ANNUAL REPORT

2023

Prepared for WARF and Morgridge Trustees, UW–Madison leaders and friends of the institute.

MORGRIDGE INSTITUTE FOR RESEARCH

WISCONSIN UNIVERSITY OF WISCONSIN–MADISON

WARF Wisconsin Alumni Research Foundation

What makes Morgridge research distinctive?

Science hasn't done itself any favors in the ways it describes research to the general public. One universal term is "basic research," which fails to conjure anything clear about what research is, how it's conducted and why it matters.

If you do a cursory search of definitions of "basic," a few synonyms hit the mark, like "fundamental" or "essential." But dig a little deeper and you will find many words that are pretty much antithetical to research — like "unsophisticated."

We've been giving a lot of thought to this lately at the Morgridge Institute. Now more than 15 years into our history, we are developing a more refined understanding of our strengths and distinctiveness as a (ahem, basic) biomedical research institute. And we're trying to identify more precise language to clearly describe our mission.

We believe a couple of new developments will help us move forward.

First, we dug deeper into our creative platform of "Fearless Science," developed in 2017 after extensive interviews with our investigators. The phrase is meant to capture unique elements of our research culture, our attitude and our personality. As you will see later in this report, we spent time in 2023 fleshing out more deeply what it means to be "fearless" in the context of biomedical research.

Second, we modified how we describe our research areas. From Day One, our research has been defined by the seven broad themes our scientists work within, including regenerative biology, research computing, metabolism and bioethics. Those remain important — but leading with themes inadvertently suggests to the outside world our scientists operate within set boundaries. In fact, our scientists are highly interdependent and collaborative, not only within Morgridge but with colleagues all across UW–Madison.

So we simplified down to three broad categories — **Frontiers of Biology, Transformational Tools** and **Science & Society.** Each of our 20 PIs may have a primary home in one of these areas, but they will identify and frequently work within all three. This approach is especially valuable in reinforcing the fact that modern biology requires a strong fusion of bench research and computational science, and a societal commitment to being rigorous, ethical and impactful.

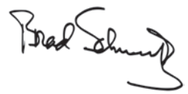
We don't expect to change the world when it comes to the term "basic research." But we will do our best to use a more descriptive term — in our case, **curiosity-driven research** — that we think better captures the motivation behind our life's work.

This effort is a culmination of several robust conversations with our Board of Trustees and Scientific Advisory Board, interviews with all of our PIs, and select interviews with more than a dozen early career scientists and support staff. In tandem with these interviews, an internal working group gathered information and helped us craft a message that puts our best foot forward when attracting top talent to join us at Morgridge.

How we describe our work matters, and it's imperative we get it right. These terms will set the tone for a common understanding of the value we provide to society. And they create a simple shorthand that everyone at the institute can use and reinforce to colleagues and friends.

So here's a salute to the pursuit of Fearless Science. Nothing basic about it.

Sincerely,



Brad Schwartz
CEO, Morgridge Institute for Research

About the cover
Odette Herrand, a graduate researcher in the lab of Daniela Drummond-Barbosa, works on a project to understand the role yeast plays in egg production in the fruit fly. The Drummond Barbosa Lab is a quintessential example of curiosity-driven research.

Research

As an independent research organization, the Morgridge Institute for Research explores uncharted scientific territory to discover tomorrow's cures. In affiliation with the University of Wisconsin–Madison, we support researchers who take a fearless approach to advancing human health in fields such as regenerative biology, metabolism, virology, bioethics, advanced computing and biomedical imaging.

Transformational Tools

Advancing technologies to transform biomedical research, from cryo-EM and mass spectrometry, to multi-scale imaging and diagnostics, to artificial intelligence and high-throughput computing.

Randy Bartels

Developing tools to push the limits of biomedical imaging

Brian Bockelman

Maximizing the potential of research computing

Juan Caicedo

Detecting patterns across massive biological datasets

Josh Coon

Innovating mass spectrometry to drive biological discovery

Kevin Eliceiri

Eliminating the blind spots in modern imaging

Tony Gitter

Decoding the language of diseased cells

Tim Grant

Developing new tools to see life at the atomic scale

Miron Livny

Breaking the bottlenecks in big data analysis

Ron Stewart

Making sense of large biological datasets

Melissa Skala

Tailoring the cancer treatment to the individual

Frontiers of Biology

Exploring biological questions that could bring profound benefits to human health, including research into regenerative biology, metabolism and virology.

