in a unique way.

During her doctoral program, she took a virology class from Ahlquist — who sat on her Ph.D. committee.

“He has such an engaging way of talking about viruses,” Jaramillo Mesa says. “I admire how he explains very complex terms or processes in a way that you leave the room saying, ‘I completely understand what you said.’ I asked him if it was possible to do a post-doc in his lab and he said yes.”

Scientists, she says, bear a growing social responsibility to communicate their work to the public to build understanding and dispel misinformation.

“The public has every right to be confused by the things we do. Science gets more and more complex,” she says. “The problems we solve need bigger and bigger introductions and knowledge. Good evidence-based science is a social responsibility.”



Night in the Lab: Virology



MARK YOUR CALENDAR!

**THURSDAY, APRIL 30TH, 2026
5:00 PM – 7:30 PM**

This exclusive event for supporters of the Morgridge Institute for Research is designed to ignite a passion for science and shed light on our work. This program will focus on Morgridge's work in virology, featuring principal investigators Paul Ahlquist, Tim Grant, Megan Spurgeon, and Tony Gitter. Grab a drink and join us for a fascinating evening at the John W. and Jeanne M. Rowe Center for Research in Virology! Refreshments and beverages will be served.

Register for this free program by scanning the QR code.



Wisconsin Science Festival rocks curiosity, rolls to success



The 15th annual Wisconsin Science Festival stoked the imaginations of tens of thousands of state residents, from youngsters to seniors all eager to learn more about science and art.

With events ranging from guided nature hikes, story times, hands-on expos, and lectures at pubs, the 10-day October festival attracted 53,170 people across nearly 200 venues in 56 counties.

“All across Wisconsin, libraries, museums, performance spaces, nature centers, campuses, breweries, and community organizations opened their doors to offer hands-on experiences, creative performances, and welcoming places to explore and enjoy science together,” says Samantha Mulrooney, festival director. “Hearing directly from hosts and attendees was incredibly inspiring and a powerful reminder of the impact that shared curiosity and expertise can have in communities statewide.”

The festival is produced by the University of Wisconsin–Madison, the Morgridge Institute for Research, and the Wisconsin Institute for Discovery. The latest version featured the theme of “Rock and Roll” — emphasizing the dynamic intersection of science and art, with record-setting 820 festival events and programs inspired by music, motion, and the geology that shapes Wisconsin.

One of the festival’s popular features is the Morgridge-backed “Science in a Bag” project. More than 100 local libraries helped distribute more than 3,000 take-home kits in drawstring bags that held several activities and access to digital resources featuring science and research happening in Wisconsin.

The festival, which began as a three-day event in Madison, has steadily grown in reach and popularity. Last fall’s festival saw 76% of its events conducted outside of Madison.

“The mission of the Wisconsin Science Festival is to elevate science and art to keep Wisconsin curious and to showcase the imagination and creativity that fuel innovation,” Mulrooney says.

- ▶ Renowned geologist, author, and Lawrence University geology professor Marcia Bjornerud leading an exploration of the Earth beneath our feet at the Door County Museum and Archives.
- ▶ The Waukesha County Historical Museum featuring an immersive exhibit on Les Paul, who made waves in the music industry by experimenting with sound and inventing the solid-body guitar.
- ▶ A panel of local geologists and artists coming together to thread the story of Earth’s oldest rocks to kick off the Crossroads of Ideas series.





DONOR PROFILE

Matt Peterson's vision builds scientific understanding by supporting youth

When Matt Peterson sensed a growing cultural divide over science and policy in Wisconsin several years ago, he reached out to the Morgridge Institute for Research in an effort to help bridge the troubling gap.

“It was at a time when I was increasingly concerned, and I was looking for ways to contribute to getting people together in constructive ways,” says Peterson, whose interest led him to support Morgridge’s Summer Science Camps.

