On Wisconsin

FOR UNIVERSITY OF WISCONSIN-MADISON ALUMNI AND FRIENDS SPRING 2023

Vision

We foresee that you will meet a tall, green stranger seated on a steep hill. ... Photographing the future is hard, so we used a 360-degree capture device and a "tiny planet" rendering to create this crystal-ball view of Bascom Hall.

Photo by Jeff Miller

BASCOM HALL

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[1] Cambridge Associates, Venture Capital Benchmarks, March 31, 2019.

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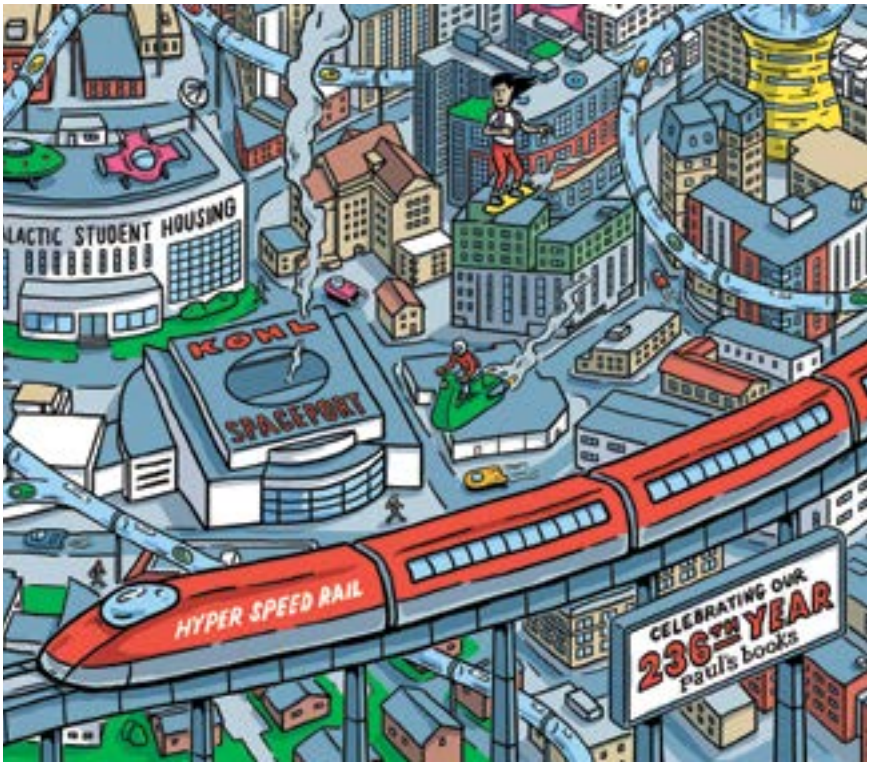
In the future, the Kohl Center will have a spaceport. We think. See page 34.



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The future looks bright thanks to UW research. See page 24.

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Professor Edna Ely-Ledesma shares her thoughts on the future of cities. See page 14.

Cover
Illustration by Danielle Lamberson Philipp

Communications

UW Food Memories

Imagine my shock when I read down the list of off-campus classics ["We Are What We Ate," Winter 2022 *On Wisconsin*] only to discover to my dismay that the world-famous Plazaburger had not made the cut! I lived on Henry Street in 1970, my first year in law school, and began a lifelong love affair with the cheeseburger slathered in creamy white Plaza sauce. That burger (which has been recognized by national burger gourmets) is iconic, one of the things that makes Madison Madison. Sixty years of satisfied UW students who called the Plaza home can't be wrong. Should I ever be so unfortunate to find myself on death row, a Plazaburger would be this condemned man's request for his last meal.

Dennis Burke JD'72
Madison

The Linda Falkenstein '83 article [about UW foods] brought back so many wonderful memories from my undergraduate years in Madison. None are better than my first college restaurant dining experience — Pino's Pizza on Park Street. The original was small, dark, intimate, and located away from the State Street chaos. It was everything a pizza restaurant could hope to be. Nearly 50 years later, I still remember it fondly.

Michael Selch '73
Los Angeles

Oh, my! Just the thought of eating a slice of fudge-bottom pie takes me back to the UW–Madison campus in the '60s. The memory of eating a Babcock Dairy ice cream cone brings a smile to my face and makes my mouth water. My classes were within an easy walk of Babcock, and I tried to sample every flavor. Thanks for the memories.

Katherine Alexander '64, MS'66
Hot Springs Village, Arkansas

We want to hear from you! Please email your letters to onwisconsin@uwalumni.com or mail to WFAA, *On Wisconsin*, 1848 University Ave., Madison, WI 53726. You can also post comments online at onwisconsin.uwalumni.com.

Sixty-plus years later, I still have fond memories of the brats from the Brathaus. I went there after studying at the library. I live in Virginia now, but I do wish I could go back for one more brat!

Sharon Crawford Schinstock
Charlottesville, Virginia

[In regard to] fudge-bottom pie: we called it black-bottom pie when I worked catering for the university in the '70s. After many banquets, the leftover slices served as our dinner. Later, working in the Union kitchen, I assembled hundreds of these custard-filled, graham-cracker-crust, chocolate-lined shells — a signature dessert that to this day I will never forget.

Mary Heidt '73
Pewaukee, Wisconsin

[UW head chef and creator of fudge-bottom pie] Carson Gulley was a friend of my dad, Paul Lamm. Carson wanted to buy a house in Middleton, where Dad was president of the city council. However, locals did not want a "colored" man to live in Middleton. Thus, Dad put through the first open-housing law in Middleton. Carson later bought a house nearby in Crestwood. I was always so proud of Dad for that.

Judy Lamm Figi '64, MM'68
Janesville, Wisconsin

The Badger Hit Parade

[In response to "The All-Time Greatest UW Playlist," Winter 2022]: Boz [Scaggs] x'66 was in my freshman English class. He sat in the front row and regularly fell asleep. I can still hear the instructor saying, "Mr. Scaggs! Mr. Scaggs!" When I went to a show at a very small venue in Berkeley many years later, I chatted with him about it.

Jill Lewin Chesler '66
Aptos, California

The photo of Lou and Peter Berryman outside the Club de Wash brought back wonderful memories. In the late '70s and early '80s, my wife-to-be and I were club regulars drawn by the quality of the music, the camaraderie of the crowd, and the low cost. (A comment commonly heard on the queue to get in was that the 25-cent cover charge was just to keep the riffraff out.) Also housed in the Hotel Washington in those years were the Barber's Closet, the site of a former speakeasy; and Rod's, a lively, well-patronized social mecca for the gay community. Oh, yes, the photo also inspired an evening listening to the music of the Berrymans for the first time in decades.

Peter Barbella '82
Athens, Wisconsin

The list [of the all-time greatest UW songs] could've included something from drummer Wally Ingram '84, who went on to tour with Sheryl Crow, Tracy Chapman, Jackson Browne, Art Garfunkel, and more. I probably would've included one of his duo projects with David Lindley — maybe "Cat Food Sandwiches." Wally's Madison groups included Pat MacDonald & the Essentials, the Tony Brown Band, and Elektro Lovekit.

Phil Lyons MA'05, MFA'07
Middleton, Wisconsin

[On the topic of UW-related hit songs], my uncle Jack Segal '42 was a celebrated composer. He wrote "Scarlet Ribbons," "When Sunny Gets Blue," "Hard to Get," "When Joanna Loved Me," and "Here's to the Losers," to name a few. I used to sing the many songs he wrote for children, including "Calico Pie" and "Youngest in the Family."

Lonnie Sue Shimon Post '72
Milwaukee

I enjoyed the article about UW hit songs. But I think you may have confused readers by subtitling the article "Our picks for the best songs by Badger alumni," and then only referencing songs performed by UW folks. For

example, Allee Willis '69 cowrote the songs "September" and "Boogie Wonderland," performed by Earth, Wind & Fire.
Larry Ashmun
Madison

Rare Role Model

I have met Herb Kohl ["Nobody's Senator but Ours," Winter 2022], but so have a majority of Wisconsin residents. He traveled the state endlessly, not unlike [the late U.S. senator from Wisconsin] Bill Proxmire. There is not enough room to add his accomplishments and the people he helped. I needed help once with an aging-parent situation and reached out to him. He did not ask about party affiliation.

If ever there was a role model in this day and age, he is the man.
Jerry Smith
Middleton, Wisconsin

Great article on Senator Herb Kohl. My first job as a 16-year-old was as a grocery bagger at the Kohl's Food Store on 35th Street in Milwaukee in 1974. I was advised by the seasoned veterans that if you ever heard the code word "Herbie," you immediately dropped what you were doing, ran up to the checkout lanes, and performed at your very best. This meant that there was a sighting of Mr. Kohl, who had a propensity for observing customer interactions and providing his feedback.

Sure enough, on my third night on the job, everyone is whispering "HERBIE!" I remember seeing this very distinguished and well-dressed man walking into the store. We probably had four or five checkout lines open at the time, and he immediately makes a move toward my line. Standing two feet behind me, he starts small-talking with the cashier and then with the customer. I have no idea what was said because I could only hear my rapidly accelerating heartbeat. After what seemed like an hour, I finish bagging the order and saying thank you to the customer. I get a tap on the shoulder, I turn around, and Mr. Kohl says, "Fine job, young man."

Thanks for that, Mr. Kohl, as those four simple words meant an awful lot to a scrawny 16-year-old kid.
Jim Schuster '80
Winter Park, Florida

Thanks for the excellent article on Herb Kohl. Many people hoped that when he retired from the U.S. Senate, Mr. Kohl would come back and run for governor of Wisconsin. It's our loss that he chose not to.
Barbara Malin Vass MA'69
Somers, Wisconsin

Bad-News Badgers?

When I was a student at the UW (1964–68), the Badgers went, I believe, 3–37 in football. After more than a 50-year absence, my old roommate and I decided to travel to Madison, from New York City and San Diego respectively, to attend the game vs. Illinois on October 1. To say the least, it was not one of the Badgers' better performances and, lo and behold, Coach Chryst was released the next day [On Campus, Winter 2022]. Apparently, the roomie and I are carriers of some bad juju. Badger fans: we promise to not attend any more games!
Howard Labow '68
San Diego, California

Of Vinyl, CDs, and Downloads

[In response to Exhibition, "She Loves U-Rah-Rah (Rah)," Winter 2022, about the UW's new collection of Beatles memorabilia]: Liner notes and cover art are not "unique attributes of vinyl." CDs often have liner notes and always have cover art. Even downloads generally come with cover art — and it's been a lost opportunity not to include extensive notes and artwork alongside downloads in the form of PDFs that vinyl can't hope to compare with, since the size of notes and artwork is not limited by a physical format.
Jeff Norman '84
Milwaukee

Online

NEXT-GEN HOME PAGE

In conjunction with our Future Issue, *On Wisconsin*'s website has stepped up to the next level with a home page redesign. Check out our new and improved format for stories, photos, videos, treasures from our archives, and web-only features that will make UW–Madison come to life on your screen.

BACK TO THE FUTURIST

In 2007, *On Wisconsin* interviewed several alumni who made their living speaking and writing about future trends. For this theme issue on the future, we returned to one of them 16 years later to see how many of his predictions have come true.

COLOR THE FUTURE

Like our illustration of the future campus on page 34? Print out your own version on our website.

See onwisconsin.uwalumni.com.

OnWisconsin

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DANIELLE LAMBERSON PHILIPP

A Great Leap Forward

The Future Issue shows how UW–Madison will change the world while also transforming itself.

On Wisconsin loves Badger history and traditions. At the drop of a hat, we will profile alumni from days gone by. We even have a section called Bygone, showcasing vintage subjects and archival images.

So you'd think the occasion of UW–Madison's 175th anniversary would have us looking backward, toward 19th- and 20th-century glories. But … surprise! We've turned the telescope in the opposite direction. The anniversary got us wondering how the university will address the challenges of a rapidly changing world — one that would surely baffle the 17 male students who enrolled in the UW at its founding in 1848. Thus, we give you the Future Issue.

What we offer, in stories throughout the magazine, is cause for hope. "Fixing the Future" describes UW research that's paving the way for a better tomorrow. "Into the Unknown" finds the university transforming its structures and strategies in a brave new era for higher education. "The Truth in Our Genes" delves into the emerging field of social genomics, which promises improvements in treatment and policy-making based on genetic research. And in "How to Have It All," UW experts explain how we can all be happier in times to come.