Paul Ahlquist

Creating new approaches to undermine viruses

Jason Cantor

Exploring the interplay of biology and the environment

Daniela Drummond-Barbosa

Developing tissues from stem cells

Jing Fan

Navigating the roadways of metabolism

Phil Newmark

Understanding the rules of infinite regeneration

Johan den Boon

Targeting molecular mechanisms at the heart of viruses and disease

James Thomson

Assembling the building blocks of human biology

Melanie Issigonis

Understanding the rules of infinite regeneration

Science & Society

Addressing society's high expectations for science with research programs in research communication and bioethics, and public engagement programs that reach thousands annually.

Dominique Brossard

Connecting the worlds of science communication theory and practice

Pilar Ossorio

Building a culture of responsible science

Dietram Scheufele

Connecting the worlds of science communication theory and practice

Community Engagement

Sparking scientific curiosity and serving society in partnership with UW–Madison

What is Fearless Science

We asked our scientists to define what is distinctive about our approach to research, and they coalesced around the idea of “fearless science.” We are structured to help scientists push into new frontiers of biology, rather than work around the edges of what’s already known. For curiosity-driven research to thrive, our scientists must have the freedom, flexibility and courage to pursue transformational ideas.

Our Values

Curiosity

Science is about what we don’t know. Our scientists are driven by a deep curiosity for how the world works.

Freedom

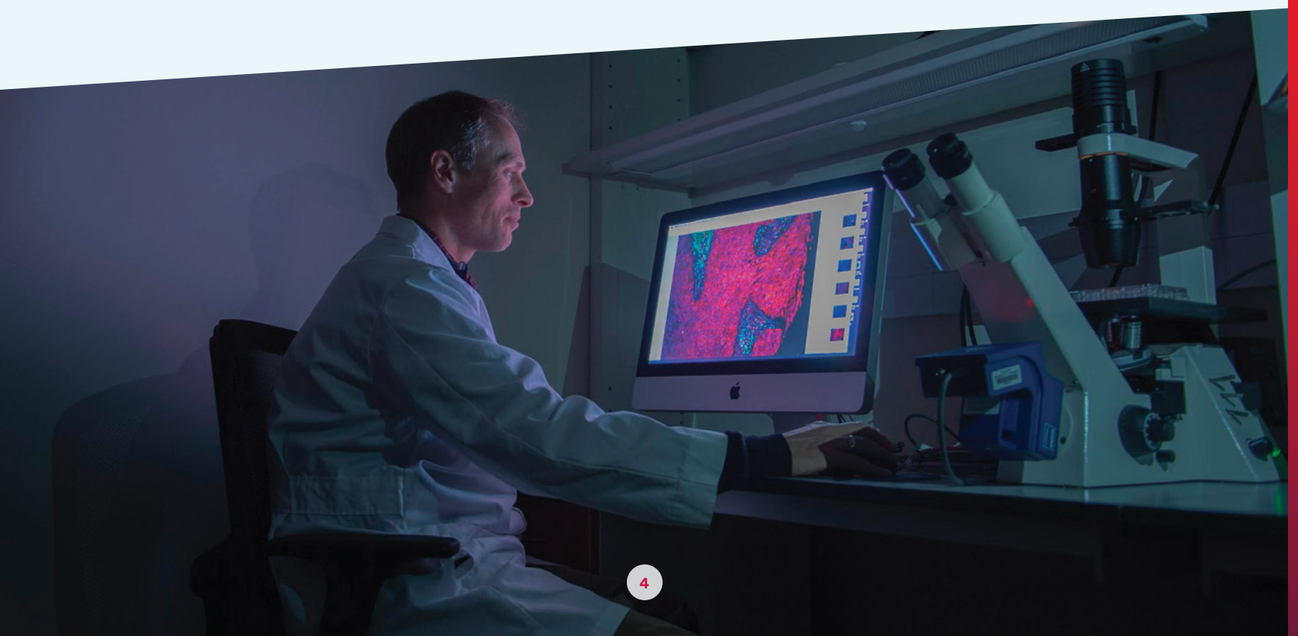
Morgridge researchers have the support and time needed to do the very best possible research — and the freedom to go where the scientific method takes them.