The Summer Science Camp is a unique, immersive program for high school students and teachers in rural communities and from historically underrepresented groups in science. For four days, participants stay overnight in campus residence halls, explore hands-on activities in state-of-the-art facilities, learn from renowned scientists,

and gain extraordinary research experience in a supportive community.

“When I heard about the camps, I thought, ‘What better way to help heal those divides than helping youth get together over science?’” he adds.

Peterson grew up in Williamstown, Mass., a small college town nestled in the Berkshires and went on to earn a bachelor’s degree in communications at Boston College. That’s where a work-study job triggered Peterson’s interest in computer technology.

“That job got me involved in computers and I learned computer programming and decided to pursue a career in technology,” Peterson says.

Intrigued by visual technologies, Peterson worked in diverse places around the world, developing computer-aided design tools for engineers and

architects and tools that enable film and television producers to enhance the impact of their work.

Along the way, Peterson gained a deeper appreciation for the role science plays in society.

“I got to see science at work around the world, which I always found fascinating,” he says. “I had an opportunity, for example, when I was working with the World Health Organization in Switzerland to visit CERN — the European Organization for Nuclear Research — up close and personal. And I saw the assembly of the Pioneer Venus spacecraft out in Los Angeles. I was always intrigued.”

During his technology career, Peterson worked for larger firms, initially for a company called Computervision, for smaller early-stage ventures, and in his own consultancy.

After 30 years in Madison, Peterson is now retired and enjoys outdoor activities such as biking, camping, hiking, and winter sports. He also volunteers on the Technical Advisory Committee of the Madison Development Corporation’s Venture Debt Program.

“That work allows me to get a close-up look at the fascinating variety of emerging businesses driven by UW–Madison science,” he says.

Peterson participates in Morgridge’s Night in the Lab programs that brings science-curious donors and supporters closer to the institute’s work and the researchers that drive it forward.

“One of the things I like about science is that it gives me a bigger perspective on nature than at just the human scale. I can appreciate things on a very large scale, a very small scale. It expands my whole appreciation for nature,” Peterson says.

Each year, Peterson and his wife Pam — herself a former educator — also draw particular satisfaction from attending student presentations at the conclusion of the Summer Science Camps.

“It’s fascinating to hear how each one focuses on what they got out of the experience and what excited them,” Peterson says. “It’s also inspiring to talk with the instructors. They’re all very energetic, motivated people with so much knowledge to share.”

THANK YOU

Rural Wisconsin high school students get hands-on science experience — and inspiration — because of your support.



MATT PETERSON



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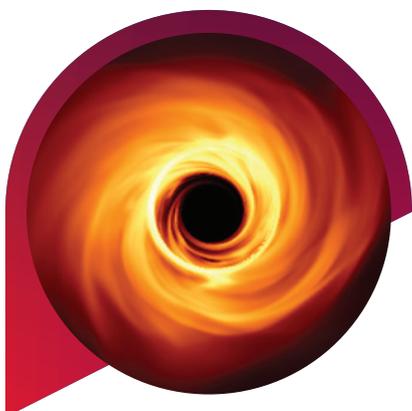
Advances led by Morgridge scientists



Bioengineered arteries show promise for bypass surgery

Scientists at UW–Madison have been at the forefront of stem cell research and regenerative biology since James Thomson isolated the first human embryonic stem cell in 1998. Now, they are growing stem cell-derived artery grafts that could advance the field of vascular bypass surgery to combat cardiovascular disease.

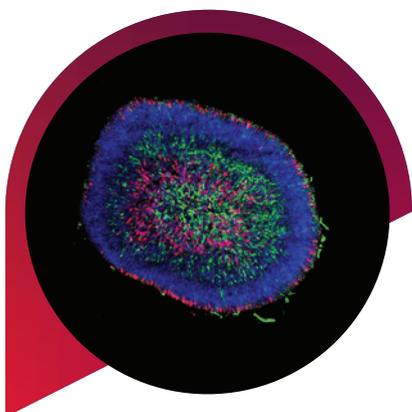
In a new study published in *Cell Reports Medicine*, they built upon that work to create a universal, small diameter, vascular graft using stem cell-derived arterial endothelial cells (AECs) that could advance the field of vascular bypass surgery.