What would a Future Issue be without a bit of baseless speculation? We look ahead another 175 years in an illustration titled "UW–Madison in the Year 2198." Will there really be escalators on Bascom Hill and airborne food-delivery robots? If these things don't come to pass, we hope later generations of Badgers won't judge us too harshly.

And never fear: even in a forward-looking issue, we've retained our beloved Bygone, which shows how the university faced the future in its architectural plan of 1908. Then, as now, the UW dreamed of solving problems for Wisconsin and the world.

In 2023, those problems are vastly more complex than in 1908, but that doesn't mean they're unsolvable. As ever, UW–Madison has a way of making dreams come true.

DEAN ROBBINS


wisc.edu
WHERE
EDUCATION
PROVIDES
BOTH
ROOTS
AND
WINGS.
CAN'T STOP A BADGER
Beets: UW Carrot, Onion, and Table Beet Breeding Lab, Department of Horticulture. Beats: UW Dancers, Dance Department.

OnCampus

News from UW–Madison

BRYCE RICHTER

Fickell (standing) was one of the splashiest head coaching hires of the past year.

The Future of Wisconsin Football

New head coach Luke Fickell vows to hold the Badgers to championship standards.

One word came up more than any other in **Luke Fickell**'s introductory press conference: championship.

"I'll tell you this at the beginning of every year — we have one objective and one goal. It's to play for a championship," said Fickell, who was hired in November as the 31st head coach in Wisconsin football history.

His track record proves it's not just talk.

Fickell's hiring was announced after a disappointing 6–6 regular season for the Badgers — their worst finish since 2001. The 49-year-old coach is no stranger to turning around a college program. Cincinnati hired the longtime Ohio State assistant in 2016 after a 4–8 season. In his second year, Fickell led the Bearcats to an 11–2 record. In 2021, Cincinnati went undefeated in the regular season and earned a spot in the College Football Playoff, becoming the first team outside of the five major conferences to ever qualify.

Transforming Cincinnati into an unlikely college football powerhouse earned Fickell the consensus National Coach of the Year award two years ago. And that reputation made him one of the splashiest head coaching hires of the past year.

Fickell said he will build on the existing foundation that has made Wisconsin a consistent winner while also adapting to new circumstances. Reforming a stagnated recruiting operation and bolstering the strength-training program will be two of his biggest priorities.

Badger fans can expect a much more dynamic-looking offense. Fickell has brought on **Phil Longo,** an offensive coordinator whose philosophy is rooted in the fast-paced "air raid" system — a dramatic departure from Wisconsin's traditional ground-and-pound style.

Fickell succeeds **Paul Chryst '88** and **Jim Leonhard '06.** Chryst compiled a 67–26 record over eight years as head coach but was fired in October during a three-season slip from Rose Bowl contenders to mediocrity. Leonhard went 4–3 as interim coach and was a finalist for the permanent position.

During the introductory press conference, Athletic Director **Chris McIntosh '04, MS'19** said that he and Fickell share a vision for the program. "We have the same championship-level expectations."

PRESTON SCHMITT '14

ISTOCK

SMALLER FIBERS, HARDER HATS

Developed by UW–Madison engineers, a lightweight, ultra-shock-absorbing foam could vastly improve helmets. The new material exhibits 18 times higher specific energy absorption than the foam currently used in U.S. military-combat helmet liners, as well as having much greater strength and stiffness, which could allow it to provide improved impact protection.

Physical forces from an impact can inflict trauma in the brain, causing a concussion. But helmet materials that are better at absorbing and dissipating this kinetic energy before it reaches the brain could help mitigate, or even prevent, concussions and other traumatic brain injuries.

The new material has a novel architecture that consists of numerous micrometer-scale cylinder structures, each made of many carbon nanotubes. These structures give the material its extraordinary shock-absorbing properties.

"This new material holds tremendous potential for energy absorption and thus impact mitigation, which in turn should significantly lower the likelihood of brain injury," says engineering professor **Ramathasan Thevamaran,** who led the research.

ADAM MALECEK '04

UW ARCHIVES

Our Past Futures

In 1908, the UW also had big plans for its future. Not all of those plans came to pass.

If you don't recognize the lighthouse dominating the shore of Lake Mendota, don't worry: it's probably just because you live in the real world. That lighthouse was quite prominent, however, in the fantasy of **Arthur Peabody.**

Peabody was the UW's official architect from 1905 to 1915, and he was Wisconsin's state architect from 1915 to 1938. His legacy is all over the UW campus. Memorial Union is one of his buildings, as is the University Club, the Stock Pavilion, Lathrop Hall, Sterling Hall, the Carillon Tower, the Wisconsin Field House, and three dozen or so buildings and additions.

In 1908, Peabody issued his first campus architectural plan — something like today's master plans — but it did not create such a lasting impact.

The plan was the product of much contemplation and research. Peabody traveled to the East Coast to look at America's most prestigious college campuses.

He based his work on the principles of the then-popular City Beautiful movement, which leaned on neoclassical and Beaux-Arts architecture and emphasized order and harmony. His plan attempted to project the university's future growth.

The result was Peabody's vision for lower campus — the area around the lakeshore and what we call Library Mall today. He liked that vision so much that he still held to it in 1926, when in the role of state architect he created the axonometric drawing you see above.

Peabody was into symmetry in those days: very City Beautiful. Twin domed towers bracket the east entrance to a quad, and sizable edifices set a base to Bascom Hill, on either side of an obelisk of some sort. Music Hall and Science Hall are tucked away in the hazy background.

A trolley line runs along what's now University Avenue, with a connection down Lake Street to State Street. That jog in the trolley line was important: it was meant to protect student pedestrians from motorized traffic. In those days, UW leaders could not imagine why UW students would ever have to venture south of University Avenue.

Curiously, the plan does not include the Armory and Gymnasium (the Red Gym), which was then relatively new: it had opened in 1894, and a little over a decade later, Peabody wanted to imagine it away.

Many modes of transportation, no cars: an early campus architectural plan envisioned a lighthouse on the north side of campus and trolleys bordering the south.

But the most notable imaginary structure is the lighthouse guiding vessels to port on the UW's north shore. Instead of the Union Terrace, we have a lighthouse, pavilion, and marina, none of which ever came to be.

This is just one of many imaginary UW–Madisons. In the 115 years since this plan was published, the university has issued more master plans.

A plan issued in 1947 would have given the Terrace a sea wall and added a domed auditorium where Vilas Hall now stands. It would have dumped the Red Gym and replaced it with a Center for Applied Research. One of that plan's most notable surviving elements is the Hagenah Fountain on Library Mall. A 1959 plan would have built an 11-story administration building where Humanities is today. It would also have removed the Red Gym and replaced it with a guest house.

Each plan focused, in the words of 1960s state architect Karel Yasko, on "the big concept, not the details." But the details kept undoing the concepts.

Today's campus is a mix of many different visions and architectural styles: City Beautiful, neoclassical, neogothic, brutilitarian. UW–Madison may lack the symmetry and unity of Peabody's plan, but it's home.

JOHN ALLEN

HARVARD BIODESIGN LAB (2)

A Wearable Sensor to Help You Move

Exosuits are wearable devices that could help people rehab from an injury or even give them extra oomph if they're carrying something heavy. Exosuits elicit a specific change in the wearer's biomechanics — for example, a robotic device worn on a person's ankle can be programmed to pull at just the right time during walking to potentially offload the calf muscles and Achilles tendon.

Until recently, creating the desired effect on an individual wearer has been challenging. There hasn't been a good way to directly measure the changes in loading on muscle and tendon tissue that occur when a person uses an exosuit. But a team of researchers from UW–Madison and Harvard University has solved that problem, employing a unique wearable sensor called a shear wave tensiometer.

Developed by UW–Madison engineers, the noninvasive device is easily mounted on the skin over a tendon. The tensiometer enables researchers to directly assess tendon force by looking at how the vibrational characteristics of the tendon change when it undergoes loading, as it does during movement.

The research team performed rigorous biomechanical experiments with the tensiometer in the lab as well as outdoors to demonstrate real-world viability.

"If you want to send these devices home with people, or if a person wants to buy one for personal use, then understanding how the exosuit performs in those environments is really important," says **Dylan Schmitz MS'19, PhDx'23,** a UW–Madison mechanical engineering student.

The researchers' findings underscore the importance of customizing an exosuit to its user so that it can be more useful in real environments.

"Different people are going to react to an exosuit in different ways, so we can't assume that there is a one-size-fits-all exosuit controller that is going to work for everyone," Schmitz says. "Our tensiometer can be used as a powerful tool for tuning exosuit controllers to work effectively for individual users in different environments."

ADAM MALECEK '04

UW ATHLETICS

After 2021's national championship, the UW volleyball team topped the Big Ten for the fourth year in a row, notching a 19–1 record in conference matches. The Badgers fell to Pittsburgh in the NCAA tournament's quarterfinal but went out with heads held high. "It was two teams that just laid it all out on the court and battled," said Coach Kelly Sheffield.

For the 2021 fiscal year, UW–Madison held steady at eighth in the national research rankings for public and private universities. Despite the pandemic, the university increased its annual research expenditures by $16.1 million over the previous year. The total expenditure was more than $1.38 billion across all fields, about half of which came from federal awards.

JOEL HALLBERG

In December, Miss Wisconsin Grace Stanke x'23 became the first nuclear engineer to compete in the Miss America pageant — and the first to win. Before earning the tiara, Stanke participated in UW–Madison's world-renowned nuclear fusion research program. She hopes to inspire girls to pursue STEM careers.

Urban Upgrade

Professor Edna Ely-Ledesma draws up a realistic blueprint of a futuristic city.

Nothing about the future is certain, but if the otherworldly settings of science fiction are any indication, we seem to have a clear concept of our future cities: sleek finishes, luminous thoroughfares, and architectural resistance to sharp corners and defined edges.

When teaching tomorrow's urban planners and architects, **Edna Ely-Ledesma** is less concerned with ethereal aesthetics than she is with how these cities will protect and provide for their ever-changing populations. Ely-Ledesma is an assistant professor in the UW Department of Planning and Landscape Architecture and the director of the Kaufman Lab for the Study and Design of Food Systems and Marketplaces.

Her work considers cities both as collections of structures governed by policy and zoning and as dynamic, evolving environments. Our cities are long overdue for an upgrade, Ely-Ledesma says, and the choices we make about their future can have global implications.

The pandemic revealed new ways to repurpose city spaces. How can we incorporate this into urban design?
Thinking about adaptability is the most sustainable thing we can do. I preach to my students about how we need to be thinking differently about parking. So much of our cities is constrained by parking standards, and a lot of what we're living with today is building stock that was built 50 to 100 years ago. What if I tell my students, "You should be building something that you have no idea what it might be in 50 or 100 years"? A parking deck could be a parking deck today, but maybe in 50 years that parking deck could be retrofitted to be office space. The other thing to think about is the environmental impact of demolishing a building. We need to be smarter about thinking about, once we build something on this planet, how do we live with it?

What is "sustainability" in the context of cities?
The important distinction between thinking about sustainability as it was first framed in the 1990s — "let's just put some solar panels and a nice park in" — and what we're seeing now is that we are living in a tortured environmental crisis. These environmental impacts that come with a natural disaster are now more frequent, and the most environmentally vulnerable areas of our cities are where we have put communities of color — the areas underlined with racial segregation and racist planning strategies.

We should be building our cities with infrastructure that has the capacity to absorb an extreme flooding event with rainwater harvesting and bioswales [stormwater runoff channels]. We should think about planting more trees with the idea that our own ground could absorb the shock and tension of something like Hurricane Harvey. That's where sustainability needs to be: managing the crises that will impact the most vulnerable communities.

What is the future of our cities as they stand today?
We are basically going to keep having to patch up our cities, crisis after crisis, wildfire after wildfire, hurricane after hurricane, and we can't afford to do that. In addition to that, we're living in a society with aging infrastructure. Our rail systems, our highways, our roads, our housing stock all need to be upgraded. It's really about waking up and realizing that a lot of change has to happen, but if that change is driven by greed and economics, then inequality will be perpetuated, and I hope that's not the future of our cities. We need to be thinking about that change being equitable and supportive of all communities.