Courage

Pushing into new frontiers means accepting unexpected turns and occasional dead-ends. Morgridge recognizes that embracing risk can yield transformational results.

Flexibility

Morgridge strives to remove barriers so our scientists can work quickly, collaborate freely and pivot into new opportunities when they arise.



From our scientists

Morgridge is about people who have their eye on the future, looking for big problems to solve or bringing creative approaches to old problems.

TONY GITTER — INVESTIGATOR, VIROLOGY

At Morgridge, I’m able to pursue high-risk projects and I’m given the time to do what I feel is important. I tell people Morgridge is like a utopia for research.

MELISSA SKALA — INVESTIGATOR, BIOMEDICAL IMAGING

One analogy would be that Morgridge can be like the stem cells of the research world. We have the flexibility and potential to become almost anything.

JING FAN — INVESTIGATOR, METABOLISM

Basic science allows scientists to ask questions about how the world works. And when you do that, you don’t know what you’re going to find. Most of the major breakthroughs in human health came from looking at unexpected places.

PHIL NEWMARK — INVESTIGATOR, REGENERATIVE BIOLOGY

Morgridge has all the benefits of being a private, agile research institute, but still sitting in the middle of a billion-dollar thriving campus. And that makes it incredibly unique.

BRIAN BOCKELMAN — INVESTIGATOR, RESEARCH COMPUTING

The year in discovery

1 ‘Deep proteome project’ provides atlas of human complexity

If DNA is the instruction manual for life, proteins are the frontline workers that translate those instructions into products. The Joshua Coon Lab took a quantum leap forward in 2023 in the ability to sequence proteins en masse — the first step in determining their function.

Coon and Morgridge postdoctoral fellow Pavel Sinitcyn created a new process called “deep proteome sequencing” that enables them to identify about 80 percent of all proteins that exist in a mass spectrometry sample — up from the 20 percent found in standard approaches.

“Data generated from this study represent the deepest proteomics map collected to date,” says Coon. “These methods and resources lay the foundation for comprehensive mapping of protein diversity and are expected to catalyze future research efforts.”

JOURNAL: NATURE BIOTECHNOLOGY

2 Using cryo-EM to unravel a bacterial ‘high-wire act’

Bacteria have a bumbling, stumbling approach to copying their genome. In almost every case, internal glitches occur that break off the sequence before it’s completed. But they are rescued by a sophisticated process called “replication restart,” which detects the break and quickly dispatches proteins to fix the problem.

Scientists have never been able to catch this activity “in the act,” until cryo-electron microscopy (cryo-EM) paved the way. Morgridge Investigator Tim Grant partnered with UW–Madison biomolecular chemist James Keck to use cryo-EM to reveal a “switch-like mechanism” in bacteria that interacts directly with the broken DNA strands, putting them back on track.

Better understanding this process could have major implications for creating new antibiotics that interfere with replication restart.

JOURNAL: NATURE COMMUNICATIONS

3 Linking infertility and higher temperatures

Of the many impacts of climate change on the natural world, its effect on fertility could mark the tipping point between survival and extinction.

Research in the Daniela Drummond-Barbosa Lab, led by assistant scientist Ana Caroline Paiva Gandara, demonstrated how chronic exposure to warm temperatures causes infertility in adult male fruit flies (*Drosophila melanogaster*). The team concluded that two key factors contribute to infertility in the fly when exposed to warm, suboptimal temperatures: Males develop less sperm and the sperm were of poor quality.

“We don’t need super high temperatures to affect an imbalance in the ecosystem that could cause extinction,” says Gandara. “The flies don’t need to die, they just need to be sterile.”

JOURNAL: SCIENTIFIC REPORTS

4 The engineering challenge of preterm birth

Preterm birth remains a stubborn and poorly understood problem, but new imaging techniques developed at Morgridge are helping scientists discover early biomechanical triggers.