Decoding black holes with high throughput computing

The international team trained a neural network with millions of synthetic simulations and artificial intelligence (AI) to tease out new cosmic curiosities about black holes, revealing the one at the center of our Milky Way is spinning at nearly top speed.

These massive simulations were generated by throughput computing capabilities provided by the Center for High Throughput Computing (CHTC), a joint entity of the Morgridge Institute for Research and UW–Madison. The astronomers announced their results in three papers published in *Astronomy & Astrophysics* in June 2025.



Morgridge expertise tapped for advanced eye disease research

Inside the human eye, the retina is made up of several types of cells, including the light-sensing photoreceptors that initiate the cascade of events that lead to vision. Stem cell replacement therapy using lab-grown photoreceptors is a promising strategy to combat retinal disease.

In a March 2025 study published in *Stem Cell Reports*, UW–Madison ophthalmology researcher David Gamm Lab partnered with researchers at Morgridge to develop lab-grown pig retinal organoids. They found that pig-derived photoreceptors shared many similarities with those made from human retinal organoids. Morgridge bioinformatics PI Ron Stewart and his team built these new stem-cell derived organoids.



‘Just the Facts’ is not enough to counter science skepticism

In a new communications landscape that feasts on polarization, the science community needs to rethink how it engages society in scientific discovery, controversy and policy. By showing humility and acknowledging that science “doesn’t have all the answers,” scientists can be more effective communicators with society.

In a July 2025 special report in *Proceedings of the National Academy of Sciences (PNAS)*, Morgridge Investigator Dietram Scheufele argued that the standard communication model of disseminating the facts and assuming “the truth will prevail” is increasingly falling on deaf ears.



Mass spec offers new way to wrangle multi-omics data

To better understand the underlying mechanisms that can lead to disease, scientists need reliable and efficient tools to collect and analyze -omics data — an integrated approach to studying different subsets of biomolecules.