You've talked about a "smart, green, and just 21st-century city." What does this look like?
It's the idea that we should be thinking strategically about flexibility in how we build our homes, how we design our streets, how we plan for our cities. That's what being *smart* is: thinking more holistically and flexibly. *Green* is this notion of how we can be sustainable in a way that is equitable. Being a *just* city allows for opportunities for a business to thrive, whether it's Google bringing in big-tech money or it's your grandma trying to keep her bakery going that she's had in the corner shop for 20 years. It's the fact that small businesses should have the same kind of access to opportunities as the big players.

What can we realistically hope for in a futuristic city?
Smart mobility is an important component of a future city. We need to be thinking about transportation in a more equitable way. The future of cities is really being more efficient in general.

I would also hope that we are moving away from this hyperpolarization. Part of the reason we are so polarized is because we have stopped talking to one another. We stopped listening to our neighbors. We stopped having conversations. We stopped going to the grocery store. We get everything delivered at home. Technology is great because it can save us time, but we stopped doing the things that I think make our cities great. Being exposed to other people's ideas is fundamentally why and how we can coexist, so I hope that the future of cities is one that brings us back to socializing and connecting on a human level.

Futurists think technology is our savior. I don't think it is. It's a utility that helps us be more efficient. Let's use technology to deal with energy and transit and movement of goods and services, but when it comes to our identities and how we're going to survive as a society, we need to put our phones down.

By Megan Provost '20
Photo by Bryce Richter

Ely-Ledesma encourages her students to prioritize sustainability in urban design.

DANIELLE LAWRY

GUT BACTERIA KEY IN COCAINE ADDICTION

A UW research study in mice has shed light on the biochemistry of cocaine addiction and suggested a possible way to keep humans from getting hooked.

Cocaine disrupts the balance of microbes in the guts of mice. It increases levels of a hormone called norepinephrine in their intestines, and this triggers an increase in proteobacteria, a family of microbes that includes the common and sometimes harmful *E. coli*.

"All this colonizing *E. coli* needs nitrogen to grow, and their preferred food is glycine, an amino acid [containing nitrogen] that works in the brain as a neurotransmitter," says **Vanessa Sperandio,** professor and chair of medical microbiology and immunology in UW–Madison's School of Medicine and Public Health and a coauthor on the study. "So, an overgrowth of *E. coli* causes glycine levels to go down around the body."

The researchers administered cocaine to a group of mice infected with proteobacteria and found that they experienced more cocaine-seeking behavior than mice without the proteobacteria in their guts. They then infected another group of mice with a strain of *E. coli* lacking genes that allow the bacteria to eat glycine. When those mice encountered cocaine, they were less affected by the drug.

"Prevent the glycine depletion," says Sperandio, "and the mice don't respond to the cocaine by trying to get more and more." She adds that more research is needed, but that something as simple as supplementing with glycine in humans could help alleviate cocaine addiction.

CHRIS BARNCARD

JEFF MILLER

Thank You, Miniature Pigs

Cells from miniature pigs are paving the way for improved stem cell therapies.

A team led by **Wan-Ju Li** of the UW Stem Cell & Regenerative Medicine Center offers ways to create a particularly valuable type of stem cell in pigs. These cells could speed the way to treatments that restore damaged tissues for conditions from osteoarthritis to heart disease in human patients.

In a study published in *Scientific Reports*, Li's team also provides insights into the reprogramming process that turns cells from one part of the body into pluripotent stem cells, a type of building-block cell that can transform into any type of tissue. Pluripotent stem cells are invaluable to medicine since they can be used for the regeneration or repair of damaged tissues.

Li, an associate professor of orthopedics and rehabilitation and biomedical engineering, has spent much of his career studying cartilage and bone generation and developing innovative therapies. Along with members of his Musculoskeletal Biology and Regenerative Medicine Laboratory, he obtained skin cells from the ears of three breeds of miniature pigs. The team reprogrammed the cells to create induced pluripotent stem cells and demonstrated that they have the capacity to become different types of tissue cells.

Findings of this study suggest that the miniature pig is a promising animal model for preclinical research. The team plans to use the established pig model to reproduce its recent findings of cartilage regeneration in rats. Regenerating cartilage in animals that are alike to humans moves science one step closer to helping patients experiencing joint diseases such as osteoarthritis.

The approach can be applied to regenerative therapies targeting any organ or tissue. "I want to make sure that our findings in stem cell research can be used to help people," Li says.

REBEKAH MCBRIDE '11

CIMMS

Wildfire Detection Satellite

As temperatures climbed across the globe last summer, the frequency of heat-related natural disasters such as wildfires climbed as well. To get to these fires quickly and prevent further destruction, NASA's Fire Information for Resource Management System distributes near-real-time satellite data about active blazes. Globally, data arrive at the ground in around three hours; however, in the United States and Canada, thanks to the UW Space Science and Engineering Center's (SSEC) new software, ultra-real-time information is now available in under a minute.

In 2018, **Liam Gumley MS'90,** distinguished scientist at SSEC, issued a challenge to his team: how can we receive information within 60 seconds of the satellite observing a fire? "We're very familiar with the technology and hardware that are on the satellite. And we're also very familiar with the processing software that's used to analyze the data," says Gumley. "When we looked at that chain, we thought, 'You know what? There's really no reason we couldn't be receiving, decoding, and processing continuously as the satellite's flying overhead.' "

With internal funding and additional funds from NASA, Gumley, software engineers **Steve Dutcher '00** and **Bruce Flynn '06,** and the rest of the team built the software and an optimized workflow.

As a satellite orbits, onboard imaging sensors detect heat on the earth's surface and transmit data to ground stations across North America in ultra-real time. The software takes this data from multiple antennae, merges it, and removes duplicates in one streamlined process, allowing not only for speed but also reliable and usable information.

Gumley envisions further optimization for tactical use in fire prevention as well as increasing capabilities for remote satellite stations globally.

"SSEC is known worldwide as the birthplace of satellite meteorology," Gumley says. "There's a precedent for doing something with international cooperation, and sharing the data across borders, especially in [situations] where life and property are at risk."

HAYDEN LAMPHERE

STOP COUNTING CUPS

A new study reveals a wide range in the amount of water people consume around the globe and over their lifespans, definitively countering the oft-repeated idea that eight eight-ounce glasses meet the human body's daily needs.

"The science has never supported the old eight-glasses thing as an appropriate guideline," says **Dale Schoeller,** UW professor emeritus of nutritional sciences. "But this work is the best we've done so far to measure how much water people actually consume on a daily basis — the turnover of water into and out of the body — and the major factors that drive water turnover."

The study measured the water turnover of more than 5,600 people from 26 countries, from eight days to 96 years old, and found daily averages in a range between one and six liters per day.

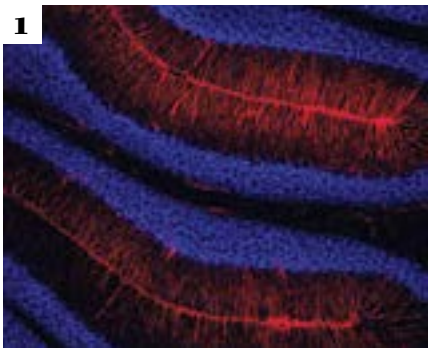
More than 90 researchers at multiple institutions took part in the study, which objectively measured the time it took water to move through the bodies of participants by following "labeled water." Subjects drank a measured amount of water containing trackable hydrogen and oxygen isotopes. In the 1980s, Schoeller's UW–Madison lab was the first to apply the labeled-water method.

The measurements will improve our ability to predict more specific and accurate future water needs, especially in dire circumstances.

"Look at what's going on in Florida right now, or in Mississippi — where entire regions have been exposed by a calamity to water shortages," Schoeller says. "The better we understand how much they need, the better prepared we are to respond in an emergency."

CHRIS BARNCARD

CHRISTINE KNORR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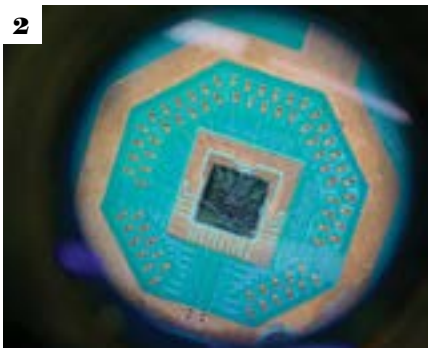
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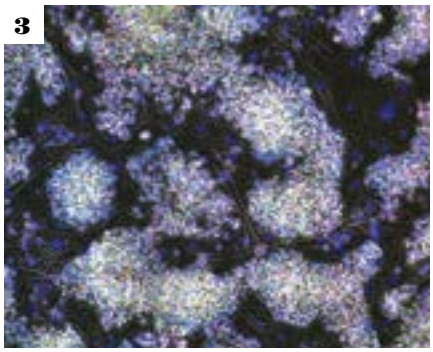
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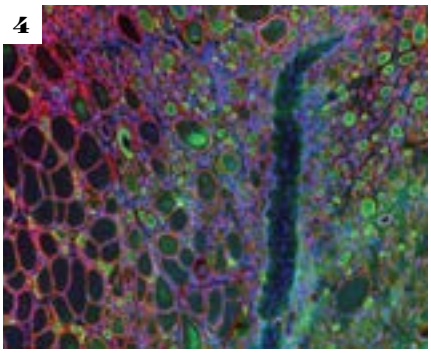
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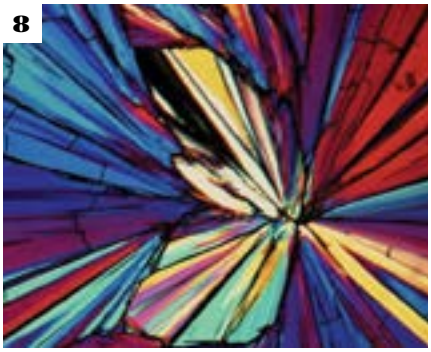
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Induced Wonder

Science borders on science fiction in a collection of prize-winning images.

UW–Madison's annual Cool Science Image Contest, now in its 12th year, "recognizes the technical and creative skills required to capture and create images, videos, and other media that capably reveal something about science or nature while also leaving an impression with their beauty or ability to induce wonder." Last fall, a panel of eight judges from across the arts and sciences selected winners based on the "aesthetic, creative, and scientific qualities" of the entries, which included paintings, textiles, still images, and videos. Winning selections were exhibited at the McPherson Eye Research Institute's Mandelbaum and Albert Family Vision Gallery and online across UW–Madison platforms.

HAYDEN LAMPHERE

In 2011, a UW–Madison science communication website called The Why Files held a Cool Science Image Contest. The contest has continued every year since.

1: Mouse brain cells, **Karolina Lungova '21,** neuroscience, and **Darcie Moore,** neuroscience
2: Microchip, **Benjamin Harpt MA'20, PhDx'24,** physics
3: Rhesus macaque monkey stem cells, **Julia Gambardella PhDx'24, John Maufort '03, PhD'10,** and **Marina Emborg,** the Wisconsin National Primate Research Center
4: Mouse leg muscle, **Jamie Hibbert,** comparative biosciences
5: Quadrilateral quilt, **Amy Wendt,** electrical and computer engineering
6: *Pseudomonas aeruginosa,* **William Heelan DPM'21, PhDx'24, Amy Banta PhD'13,** and **Jason Peters PhD'12,** pharmacy, and **Ryan Ward MS'21, PhDx'24,** genetics
7: Milky Way, **Yingshun Sun MSx'23,** atmospheric and oceanic sciences
8: Crystals, **Amy Neusaenger MSx'24,** pharmacy
9: Cows, **Conor Holohan,** animal and dairy sciences

BRYCE RICHTER

A Record-Breaking Class

Last fall's freshman class of 8,628 was the largest in UW–Madison's history, up 1.9 percent over 2021's class of 8,465. The university did not set out to break this record — it offered admission to almost 3,000 fewer freshman applicants than the prior year. However, of those admitted, a greater percentage chose to attend UW–Madison.

The incoming freshmen were selected from a record 60,260 applicants. Total campus enrollment is a record 49,886, up 4.1 percent from 2021.