Morgridge PI Melissa Skala and assistant scientist Kayvan Samimi lead a multi-year project to image more than 60 fetal membrane samples that have been provided by partner hospitals after births, including Meriter Hospital in Madison and Intermountain Healthcare in Utah.

These membranes normally break during labor, but premature rupture is often one of the key causes of preterm birth. The Morgridge team, for the first time, developed methods to simulate stress points and visualize physical changes in these membranes that might contribute to rupture and be detectable during pregnancy.

JOURNAL: BIOMEDICAL OPTICS EXPRESS

5 The machinery of viral replication revealed

RNA viruses, such as the coronavirus that causes COVID-19, are in a life-and-death race the moment they infect a cell.

These viruses have only minutes to establish their replication machinery inside the host cell before the genetic instructions contained in their vulnerable RNA genomes are compromised. If this early step succeeds, the virus will start cranking out millions of copies of its genome to spread throughout the host.

The machinery involved with this process is being captured in exquisite detail by the Paul Ahlquist Lab, using cryo-EM. In 2023, the team developed striking 3D images of the molecular complex that replicates the viral genome inside the cell. The knowledge may provide new ways to disrupt a dangerous family of viruses.

JOURNAL: PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES (PNAS)

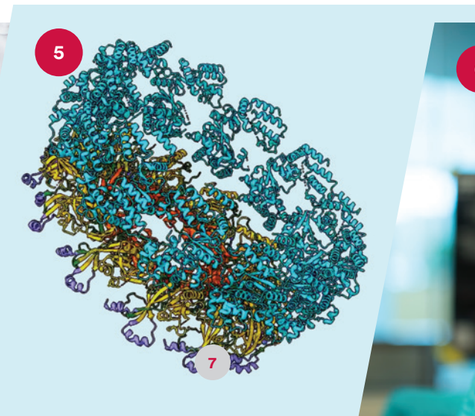
6 Macrophages as a new cancer treatment tool

Macrophages are specialized immune cells that can be adapted for the treatment of certain solid tumors by arming them with chimeric antigen receptors (CARs). Macrophages equipped with CARs can specifically recognize the cancerous cells over the healthy ones, and also eliminate a subset of them in the process.

However, generating macrophages from adult cells is a major challenge, leading Morgridge scientists to explore stem cell engineering for answers. Work led by associate scientist Jue Zhang investigated ways to use CRISPR gene editing methods to insert anti-GD2 CAR into pluripotent stem cells and produce CAR macrophages.

“Macrophages themselves have a limited ability to cure cancer,” says Zhang. “Once you have an anti-GD2 CAR expressed, that macrophage becomes an anti-tumor weapon.”

JOURNAL: STEM CELL REPORTS



Morgridge milestones

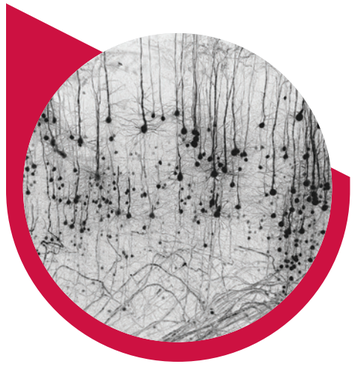
Gitter receives Jeanne Rowe chair in virology

Morgridge Investigator Tony Gitter in fall 2023 was named the inaugural Jeanne M. Rowe Chair in Virology.

The chair honors Jeanne Rowe, who, along with her late husband John Rowe, has been deeply involved in the Morgridge Institute and UW–Madison. The Rowes have been longtime supporters of fundamental research and, in particular, of the ways early-stage research can improve human health.

That support culminated in the creation in 2018 of the John W. and Jeanne M. Rowe Center for Research in Virology, where Gitter is an investigator.

“My husband, John, and I wanted to do our part in helping the best and brightest investigators such as Tony do what they do best: impacting humanity in such a huge way,” Jeanne Rowe says.



BioImaging North America takes wing

If there is one constant in biology, it’s the need for precise, robust imaging. A program housed at Morgridge hopes to elevate the entire field of biomedical imaging by helping scientists learn from one another and explore new technologies.