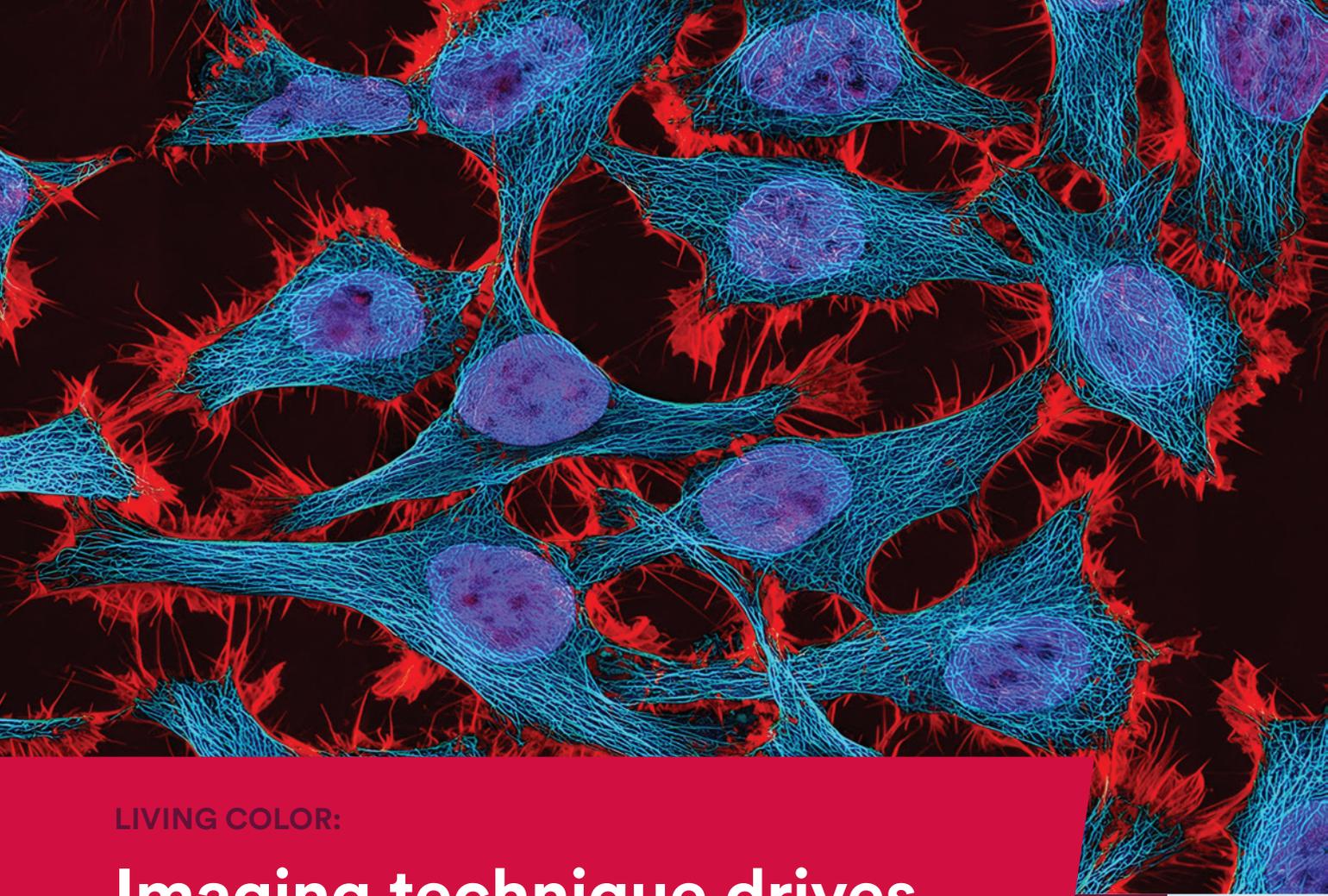
Research published in January 2025 in *Science Advances*, outlined a new mass spectrometry method that uses nanoflow-based multiomic single-shot technology to profile both proteins and lipids simultaneously. Morgridge investigator Joshua Coon co-led the project, along with Harvard cell biologist Wade Harper, who studies neurodegenerative diseases.



CHAMMI-75: Finding common ground across millions of biology images

Scientists at the Morgridge Institute for Research are raising the ante on the common phrase, “Every picture tells a story.”

Morgridge Investigator Juan Caicedo and his team have developed a database that combines 2.8 million cellular images — captured across a wide range of imaging modalities — that can be used to train machine learning models to help answer questions about basic biology, functional genomics, and treatment design. The ultimate goal is to provide researchers with a more universal tool to examine cellular morphology for biological studies.



LIVING COLOR:

Imaging technique drives discovery, reveals cellular secrets

Life is aglow — literally. Scientists at the Morgridge Institute for Research harness this phenomenon, known as fluorescence, to unlock the cellular secrets underlying health and disease otherwise destined to remain hidden from view.

We've produced an engaging photo-filled primer on the fascinating principles and practice of fluorescence microscopy that enable Morgridge researchers to create a revealing, color-splashed window into the building blocks of life.



Learn more about the imaging approach by scanning the qr code.

THANK YOU

For providing the critical resources that bring high-impact advances to life.

Create a Legacy of Discovery

No matter your stage in life, it's never too early — or too late — to plan for your future.