"We are continuing to see an increase in demand for an education at UW–Madison, which is a testament to the outstanding education and student experience offered here," says Provost **Karl Scholz.**

The freshman class is the most racially and ethnically diverse in the university's history. There are 1,431 underrepresented students of color, up from 1,251 in 2021; and 2,695 in the broader category of all students of color, up from 2,133. Both numbers are record highs.

The number of graduate and professional students on campus last fall was 12,651, up from 12,458 the year before.

"I had a really good experience getting my master's degree here," says **John Baron MS'20, PhDx'27,** who is back on campus pursuing a doctorate in kinesiology. "UW–Madison has such a strong reputation as a high-powered research university. A degree of any sort from here carries a lot of respect and weight."

DOUG ERICKSON

63.9%

The UW women's basketball team set a program record in November when they made nearly two-thirds of their shots in a game against Bradley. The Badgers won 103–49, the program's largest margin of victory in 40 years.

DANIELLE LAWRY

HOPE FOR FAILING EYES

Retinal cells grown from stem cells can reach out and connect with neighbors, according to a new UW study, completing a "handshake" that may show the cells are ready for trials in humans with degenerative eye disorders.

More than a decade ago, UW–Madison researchers developed a way to grow organized clusters of cells, called organoids, that resemble the retina, the light-sensitive tissue at the back of the eye. They coaxed human skin cells reprogrammed to act as stem cells to develop into layers of several types of retinal cells that sense light and ultimately transmit what we see to the brain.

"We wanted to use the cells from those organoids as replacement parts for the same types of cells that have been lost in the course of retinal diseases," says UW ophthalmology professor **David Gamm.**

Gamm and UW–Madison collaborators showed that dish-grown retinal cells called photoreceptors respond like those in a healthy retina to different wavelengths and intensities of light. Once they are separated from adjacent cells in their organoid, they can reach out toward new neighbors with biological cords called axons and create the connections called synapses that allow the cells to process sensory information.

"We've been quilting this story together in the lab, one piece at a time, to build confidence that we're headed in the right direction," says Gamm, who patented the organoids and cofounded Opsis Therapeutics, which is adapting technology based on the UW–Madison discoveries to treat human eye disorders. "It's all leading, ultimately, to human clinical trials, which are the clear next step."

CHRIS BARNCARD

KEEGAN M. KUEHNE

Artwork That Explains Itself

You can appreciate *Landscape of Discovery* at a distance, but you'll learn more if you get close enough to scan the QR codes embedded in the imagery. They take you to a website with information about both the famous and the underrecognized scientists pictured in the UW Discovery Building's bold new mural. Created through the UW's Science to Street Art initiative, *Landscape of Discovery* is a collaboration between scientists and artists and reflects the Discovery Building's focus on cutting-edge, interdisciplinary work.

"What will our preeminent scholars achieve in the future? Perhaps they will discover an effective treatment for Alzheimer's or safely pursue xenotransplantation. They will certainly create works of art and scholarship that transform how we see ourselves and our world. And amid whatever change comes, some core aspects of who we are as a university can and should endure: we will work together across disciplines to tackle important problems and contribute to human flourishing; we will support talented young people on their paths toward meaningful and satisfying lives; and we will pursue that 'fearless sifting and winnowing by which alone the truth can be found.'"

— **Jennifer L. Mnookin,** UW–Madison chancellor

JOHN D. AND CATHERINE T. MACARTHUR FOUNDATION

A GENIUS IN OUR MIDST

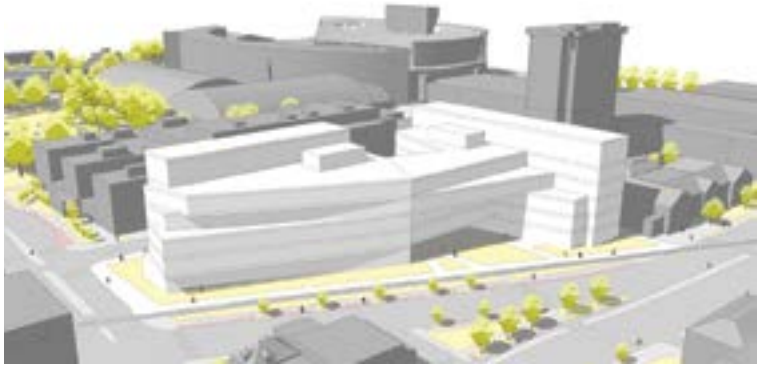
UW history professor **Monica Kim** was awarded a 2022 MacArthur Fellowship, also known as a "genius grant." Fellows are selected for their exceptional creativity and future promise.

Kim examines the dynamics between U.S. empire, race, and decolonization by tracking the changes in warfare over the course of the 20th century. She analyzes the "wars of intervention" undertaken by the United States during the Cold War — in particular, the Korean War. By examining the experiences of ordinary people caught in the machinery of war, she complicates official, top-down versions of the conflict and proposes fresh ways to consider longstanding conflicts simmering around the globe.

Kim's own Korean parents immigrated to the U.S. due to the Korean War. "The war was really present in my family during my childhood," she says. "Yet at school, growing up, it was completely absent from textbooks or discussions. I wanted to do a bottom-up history of the Korean War — not from the vantage points of heads of state and military leaders, but from those of ordinary people like soldiers or farmers, like my family members were."

In addition to Kim, three other winners of 2022 MacArthur genius grants have UW–Madison ties: historical demographer **Steven Ruggles '78; Robin Wall Kimmerer MS'78, PhD'83,** director of the Center for Native Peoples and the Environment at the State University of New York; and **Melanie Matchett Wood,** a former UW mathematics professor.

MARY ELLEN GABRIEL



BALLINGER AND ARO EBERLE ARCHITECTS

Budget Priorities for a World-Class University

A new engineering building. A compensation plan to attract and retain the best faculty and staff. New investment of state funding to boost the university's research and academic excellence. Greater flexibility to pursue building and maintenance projects.

These are among UW–Madison's top budget priorities heading into the new legislative session.

"A strong UW–Madison is a tremendous benefit to Wisconsin, spurring economic growth and providing world-class education and life-changing research that benefits the state and beyond," says **Charles Hoslet JD'89,** vice chancellor for university relations. "We will be working with Governor **Tony Evers '73, MS'76, PhD'86** and legislative leaders to share our priorities and help them understand how they will allow us to do even more for the people and businesses of our state."

The $355.7 million engineering building (pictured above, with $150 million coming from UW gifts and grants) would produce 1,000 more graduates in fields that Wisconsin employers desperately need. New, state-of-the-art engineering facilities would help keep and attract talented faculty members, sustaining the college's top standing in research and graduate education. The engineering building is one of a handful of capital project requests, including expanding and renovating the McClain Athletic Facility, a project that would be paid for entirely by university program revenue and gift funds from donors.

UW–Madison is the only major university unable to borrow money — or issue bonds — for campus construction projects that pay for themselves and that use no state tax dollars. This leads to delays that can cost the university millions. University leaders are requesting a modification to current law that would allow UW System to approve projects funded entirely by revenue generated by campuses. UW System currently has the authority to approve and manage only projects funded entirely through grants and private fundraising.

To keep pace with a competitive labor market and inflation, UW System is requesting a 4 percent pay increase for employees in each year of the biennium. The UW is also requesting a 4 percent increase in its operating budget to maintain educational quality, research excellence, and access. Additional state support would be used to address short- and long-term needs, including investing in high-demand majors and student support.

The legislature will debate and amend the budget bill for the next biennium this spring before sending it to the governor, who will finalize it in July.

GREG BUMP

UW ATHLETICS

In last fall's Bank of America Chicago Marathon, former UW standout Emily Sisson x'14 shattered the North American women's marathon record by 43 seconds with a time of 2:18:29. At the UW, Sisson earned Big Ten Freshman of the Year honors in both cross country and outdoor track.

UW–Madison is moving on up in U.S. News & World Report's rankings of best colleges. For 2022–23, the university is ranked 38th overall (up from 42nd the year before) and 10th among public institutions (up from 14th). "As one of the world's top universities, UW–Madison delivers a high-quality education that provides lifelong value to our students," says Chancellor Jennifer L. Mnookin.

UW ATHLETICS

For the first time, the UW men's and women's basketball teams have moved away from traditional red and white, opting for stylish black in their 2022–23 alternate uniforms. The men's team came up with its own design, which promotes diversity and inclusion with the phrase "Equality, Unity, Wisconsin Forward."

The Game Plan

Three priorities for the future of Badger sports.

The landscape of college athletics has shifted dramatically in the last couple of years. Student-athletes can now profit from the use of their name, image, and likeness (NIL). And they can transfer to play for a new school once without penalty. These NCAA policy changes have added an entirely new dimension to recruiting and retention.

That's the *now*. What does the future hold?

No one is sure. But for Athletic Director **Chris McIntosh '04, MS'19,** the key to success at Wisconsin will always be this simple: adapt to the changes but remain true to your values.

Some changes are obvious.

In November, McIntosh hired **Luke Fickell,** the consensus 2021 National Coach of the Year, to lead Badger football into a new era. (See page 11.) But future success is often predicated on a strong foundation — on the quiet work happening off the field and out of sight.

In his own words, McIntosh outlines UW Athletics' three biggest priorities for 2023 and beyond.

Capital Projects

It is essential that we have modern facilities that serve the needs of our student-athletes and staff. It would not be inaccurate to say we have fallen behind some of our peers in terms of facility offerings, and we are working to rectify that situation.

The new south end zone addition in Camp Randall Stadium has been a game changer. We are in the midst of a substantial renovation of several student-athlete services areas in the Kohl Center. And we are working to address the need for a new indoor football training facility to replace the 35-year-old McClain Center.

Support for Name, Image, and Likeness

Since July 1, 2021, college student-athletes have been able to profit from the use of their own NIL. This is a quickly evolving space in college athletics, and it is important that Badger student-athletes are positioned for success.

We have partnered with various third parties like Opendorse and Altius to serve as resources to our student-athletes, coaches, and staff, and we are supportive of the Varsity Collective, which has been established by a group of UW supporters to help our student-athletes maximize [the value of] their NIL through education, support, and partnerships with community organizations.

Well-Being of Student-Athletes and Staff

This will always be at the forefront for UW Athletics. We are committed to the holistic wellness and support of our students.

We have placed a high priority on mental health support by increasing our staffing and programming. We have six in-house licensed mental health professionals and nine licensed community providers. These individuals have diverse backgrounds and skill sets.

Our clinical and sports psychology unit takes a team approach to student-athlete well-being, and our partnerships with sports medicine, UW Hospital and Clinics, and University Health Services allow us to deliver care for student-athletes that is comprehensive and personalized.