BioImaging North America (BINA), led by investigator Kevin Eliceiri, received a new multi-year commitment in 2023 from the Chan Zuckerberg Initiative (CZI) to continue building scientific bridges across the continent.

With the core CZI support, BINA has now grown to more than 1,200 members from across the globe, including 200 core imaging facilities in the U.S., Mexico and Canada. In both 2022 and 2023, more than 700 new members joined the organization.

“We’re trying to set up an organization that has all the elements we would want to build strong, lasting, interactive communities,” says Eliceiri.

Pelican: A universal plug for data sharing

The Morgridge Institute follows the principle that open sharing of research computing resources is a great enabler of scientific discovery. Now it is helping make the wealth of data generated by research computing available to the general public.

Nicknamed “Pelican,” a new project supported through a five-year grant from the National Science Foundation (NSF) will be run by Morgridge investigators Brian Bockelman and Miron Livny. The project will strive to make data produced by researchers, from single-investigator labs to international collaborations, more accessible for computing and remote clients for viewing.

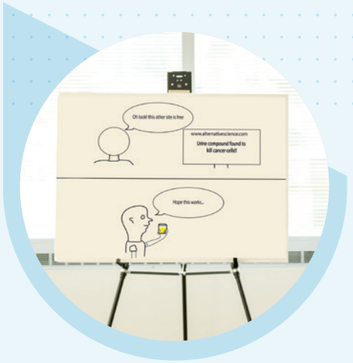
The ultimate goal: extract the most possible value from data generated through America’s investment in science. “Our philosophy is that not only should your research paper be public and readable, but your data should be as well,” Bockelman says.

SeLight: Morgridge’s newest spinoff gaining momentum

A technology generated from the Melissa Skala Lab is showing promise in improving the efficacy of immune cell and stem cell therapies, both exciting new frontiers in cancer therapy and regenerative medicine.

SeLight LLC, a company run by Morgridge assistant scientist Amani Gillette, could revolutionize cell manufacturing by allowing researchers and clinicians to screen cell health and fitness before manufacturing. SeLight has been in development since 2018, when it won a Wisconsin Alumni Research Foundation Innovation Award.

SeLight technology is built off of the bread and butter of the Skala Lab: label-free imaging of cell metabolism. It works by measuring the inherent fluorescence of metabolic signals within cells to give a readout related to the health of those cells — in a way that doesn’t require specialized training from experts. The goal is an affordable, customizable system that can plug right into clinical settings.



Winning bioethics cartoon skewers publicly restricted research

A cartoon parody of the perils of restricting research access took first place in the 2023 Ethics Cartooning Competition, an annual contest sponsored by Morgridge.

This year, the competition drew more than two dozen cartoons, and the panel of judges was tasked with choosing the best entries based on three categories: depiction and analysis of a research ethics issue, humor and artistry. A popular vote by the public also contributed to the results.

First prize went to Daniel Osorio-Mendez, School of Medicine and Public Health. The contest is in its fifth year, run by bioethicist in residence Pilar Ossorio.

“In my day-to-day work, I attempt to make my own research findings more accessible by being open to sharing published manuscripts on sites,” says Osorio-Mendez.

Morgridge computing project meets hot campus demand

The scientific world is turning increasingly to a technology that video game developers have mined for decades: the graphic processing unit (GPU). Once designed to create mind-blowing visual effects, GPUs also are perfectly suited to power the sophisticated neural networks needed in artificial intelligence.

Spotting a campus-wide need for more GPU power, Morgridge investigator Tony Gitter successfully competed in UW 2020, a project supported by WARF and designed to stimulate highly innovative projects that could transform a field of study. Gitter partnered with the Center for High Throughput Computing to create a dedicated campus resource and training center devoted to GPUs.

Fast forward to 2023, UW–Madison scientists now have free access to a pool of 126 shared GPUs, which has been used by 189 scientists from 42 different departments.

Morgridge welcomed two bioimaging pioneers in 2023

Two new investigators to Morgridge are bringing powerful, innovative technologies to bear on understanding human biology and disease.

"Both scientists — **Randy Bartels** and **Juan Caicedo** — have enormous potential to partner with UW–Madison and Morgridge biologists who are looking for bold new approaches to image biology, to see what is currently unseeable," says Morgridge CEO Brad Schwartz.