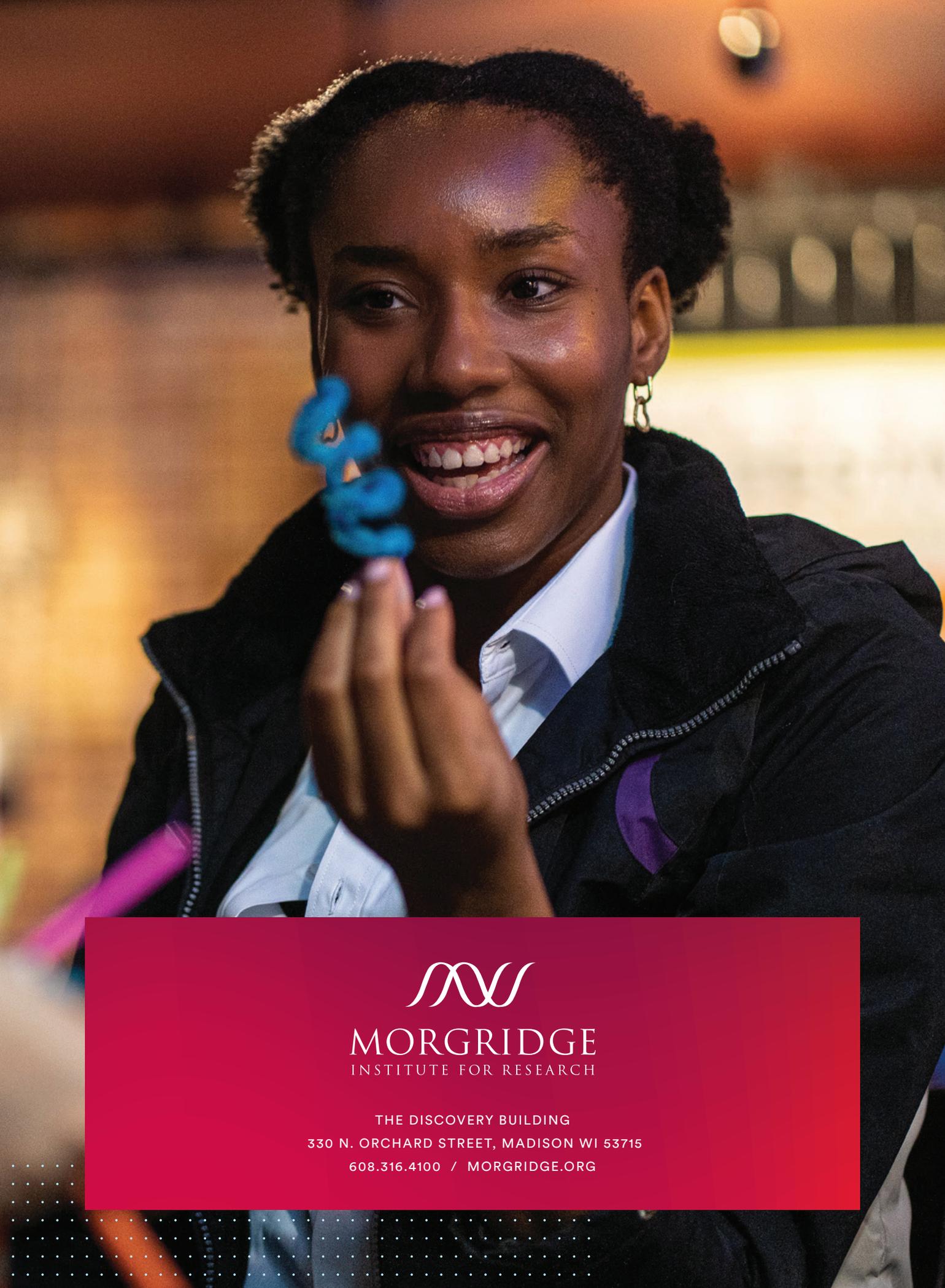
Legacy gifts are a meaningful way to honor your life and make an enduring impact. You can help us improve human health through curiosity-driven research and develop the next generation of scientific leaders.

Through a legacy gift, you can support future *Fearless Scientists*, educators, and students. Your commitment to curiosity-driven research will long be remembered and serve as an inspiration to others.

**Contact Bill Swisher,
Chief Development Officer, today.
bswisher@morgridge.org
(608) 316-4364**

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