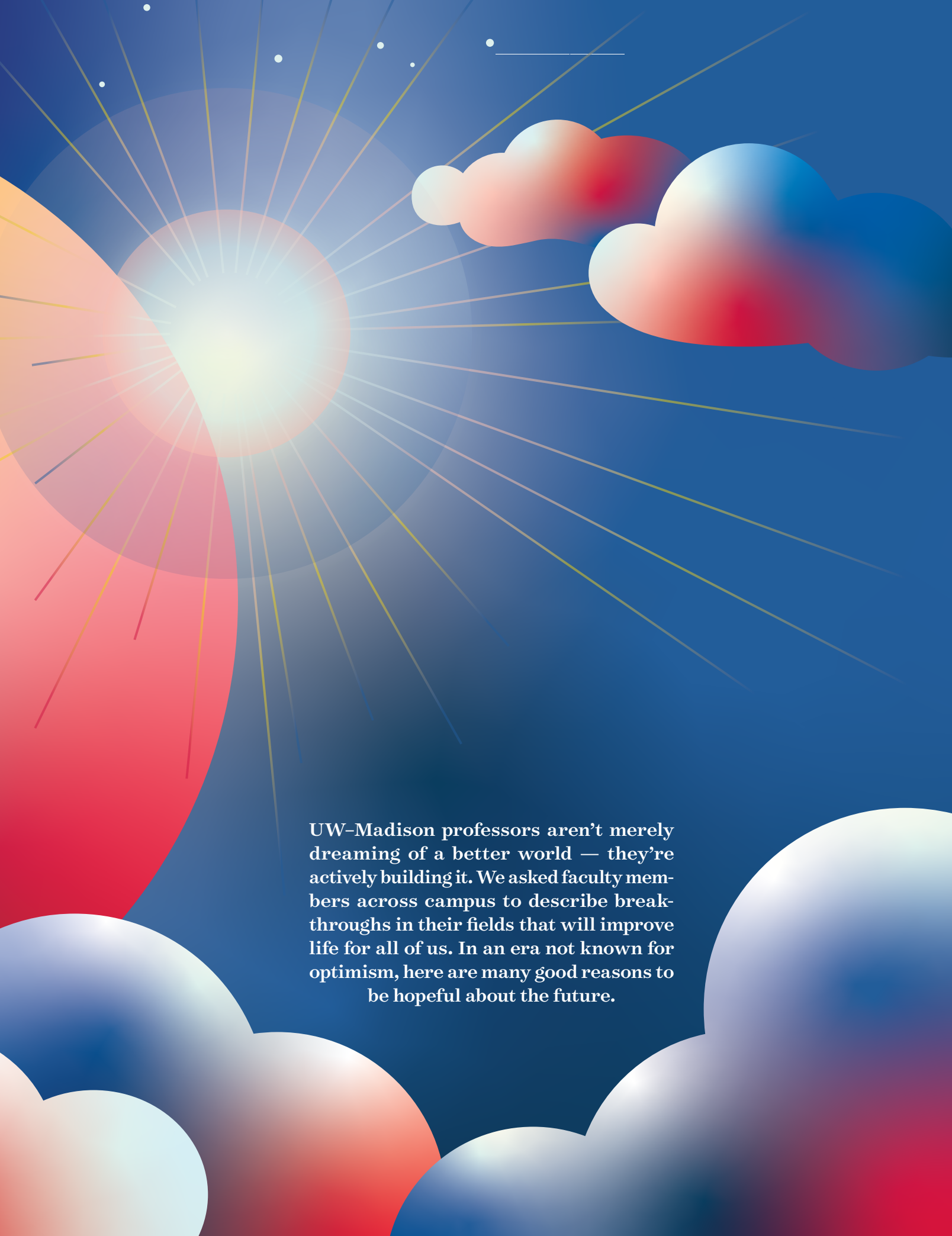
PRESTON SCHMITT '14
PHOTO BY BRYCE RICHTER

The key to success, according to Athletic Director Chris McIntosh: adapt to the changes but remain true to your values.

Fixing the Future

UW researchers offer reasons for hope.

ILLUSTRATIONS BY DANIELLE LAMBERSON PHILIPP



UW–Madison professors aren't merely dreaming of a better world — they're actively building it. We asked faculty members across campus to describe breakthroughs in their fields that will improve life for all of us. In an era not known for optimism, here are many good reasons to be hopeful about the future.

A Solution for Infant Health Disparities

Racial disparities in infant health are a long-standing challenge that has proven incredibly difficult to solve. Wisconsin, for example, has the highest Black infant mortality rates in the United States. While many prior interventions have focused on health care, the evidence suggests that the social determinants of health, such as poverty, may be far more important factors in driving these inequalities.

The Expecting Justice collaborative has taken a novel approach to this problem: a guaranteed-income pilot study giving 150 pregnant Black and Pacific Islander people living in San Francisco $1,000 monthly stipends during and after pregnancy. The hope is that the no-strings-attached funds will reduce financial stressors and in turn reduce poor infant health outcomes such as preterm birth.

Researchers from the University of California–Berkeley/San Francisco are collaborating with Expecting Justice to evaluate the program's effects on health and well-being. If unconditional cash transfer programs like this can move the needle on infant health disparities, it will help make the case for replicating them elsewhere — perhaps even here in Wisconsin.

Tiffany Green, Departments of Population Health Sciences and Obstetrics and Gynecology

The Healing Power of Restorative Justice

Our criminal-justice system contains imperfections. Among the cruelest is its indifference to the long-term trauma that victims experience. Our system, obsessed with incarceration and retribution, cares little about making anyone whole. A growing number of legal scholars want to change this. These innovators facilitate meaningful dialogues between victims of crimes and the people who have wronged them, one technique in the transformative field known as restorative justice. These victim-initiated conversations are completely voluntary; either the victim or the responsible party can withdraw at any time.

Jonathan Scharrer '05, director of the Restorative Justice Project at UW Law School, is a thought leader in this field. He and his team of students facilitate these complex, victim-focused dialogues in crimes as serious as sexual assault and murder, their successes featured on CNN and CBS's *60 Minutes*.

On an individual level, restorative justice both empowers victims and encourages responsible parties to fully understand the harm their actions have caused. Restorative justice, studies show, is particularly successful at deterring first-time young offenders from recidivating. On a larger level, it can reduce incarceration rates and strengthen our communities. Many states have adopted restorative justice practices and policies, a positive step in restoring faith in our nation's imperfect criminal-justice system.

Steven Wright MFA'14, University of Wisconsin Law School

Plants in Space

When considering the future, our imaginations often turn to space exploration with thoughts of moon bases or voyages into the unknown, fueled by the works of science-fiction writers and moviemakers. Many of these dreams are now turning to reality, with astronauts having made the International Space Station their home for more than two decades and plans for an imminent return of humans to the moon.

These are exciting times for space biologists as we try to understand how life reacts to these alien environments and how we might sustain a crew away from the protection of our home planet. On Earth, we rely upon plants to provide the oxygen we breathe and the food we eat, but could our green companions sustain astronauts on these future missions? My colleagues and I are working to understand how plants react to the weightless environment of the International Space Station to answer this very question. Knowledge about how to grow plants in space in turn transfers to improving our ability to grow them on Earth — increasing their flooding resistance or optimizing the controlled environments needed for intensive urban agriculture.

Simon Gilroy, Department of Botany

Social Policy at the Cellular Level

Revolutionary advances in biotechnology have made it relatively inexpensive to collect large amounts of data on what's going on underneath our skin and in our cellular worlds. For example, with epigenomic data, it's now possible to calculate a person's biological age with a high degree of accuracy to see if someone is aging faster or slower biologically than they are chronologically (see page 48).

What makes me hopeful as an economist who studies health inequality is that we can now link information on individuals' cellular worlds with their social worlds. We can see how different life experiences or public policies change people at a cellular level and can therefore begin to understand not only the social mechanisms behind early mortality, but also *when* in the life course people are most sensitive to these exposures biologically. In other words, we can now see what works and what doesn't when it comes to social policy at a cellular level, and we can begin to design policy interventions that target health inequality at its core when it matters the most.

Lauren Schmitz, La Follette School of Public Affairs

The Path toward Zero Emissions

In the past 10 years, the costs of clean energy technologies have declined dramatically, and that is making addressing climate change much more feasible. Wind-power costs have decreased by half, solar panels by 90 percent, and batteries by even more. Wind and solar now produce 10 percent of the world's electricity and are adding 1 to 2 percent every year.

These technologies, combined with pervasive digitalization of the economy, are providing people with new energy services. They also have the potential to do most of the work in reducing the world's greenhouse gases to zero.

Only a few years ago, even optimists would have considered zero emissions unrealistic. Today, two-thirds of the world's polluters have committed to net zero emissions by midcentury. The next step, of course, is making concrete plans for zero — and modeling is showing that these plans are affordable and feasible.

Gregory Nemet, La Follette School of Public Affairs

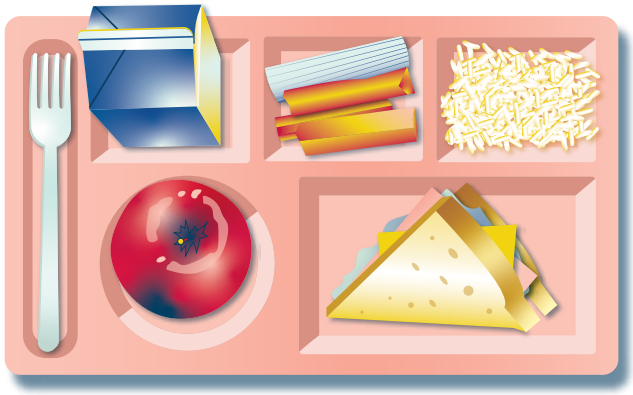
Safer Approaches to Youth Sports

Participation in youth sports has been declining for over a decade, putting the multitude of health and wellness benefits attained through playing sports at risk. Two factors have played a role in this decline: sport specialization and concern over concussions and repetitive brain trauma.

Scientists in the UW's Department of Kinesiology are actively addressing both critical issues. A team of researchers led by Dave Bell has shown that sport specialization is a key factor in athlete burnout, injury risk, and in some cases, an early end to an athlete's career. My colleagues and I are also working to better understand the consequences of brain trauma in sports and the attitudes and beliefs of parents and athletes around the issue at a time when concerns about brain safety are leading many parents to hold their children out of contact sports. We are providing resources with safety recommendations for youth and adolescent athletes to delay specialization, prioritize recovery, properly manage concussions, avoid repetitive brain trauma, and promote age-appropriate sport exposure.

This work promotes a shift in the culture of youth sports to one that encourages safety, variety, and sustainability in both the health of young athletes and the tradition of athletics.

Julie Stamm '09, Department of Kinesiology



Healthy Meals for All

Students and faculty at the School of Human Ecology partner with civil society organizations, policymakers, and community stakeholders in pursuit of greater well-being for people and the environment. What makes me hopeful as an interdisciplinary scholar who studies school food policy and community food systems is the increasing policy momentum for free school meals, local sourcing, and scratch cooking in our nation's schools.

Through her work as chief of staff for Wisconsin state representative Kristina Shelton, for example, Paige Anderson '20, a graduate of our community and nonprofit leadership major, has helped to bring healthy, free school meals to all Wisconsin K–12 students. In 2021, Shelton and others introduced the Wisconsin Healthy School Meals for All Act to enable schools that participate in the federal school breakfast and lunch programs to serve meals free of charge to all students. California, Maine, and Minnesota have already enacted similar programs.

To advance this movement, I'm confident that families, school staff, food-chain workers, social workers, labor leaders, anti-hunger advocates, and other stakeholders will unite as a powerful voice for change.

Jennifer Gaddis, School of Human Ecology

A New Way to Talk and Listen

Toxic political polarization and social divides infect the lives of people in the United States. Many of us feel unheard and unrepresented by our governments. How do we lift up the voices of people who are not heard, and how do we bridge divides? A new platform for conversations is one answer.

I have been working with Cortico, a nonprofit partner of the Center for Constructive Communication at the MIT Media Lab, to help develop the Local Voices Network (LVN). This network brings together people in small-group conversations that are recorded and uploaded to an online interface so participants in the network, journalists, and policymakers can access and learn about public opinion in a new way.

LVN uses the powerful sound of the human voice to inspire reflection and leading technology to disseminate the thoughts that people share. LVN partnered with the cities of Boston and Madison, for example, to input the concerns of people not normally heard into the 2021 Boston mayoral race and the selection of a new Madison police chief.

At a time when social media networks encourage toxicity and provocation, this social-dialogue network is encouraging listening and action informed by real lived experience.

Katherine Cramer '94, Department of Political Science

Social Workers vs. the Opioid Epidemic

The opioid epidemic in the United States has claimed more than 500,000 lives over the past two decades. More recently, the number of opioid-related overdose deaths among minoritized populations has skyrocketed. This segment of the population is also much more likely to experience incarceration due to substance misuse. Most incarcerated opioid users receive inadequate treatment for substance use, and formerly incarcerated individuals are over 14 times as likely as members of the general population to overdose on opioids.

However, screening assessments such as the American Society of Addiction Medicine patient-placement criteria can help identify treatment needs. With adequate training and support, in the hands of social workers, these tools could effectively be used to ensure proper placement in substance-use treatment programs. Access to a wide range of evidence-based and comprehensive addiction screening strategies can combat the current opioid epidemic, and this is particularly crucial for populations at a high risk of overdose and incarceration.

Tawandra Rowell-Cunsolo, Sandra Rosenbaum School of Social Work

Good News for Entrepreneurs

Entrepreneurs and business leaders know that this is an exciting time — opportunities and pitfalls are prevalent. When it comes to entrepreneurship, the last decade has brought great change, and change is continuing. Entrepreneurship is becoming more accessible to more people. It is literally possible for undergraduate students to run businesses with operations spanning time zones and continents. I've seen it. This is good news for entrepreneurs, innovators, companies, and us — their customers. It is also great news for those who are learning to apply innovations in computing, finance, and organization to business.