Both PIs will be in the research themes of biomedical imaging and research computing, illustrating the interdisciplinary nature of their work.

Indeed, the combined strengths of UW and Morgridge allow them to do things here that would be difficult to do elsewhere.

Randy Bartels:

Pushing limits of bioimaging

Bartels, previously a professor of electrical engineering at Colorado State University, specializes in creating technologies that shed light on unseen worlds in biology. He develops light microscopy and laser technology for applications such as ultra-deep imaging of tissues and vastly improved resolution of cell populations.

He also joined the biomedical engineering faculty at UW–Madison.

"I've been working in the space of biomedical imaging for more than 15 years, but Morgridge and UW–Madison offer an opportunity to work with a wider range of collaborators in biology," says Bartels. "I think true innovation has to be collaborative, built on conversations across disciplines and lots of trial and error. I'm really excited to work with biologists who want to push what we're capable of imaging."

Two current Bartels research projects have captured the attention of the "Frontiers of Imaging" program at the Chan Zuckerberg Initiative (CZI). In 2020, Bartels received CZI support for a project to image more deeply into tissue by developing ways to suppress scattered light and increase resolution. And in 2022, Bartels partnered on a CZI project to develop a laser technology that can illuminate large populations or regions of cells, at much faster speed and higher resolution than conventional techniques.

Bartels has earned high honors for his work, including the Adolph Lomb Medal from the Optical Society of America, a National Science Foundation CAREER award, a Sloan Research Fellowship in physics, a Beckman Young Investigator Award, and a Presidential Early Career Award for Science and Engineering (PECASE).

While Bartels's academic training is almost exclusively in physics and engineering, today he is most at home at the intersection between physical sciences and biology. Morgridge is especially well-suited to support that crossover.

"These days, I spend a lot more time reading biology papers than I do physics papers, because I want to understand some of the problems that we really need to solve," he says.

Juan Caicedo:

Decoding complex patterns in human biology

Caicedo, previously a Schmidt Fellow at the Broad Institute of MIT and Harvard, also joined the faculty of biostatistics and medical informatics at UW–Madison. Caicedo invents computer vision tools to analyze vast amounts of biological data — in some cases, millions of cellular images — to recognize patterns that could be meaningful to human disease.

Madison will be an ideal place to reach new levels in collaboration with biomedical and computer scientists, he says.

"I really appreciate having the support of a private institute to do research that is kind of risky," Caicedo says of Morgridge. "And I like the institute's vision of 'fearless science,' in which you can really go after the most difficult challenges that may be hard to approach with traditional ways of conducting research. I like the freedom to explore new ideas and embrace new challenges."

Caicedo says that, as humans, every time we encounter some kind of obstacle, we are driven to invent new tools to overcome it — whether it be microscopes to see biology, telescopes to see outer space or machines to build cities. As skilled as pathologists and medical experts are in today's age, Caicedo says their chief obstacle — the limitations of human vision — motivates us to turn to computation for answers.

"In terms of decoding biology, we may not be able to see all the structural patterns of cells that matter in order to design treatments, or to fight viruses or to kill diseases," he says. "But we may be able to create the tools that can help us decode those specific patterns, understand them in a more scalable way so we can really address the more pressing issues in health."

At Morgridge, Caicedo is working to create an image processing platform to analyze cellular data from any experiment — regardless of the imaging modality, resolution or type of experiment — to identify common features about the phenotypic structure and morphology of cells. Caicedo calls the concept "universal morphology," and it has the potential to turbocharge our understanding of cell biology, drug discovery and disease biomarkers.

Reinforcing our commitment to science and society

This year, our team has re-organized to form the Morgridge Community Engagement group, allowing us to focus more directly on building connections between Morgridge scientists and the society that we serve.

Our guiding principle is to spark interest in science among students and families throughout Wisconsin, and we use research-informed methods to help youth build their own identity as future scientists. All of us are especially committed to broadening STEM (Science, Technology, Engineering and Mathematics) participation by people who have historically been underrepresented in the sciences, and we are thrilled at how many Morgridge researchers dedicate their time, talent and enthusiasm to inspiring the next generation.