I and a team of researchers at the Wisconsin Institute for Discovery and the University of Maryland are working closely with leaders in business and academia to harness insights from applied data science to improve student entrepreneurship. Our students and recent alumni are important conduits of ideas and knowledge between the UW and the private sector. Hopefully, our work will help to magnify their impact.

If you have an interest in entrepreneurship and you find yourself planning a trip to our campus, feel free to reach out. We would welcome the opportunity to learn from your experiences.

Jon Eckhardt, Wisconsin Institute for Discovery and Wisconsin School of Business

Smarter Therapeutics to Fight Disease

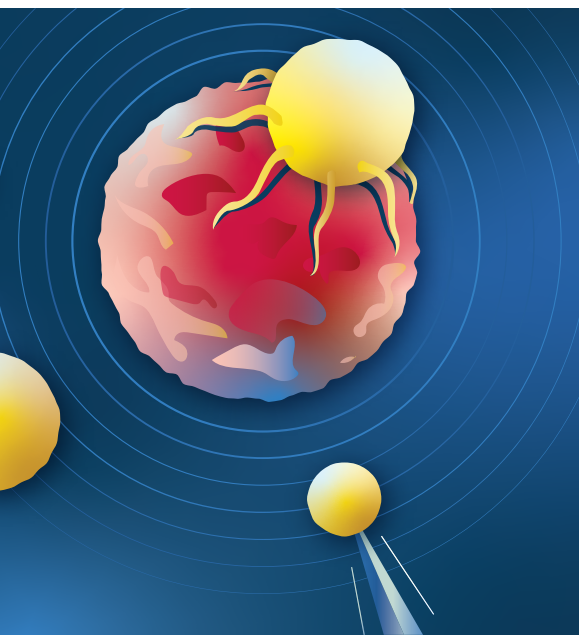
A new era of "programmable" therapies is starting to have a real-world impact in medicine. Traditional drugs and recombinant proteins (like aspirin and monoclonal antibodies) are static entities that bind to protein targets within cells. In contrast, engineered therapeutic cells can dynamically sense and respond to changing pathological conditions in the body.

Informed by sequencing and molecular diagnostics advances, newer biotechnologies over the last decade have leveraged the information content of DNA and RNA to generate a new class of programmable cell/gene therapeutics. These therapeutics can be more precise, to match the needs of individual patients, and smarter, to evolve with the body as the disease progresses.

For example, gene therapies can encode correct copies of pathogenic genes, and cell therapies can harbor genetic circuits that sense and destroy cancer. Similar advances have produced flexible mRNA COVID-19 vaccines that encode evolving antigenic variants.

At UW–Madison, biomedical engineers are coming together with clinicians, computer scientists, and biologists to apply these programmable cell/gene therapy techniques toward the treatment of many diseases, including in the brain (e.g., Alzheimer's disease), blood (e.g., cancer), and eye (e.g., retinal disorders). They are exploiting new CRISPR tools that incorporate synthetic, programmable RNA to enable targeted editing of the genome within many cells of the body.

Krishanu Saha, College of Engineering



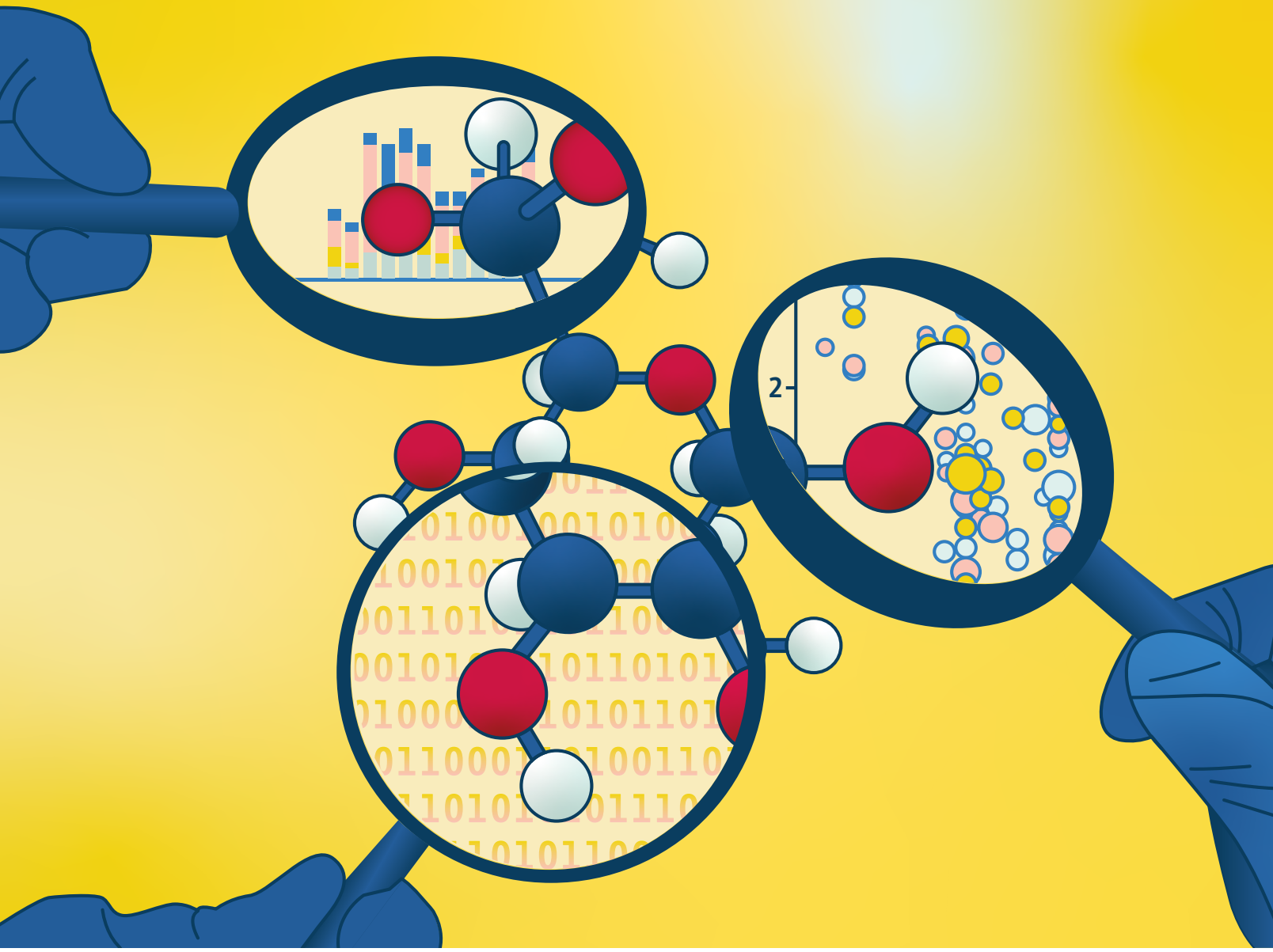
A Camera to See around Corners

Our brains evolved to process vision data, and we have used them to solve our most challenging image-analysis and pattern-recognition problems. Consequently, our cameras, microscopes, and telescopes resemble eyes, so they can create images that our brains analyze.

Our ability to interpret and understand images is one of the few domains where artificial intelligence has only very recently come close to matching our own capabilities. Now, we can finally implement computational algorithms that perform well on many of the image-analysis tasks humans do best.

Our vision evolved to help with climbing trees, finding food, and avoiding predators. While tasks like driving a car are similar enough to these abilities that we can perform them adequately, there are many other tasks, like seeing through fog, detecting cancer or other disease, seeing in the dark, or seeing around corners, that can be done better with completely new computational camera designs that are very different from our own eyes. Future cameras will no longer try to emulate or match human vision, but surpass it, providing powerful new senses for us to exploit.

Andreas Velten, School of Medicine and Public Health



A Many-Dimensional View of Life

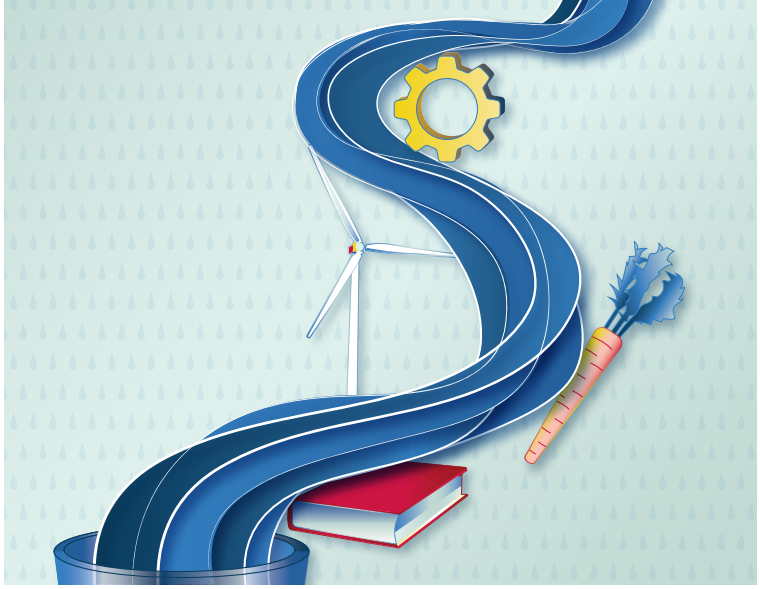
Science has always depended on tools to explore the world around us. First telescopes and microscopes expanded our visual capacity, then spaceships and molecular dissecting kits took explorations to new levels. Today, many secrets of biological systems are revealed by the tools of chemistry and computation that enable a many-dimensional view of life known as "multi-omics."

A new "-omics" field has emerged for each group of molecules of life. Metabolomics, for instance, provides a profile of the entire suite of small molecules, revealing the chemical nature of organisms. The future of biological research will involve making all -omics measurements routine so that they can inform study of every cell, organism, and ecosystem. The complexity of multi-omics data sets will challenge computational fields like machine learning to find meaningful patterns in the data.

In precision medicine, multi-omics profiles of patients will help tailor disease prevention and treatment. One multi-omic profile might indicate that a patient will respond well to a particular drug, and another might suggest that a dietary change could prevent a chronic disease. Multi-omics profiles will help us understand the processes in plants and their microbial associates that determine crop yield or drive carbon balance.

Multi-omics is a team sport requiring integration of biologists, engineers, and computational wizards to tackle life's big questions. And UW–Madison is the place to do that — our readiness to work in teams will enable us to capitalize on our peerless constellation of talent to catapult biology to a new level of insight.

Jo Handelsman PhD'84, Department of Plant Pathology and Wisconsin Institute for Discovery



Managing a Flood-Filled Future

In the wake of increasingly frequent and worsening floods, exacerbated by the impacts of land use and climate change, community members in southwestern Wisconsin are coming together to collectively envision paths forward into what will almost certainly be a more flood-filled future. Wisconsin's Kickapoo River and Coon Creek watersheds have experienced at least one 100-year and two 50-year floods in just over a decade, and climate forecasts predict this trend will worsen. Flooding has devastated small communities across the region, damaging infrastructure, derailing livelihoods, and causing profound and largely unaddressed effects on mental health.

But there is reason for hope. The problem of flooding is bringing together faculty and students from across departments and colleges — from English, agronomy, civil and environmental engineering, the Nelson Institute for Environmental Studies, and beyond — to support community-driven solutions for flood adaptation that recognize and respond to the expertise of local partners. Working alongside nonprofit organizations, county conservation offices, and federal agencies, UW–Madison students and faculty are updating rainfall and flooding models for the region, gathering oral histories from flood-affected residents, interviewing land managers, funneling resources toward community groups, amplifying the work of farmer-led watershed councils, and creating locally adapted tools for engaging this flood-filled future together.

Caroline Gottschalk Druschke MS'21, Department of English and Water@UW–Madison

Making Health Care Systems Work

Sometimes hospital systems cause problems for both older adults and nursing staff. Patients commonly lose their ability to walk on their own during a hospital stay, often because they aren't getting up enough. And stressful work environments and heavy workloads can contribute to turnover and dissatisfaction for nurses.

Along with UW professor Linsey Steege, I formed the Advancing and Leading Innovation in Healthcare through Nursing and Engineering Research lab to redesign health care systems to work for nurses. And when outcomes improve for nurses, they improve for patients and organizations, too. We have also created an intervention that addresses barriers within hospitals that prevent nurses from getting patients up to walk. Results from pilot studies have shown healthier patients and happier nurses.

Barbara King MS'87, PhD'10, School of Nursing

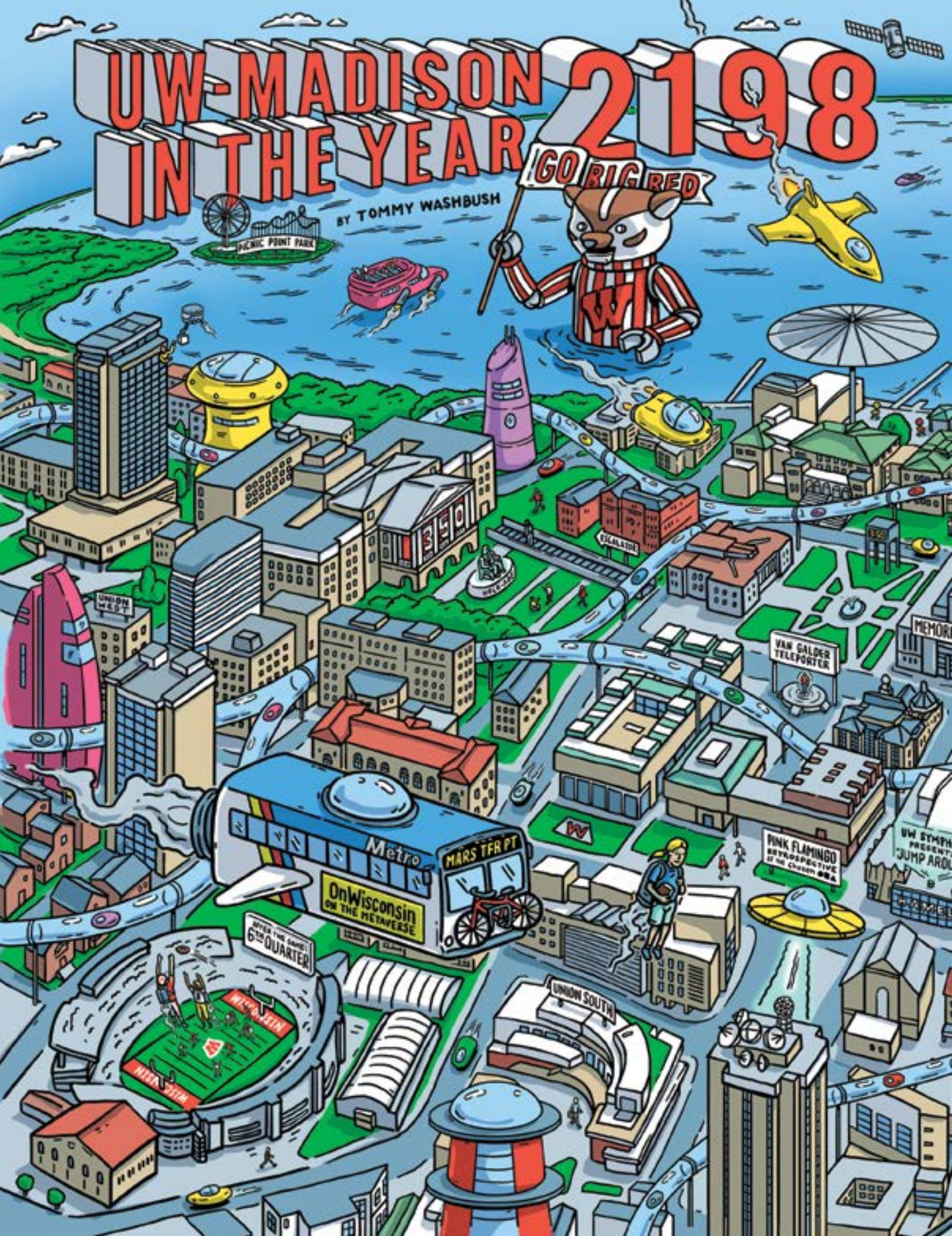
A National Hemp Repository

In the 20th century, Wisconsin became one of the leading hemp-producing states in the nation before the Marijuana Tax Act of 1937 placed a heavy tax on all forms of hemp and brought its production to a halt. Yet the hemp from Wisconsin fields reseeded itself and grew in ditch banks and roadsides for some 70 years. Today, this feral hemp may provide the key resource to fuel the country's newly reestablished hemp industry, brought back to life by the 2018 U.S. Farm Bill.

Hemp, a close cousin of marijuana but with very low THC content, is a crop that can be produced sustainably without the use of synthetic chemicals. Assistant professor Shelby Ellison '06 in the UW Department of Horticulture is bringing hemp back to Wisconsin's farms through an innovative project sponsored by the U.S. Department of Agriculture. Ellison and her colleagues are traveling the country collecting feral hemp from genetically diverse, naturalized populations. Their goal is the creation of a national hemp repository, where seeds can be used by farmers and researchers to reestablish this long-neglected crop.

The seeds they collect, like the benefits of hemp, will be too numerous to count, but they will go a long way toward advancing humanity's interest in sustainable agriculture.

Irwin Goldman PhD'91, Department of Horticulture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UNION SOUTH


SPACE CURDS
ASTRO BRATS
TEAM SHUTTLE
INTERGALACTIC STUDENT HOUSING
KOHL SPACEPORT
HYPER SPEED RAIL
CELEBRATING OUR 236TH YEAR
paul's books

ALTHEA DOTZOUR, BASCOM BY BRYCE RICHTER

"In order for students to be more successful, you have to have cultural intelligence skills."

LaVar Charleston says the UW must prepare grads to live in a global society.

INTO THE UNKNOWN

We wanted to see what UW–Madison would look like in the future, so we went to university experts.

BY JOHN ALLEN

PHOTO ILLUSTRATIONS BY BRYCE RICHTER

When LaVar Charleston MS'07, PhD'10 thinks about the present, his mind turns to his table.

"Sorry," he says as I quickly pull my water bottle back and wait for a coaster. The office in Bascom Hall isn't luxurious — like many spaces in the old, old building, it seems to have been assembled piecemeal: his office and an outer office subdivided from a larger room that had been meant for some other purpose.

"This table's very fragile," he continues. "If you put your glasses down too hard, it scratches. Had I known it was that dainty, I would not have gotten it."

Had I known.

The words hang over this assignment. *On Wisconsin* magazine wants an article that gives a view of the future, and in particular, of UW–Madison's future. But *Had I known* could be the three-word motto of the human race. We're bad at anticipating the future.

When the architect William Tinsley designed Bascom Hall in 1857, the UW regents told him they wanted it to serve as the UW's main building, and it should have rooms for recitation, lecture, library, laboratory, and an astronomical observatory. "In a word," they said, using many more words, "it should be plain, substantial, comfortable, and exactly adapted to the purposes for which it is designed and no other."

Had they known.

The regents had not imagined, in the middle of the 19th century, that the university would ever grow much larger than the 169 students it then hosted. They didn't know that the astronomy equipment would leave for Washburn Observatory in 1878 and the labs for Science Hall in 1875. They didn't guess that what would come to be called Bascom Hall would later host military instruction or a water tower. They couldn't imagine the UW as the institution we see today, with 13 constituent schools and colleges, 49,886 students, and 24,232 faculty and staff, including a person who holds the 26-word title of *deputy vice chancellor for diversity and inclusion, vice provost and chief diversity officer, and Elzie Higginbottom Director of the Division of Diversity, Equity & Educational Achievement*. Bascom Hall, which is certainly substantial but neither plain nor comfortable, serves many purposes other than the ones it was designed for, which is why its ancient rooms have been carved up for offices with the addition of haphazard-seeming interior walls, frequently reconfigured electrical wiring, and the occasional delicate table.

When LaVar Charleston thinks about the future, he — well, we'll get to that. Thinking about the future is easy. Knowing it is hard.

To find out what UW–Madison will be like in the future, I sought out experts in just about every aspect of university life and function. And I found people willing to admit that the future is unclear but who are doing their best to project from current trends.

Had I known how difficult this assignment would be, I might have set that first paragraph somewhere else — not in Bascom Hall, but in Memorial Library. If a university is the sum of what it knows, then librarians are the people to talk to. It's the librarian's job, in the words of Lisa Carter, to acquire, preserve, steward, and distribute information — that is, to know stuff. And Carter should know what librarians do. She's UW–Madison's vice provost for libraries and university librarian.

Her office is in Memorial Library, which opened in 1953 with shelf space for 1.2 million volumes. As the university then owned about 600,000 books, it seemed well prepared for the future. But by 1960, it was already too small, and UW president E. B. Fred griped that operating a modern university with this cramped library was "like trying to run an 80-cow farm with a 20-stall barn." Fred, evidently, was not given to high-tech analogies, even when pondering the future.

I went to Carter not simply because librarians know things, but also because libraries are under considerable pressure to change to keep up with technology. Over the last 20 years, the publishing world has increased the number of books and journals produced digitally, and rather than turning to subject experts, people often go to search engines. Who needs a library when Google can scan the entire internet and when books, journals, magazines, and newspapers from around the world are available to any laptop with access to Wi-Fi?

"That hard copy, the hard magazine, is going

What do students imagine the UW will be like in the future? Find out at onwisconsin.uwalumni.com.

University librarian Lisa Carter sees the demand for digital materials rising, but the UW also continues to add printed books as fast as ever.

away," says Steve Ackerman, UW–Madison's vice chancellor for research and graduate education. "It's been a long time since I got a [paper] journal — it's all online now."

If he only knew.

It's true that the libraries have added a lot of digital material over the past few years, and that trend is likely to continue. But the libraries are also adding physical materials just as fast as ever.

"Humans are eternally ingenious and are continuously creating new ways of storing and sharing information," says Carter. "It's not a zero-sum game. Scholars' demand for print has not been completely replaced by requests for electronic resources."

While there's a greater demand to have access to materials digitally, the libraries have to keep both print and digital materials. "People are still generating books. People are still generating print journals. People are still generating vinyl LPs. New artists are generating physical objects," Carter says. "And it's not always looking forward — people may want access to a book that was printed 500 years ago."