Wes Marner
Engagement, Education and Equity Director

Program highlights

- Forged a new partnership model with eight UW–Madison engagement groups so that visiting schools can have multiple hands-on experiences throughout campus.
- Supported equitable access to science experiences by offering our field trips free of charge and by offsetting a portion of each school's transportation costs. **Field trips in 2023 attracted 1,100 student visitors.**
- Linked **10** afterschool programs in the Madison area with Morgridge and UW–Madison research groups to bring dynamic STEM activities into the community.
- Created immersive experiences through Afterschool Expeditions that go beyond traditional classroom learning; **1,128 students participated in 2023.**
- Welcomed **50 students and 10 educators** to our residential Summer Science Camp, hailing from rural high schools in 14 towns across Wisconsin and from Upward Bound.
- Served as producing sponsor of the Wisconsin Science Festival, leading the Discovery Expo and Field Trip Day. In just one day, **1,300 registered students from 26 schools** participated in campus science experiences.
- Welcomed more than **230 STEM professionals** who volunteered time to share their science, career advice and enthusiasm with visiting students.

Meet the team

Val Blair
SENIOR OUTREACH COORDINATOR

I have always been curious about the world around me, and growing up on a farm gave me many opportunities to explore the natural world and be curious. I love working at Morgridge in the field of informal science education because I get to keep learning about the research that happens here, and I have the opportunity to serve our community by helping young people see themselves as scientists.

Jerrod Buckner
OUTREACH COORDINATOR

I represent the students who might feel less intelligent and are underperforming in school. As that young adult growing up, I am proud to be part of Morgridge Engagement team that offers programs that show these students they belong and can succeed. We strive to empower those students who lack that confidence or don't have the connection to STEM.

Felipe Gomez
ASSISTANT OUTREACH COORDINATOR

Growing up, community educational programs were my cornerstone, offering a nurturing environment that fueled my curiosity and love for learning. Now, working within these very communities, I am dedicated to paying it forward by offering STEM programs that empower youth to build their own academic identities, fostering a new generation of enthusiastic and confident learners in science, technology, engineering, arts and mathematics.

Dan Murphy
OUTREACH AND LAB MANAGER

My perspective and passion in science education has shaped my identity and helps me create brave spaces where people can explore their world through STEM and feel empowered to participate in science. Welcoming people to explore together and have fun helps build a lifelong relationship with discovery and community, and I'm honored to be a part of that journey.

Medical research collaborations, powered by the Wisconsin Idea

As a UW–Madison endocrinologist, Dawn Belt Davis is fascinated with the exquisite way in which cells and bodily systems interact. Her fascination goes farther, though, extending to how scientists from an array of disciplines can work together on life-changing research aimed at stemming the growing and costly problem of diabetes.

"There are a lot of ways we can build new collaborations and bring in new areas of knowledge that overlap with what we're trying to do and move forward toward the ultimate goal of taking care of patients," says Davis, a physician-scientist and executive director of UW–Madison's Comprehensive Diabetes Center.

Those collaborations have the promise of tackling an often-deadly disease affecting an estimated 34.2 million Americans and exacts an annual healthcare cost of $3.9 billion in Wisconsin alone.

The center works with 112 UW–Madison researchers and 17 others from the Milwaukee-based Medical College of Wisconsin representing fields as diverse as surgery, pharmacy, biochemistry, veterinary science and others.

The center was formed in 2020 with the support of the Morgridge Institute for Research, as part of its Metabolism Initiative. The range of partnerships at the diabetes center transcends the boundaries of individual departments.

For example, collaboration led to Davis and Department of Surgery Professor Jon Odorico working with School of Pharmacy Professor Lingjun Li, an international expert in technology to identify proteins. Her research focus was on the study of hormones in crustaceans.

"We found someone with expertise not directly related to diabetes, but we realized that there was a huge opportunity in her work to support some of the work we are doing at the center," Davis says. "Morgridge's support enables that kind of new, exciting collaboration."

Morgridge's Metabolism Initiative involves more than 500 researchers from more than two dozen campus departments studying various fields encompassing metabolism — generally referred to as the chemistry of life.

In establishing metabolism as a focus area, Morgridge is building on its renowned role in advancing stem-cell science.

Brad Schwartz, Morgridge CEO, said the independent institute spent a couple of years exploring possible new initiatives through meetings and symposia. When the subject of metabolism arose, Schwartz said you could feel the electricity run through the room.

"We have come to realize that every perturbation of health is accompanied by changes in metabolic pathways," Schwartz said. "If you could make metabolic pathways revert to what they were in a healthy state, you stand a much better chance of restoring health."

A large portion of the campus has a growing interest in metabolism, ranging from diabetes to kidney disease to wildlife biology. And, it has more than a century of deep commitment to the Wisconsin Idea — the notion that research should reach beyond campus borders to help people.

"Faculty members are famous for being cynical," he said. "But you can get them to tear up when you talk about the Wisconsin Idea and that sense of valuing and improving something present in people's day-to-day lives."

Collaborations like those sparked by Morgridge, along with the university's commitment to service make Madison stand out. They also help fight disease, attract top talent and capture the economic benefits that scientific discovery offers.

Schwartz tells the story of a faculty member advising a postdoctoral scholar considering job offers from an Ivy League school and UW–Madison.

She said, 'You can't go wrong with an Ivy League school. But every person I've ever known who left the University of Wisconsin spends the rest of their life trying to get back.'

Investigators

Paul Ahlquist, John W. and Jeanne M. Rowe Chair of Virology; UW–Madison professor of oncology and plant pathology

Randy Bartels, Biomedical Imaging; UW–Madison professor of biomedical engineering

Brian Bockelman, Research Computing

Dominique Brossard, Science Communication; professor and chair, UW–Madison life sciences communication

Juan Caicedo, Biomedical Imaging; UW–Madison assistant professor of biostatistics and medical informatics

Jason Cantor, Metabolism; UW–Madison assistant professor of biochemistry

Joshua Coon, Thomas and Margaret Pyle Chair in Metabolism; UW–Madison professor of chemistry and biomolecular chemistry

Daniela Drummond-Barbosa, Regenerative Biology; UW–Madison professor of genetics

Kevin Eliceiri, Biomedical Imaging; UW–Madison associate professor of medical physics and biomedical engineering

Jing Fan, Metabolism; UW–Madison associate professor of nutritional sciences and biochemistry

Anthony Gitter, Jeanne M. Rowe Chair in Virology; UW–Madison associate professor of biostatistics and medical informatics

Tim Grant, John W. and Jeanne M. Rowe Center for Research in Virology; UW–Madison assistant professor of biochemistry

Miron Livny, Research Computing; UW–Madison professor of computer sciences

Phil Newmark, Regenerative Biology, Burnell R. Roberts Chair in Regenerative Biology; UW–Madison professor of integrative biology

Pilar Ossorio, Bioethics Scholar in Residence; UW–Madison professor of law and bioethics

Dietram Scheufele, Science Communication; UW-Madison professor of life sciences communication

Melissa Skala, Carol Skornica Chair in Biomedical Imaging; UW–Madison professor of biomedical engineering

Ron Stewart, Regenerative Biology

James Thomson, Emeritus, Regenerative Biology; emeritus UW–Madison professor of cell and regenerative biology

Morgridge Fellows

Melanie Issigonis, Regenerative Biology

Johan den Boon, John W. and Jeanne M. Rowe Center for Research in Virology

Morgridge Affiliates

Rozalyn Anderson, Metabolism

Matthew Brown, Regenerative Biology

Dawn Davis, Metabolism

John Denu, Metabolism

Rick Eisenstein, Metabolism Research

Jan Huisken, Biomedical Imaging

Anna Huttenlocher, Biomedical Imaging

Laura Knoll, Metabolism

Elizabeth Meyerand, Biomedical Imaging

Deane Mosher, Metabolism

Dave Pagliarini, Metabolism

Chad Reinstra, Metabolism

Igor Slukvin, Regenerative Biology

Andreas Velten, Biomedical Imaging

Justin Williams, Biomedical Imaging

Elizabeth Wright, Virology

Ming Yuan, Virology

Board of Trustees

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