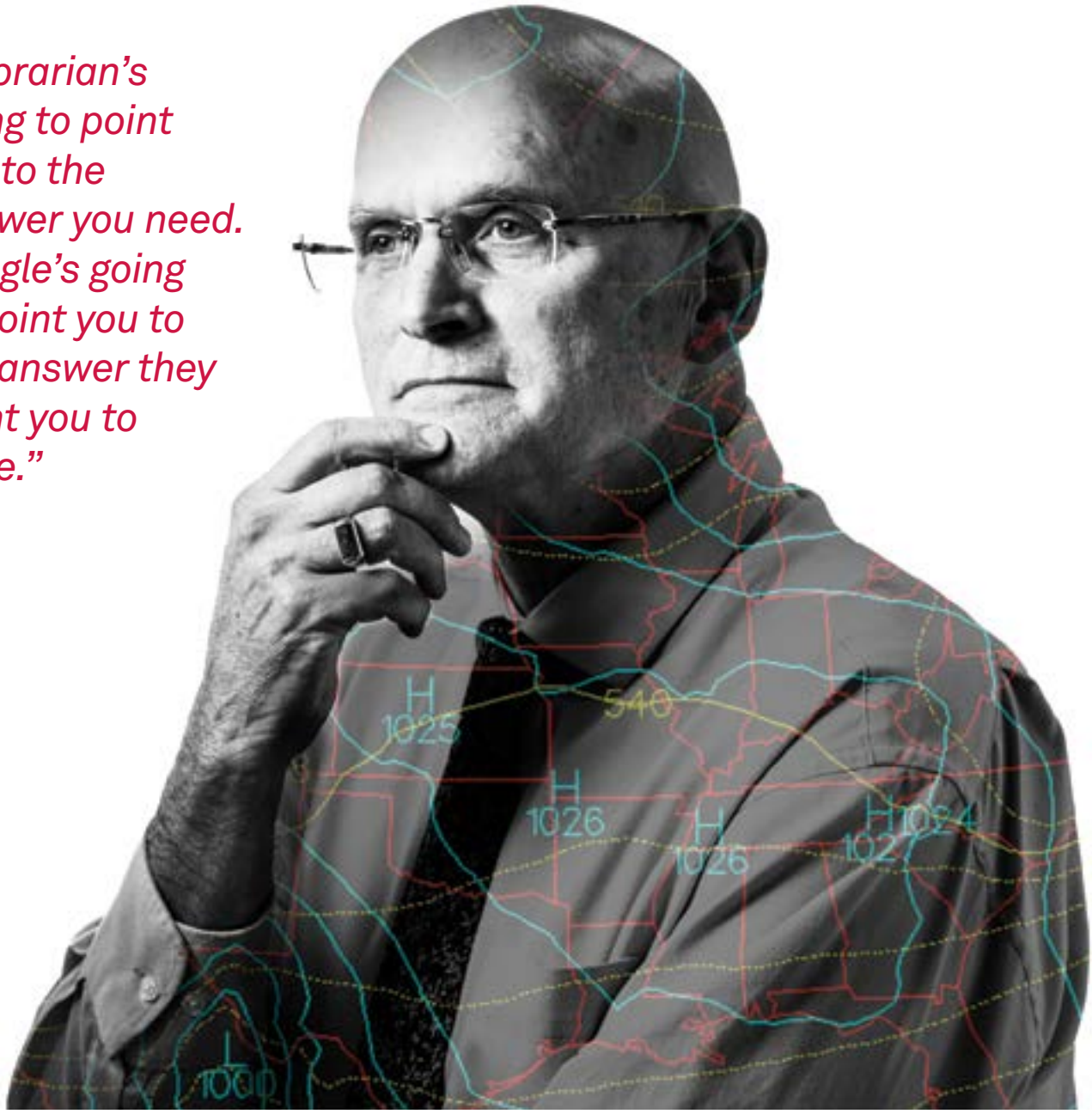
Currently, the UW Libraries boast more than 7.3 million printed volumes and 6.2 million microforms — documents stored on microfilm or microfiche. The libraries have digitized more than a million pages of texts and images and receive 20,000 academic journals digitally.

The soaring demand for digital materials is forcing UW–Madison's libraries to evolve their thinking. For one thing, Carter expects them to increase their connections with other university libraries, both within and outside Wisconsin, essentially giving future UW students access to a super-library. UW–Madison is involved with the HathiTrust, which aims to share digital materials from hundreds of research libraries around the world, including all 14 Big Ten schools. As of last fall, it had collected digital versions of 17.6 million volumes, making 6.1 billion pages available to the UW community.

"The trajectory toward interdependence between libraries and within libraries is going to get stronger," says Carter. "We're going to be even more interdependent upon one another. We are going to see creative uses of new technologies to solve some discovery problems."

As digital demand increases, the libraries of the future will need to balance the ongoing need for physical browsing with the ever-increasing need for multifunctional, flexible spaces. The libraries are not only working to address multifaceted space challenges, but also securing preservation-quality space to ensure proper care for their aging physical materials. Recently, the libraries announced funding for a 38,000-square-foot expansion to their high-density Verona Shelving Facility. The space provides the ability to manage and care

"A librarian's going to point you to the answer you need. Google's going to point you to the answer they want you to have."



BRYCE RICHTER, SATELLITE BY LAB OF STEVE ACKERMAN

for fragile materials and frees up space on campus.

"Some part of Memorial Library is always going to have browsable sections," says Carter. "But there's a lot of space in this building that's not used to its full advantage. And could we unlock some of that to be communal gathering space, spaces where faculty and students come together with librarians to work in groups and bounce ideas off one another?"

For librarians, Carter foresees a role that grows in complexity as they become greater research and teaching partners for faculty and students. "We have to be experts in the old way of doing things as well as emerging forms of knowledge exchange. Because no matter how much information is out there, there will always be things that you can't find digitally."

Had Steve Ackerman known that I'd use his line about digital journals to suggest libraries' obsolescence, he might not have said it. As much as he believes in digital publishing, Ackerman is on the side of the librarians. He does not believe that they can simply be replaced with internet browsers.

"A librarian's going to point you to the answer you need," he says. "Google's going to point you to the answer they want you to have, and that's not how research should be done."

This is why I went to talk to Ackerman. If a university is the sum of what it discovers, then Ackerman is the person to see. Plus, I wanted to find an accurate picture of the future, and he likes good information, not just popular information. Also, he's

Steve Ackerman believes that artificial intelligence will change research by increasing our ability to collect and process data.

a space scientist, which is kind of future-y — though Ackerman does not use spaceships to explore strange new worlds and seek out new life and new civilizations; rather, he uses them to understand our own.

"Wisconsin is the birthplace of weather satellites," he says. "I like to get that message across."

Ackerman came to the UW in 1987 to work at the Cooperative Institute for Meteorological Satellite Studies, or CIMSS. There, he started as a researcher, but after five years of just doing studies, he decided he wanted to teach, and so he joined the faculty in 1992. In 2014, he accepted the role of vice chancellor for research, though had he known what that meant, he might have had second thoughts.

"It's not much teaching," he says, "and that's a disappointment."

Ackerman oversees the UW's present research enterprise, and he's also responsible for planning how it will evolve to support the UW–Madison of the future.

"The interest among humankind is to ask questions and try to get answers to those questions," he says. "We look at the world around us, and make observations, and then try to understand what those observations are coming from. That aspect won't change."

But research capabilities are growing, especially in terms of computer power — and in the ways that computers assist researchers to increase the amount of information they can comprehend. Like Carter, Ackerman sees a world in which there will be an overwhelming amount of data to consider — perhaps too much for the human mind to process on its own.

"One thing we're seeing more and more of," he says, "and I think that this is going to explode, is the application of artificial intelligence to apply to the data that we've collected."

Thirty years ago, when Ackerman was a young scientist, he had a grant from NASA to improve the ability of satellites to detect clouds. But NASA put three conditions on his work: first, it had to produce a process that could analyze data in real time — there's no advantage to predicting the weather after it happens; second, his process couldn't generate more than four gigabytes of data a day, because that would overwhelm the available computers and make condition one impossible; and third, it could not rely on artificial intelligence, because NASA didn't trust AI. Ackerman succeeded at the project, but the last two limitations would seem ridiculous today.

"Now I have a different project from NASA to look at cracks in the Arctic Sea ice, and we're using AI all the time," he says. "It's so much better."

The current project uses satellite images to see how ice near the North Pole breaks up, comparing new images to historic satellite photos to determine climate change's effect on the oceans. "We're trying to look at, over the historic record of the satellites, what's changing about sea ice concentrations," he says. "We're using AI techniques to compare [large volumes of past data]. When you see [fractures] in the ice now, you think, 'Okay, this is really different.' "

In the future, Ackerman believes, researchers will apply AI across a wide range of disciplines — the sciences, humanities, even the arts — to dramatically increase the amount of information they can study. The growth in ability to process data will then lead to a growing appetite to generate data, which will mean more physical infrastructure: wet labs for biological research, high-powered scientific instruments, and outdoor labs for environmental sciences. To support all this, the UW will need to generate and supply increasing amounts of energy.

"We need to upgrade our electrical power for sure," he says. "If there's a blip in the electrical power, then boom, boom, boom, a bunch of stuff shuts down. Some of it doesn't come back up right away, and you damage tens of millions of dollars of instruments, and it takes decades to fix them."

Energy is a leading concern for Cindy Torstveit '91, the university's associate vice chancellor for facilities planning and management (FP&M). If a university is a collection of buildings, grounds, and infrastructure, she's the person who's most responsible for UW–Madison's future.

"Power delivery is changing a lot," she says, "and we're kind of watching that ... looking at where we can become more efficient."

Just over a decade ago, the UW's Charter Street Heating and Cooling Plant used 150,000 tons of coal a year. The university began phasing coal out in 2010 and recently has earned honors for its efforts to become more energy efficient.

"How can we reduce our carbon footprint, meet our sustainability goals — that's really important," says Torstveit. "But also, we have to provide reliability, redundancy, resiliency in our service."

I went to Torstveit to find out what the physical campus of the future would look like, and she believes the UW will turn more to "power diversity," generating energy from more renewable sources. A little over a year ago, FP&M's Office of Sustainability worked with students to study using solar panels to power lights and displays at bus shelters, and the university formed a partnership with Alliant Energy to create a small-scale solar-power-generation facility.

Torstveit sees that kind of diversity — really, flexibility — as the hallmark of the future of campus. She looks at Bascom Hall, with its changing functions and subdivided offices, as one of the UW's great success stories. Reuse and repurpose: those are the keys to survival. "Bascom has evolved over time," she says. "It's still there, and I don't think it's going to go anywhere."

The near future is Torstveit's focus, though with a hope that she'll prepare the UW for a more remote

BRYCE RICHTER, SOLAR PANELS BY JEFF MILLER

"Bascom has evolved over time. It's still there, and I don't think it's going to go anywhere."

Cindy Torstveit and the staff at facilities planning and management are trying to help the UW reduce its carbon footprint.

future. She and her staff are preparing to start work on the next campus long-range plan, to be published in 2025. She intends the university's new facilities to incorporate flexibility, to offset the difficulty of *had we known*.

"We don't have a crystal ball, right?" she says. "We don't know exactly what the future's going to be, and we can't predict it, but we are preparing for it."

To make her point, she cites the pandemic. Until February 2020, the UW did not focus much on video conferencing or online learning. That changed suddenly and unexpectedly in March 2020.

"Now it's very common for us to have video conferences," she says, and as she and I are meeting on Zoom, I concede the point.

But that's now, not the future. Torstveit doesn't foresee UW–Madison becoming a fundamentally virtual university.

"So much about being at the University of Wisconsin is being on campus and that campus culture and how we learn together," she says. "I can say for sure that we will always have a residential student population, because that's who we are."

Matthew Hora PhD'12 thinks that if people knew more about climate change, they would worry less about virtual learning.

"There's definitely [new] technology, artificial intelligence, online learning — that's all there," he says. "It's going to accelerate, and it's going to change how the university functions and operates, especially within the teaching and learning space."

Matthew Hora sees increasing pressure on universities to prove that education prepares students for the working world.

BRYCE RICHTER, CLASSROOM BY ALTHEA DOTZOUR

But climate, he says, "is the big one. We need to be preparing our students across all the disciplines about how climate will be affecting their lives, but we're not."

Hora is an associate professor in the Division of Continuing Studies, and he studies teaching and learning. If you think of a university as fundamentally a teaching institution, then people like Hora have the best view of the future. To be clear: he doesn't see virtual learning as an inevitable future for UW–Madison, and he doesn't necessarily think it's a good thing. During the COVID pandemic, for instance, he studied the effect of virtual learning, especially for internships. "There was a question: does being present really matter?" he says. "It does."

The real change that's coming to teaching, both at the UW and at universities in general, is driven not by technology but by politics and economics: a rising demand that universities prepare students to enter the job market.

"That's part of the critique," Hora says, "that [universities are] not preparing students for the real world, the world of work. Community colleges are, and professional programs like nursing are. That rhetoric, those critiques, they've had a huge impact. Research on employability — how well is higher education preparing students to get a job? — that's international, and it's growing."

But if parents and government leaders knew what the hiring market is really like, they might not be so keen on direct vocational training. Employers want to hire critical thinkers and problem solvers — the very traits that an interdisciplinary, liberal arts education provides.

"Despite all the rhetoric about skills-based hiring, about employers saying they're not going to look at education credentials anymore, they still matter," Hora says. "A four-year degree is the currency of the labor market. It matters, not just the presence of a four-year degree, but where you got it. Maybe employer behaviors will change, but I'm not seeing it."

To better prepare students for the jobs of the future, universities will have to train them to be flexible: not to perform specific skills but rather to have the ability to understand and solve unforeseen problems.

"You're most likely not going to stay in one job your whole life," Hora says. "The world is going to be disruptive, like it has been for the last few years, and things are going to change in ways we don't know. Look at the pandemic. Look at the climate. Things are going to happen, and you're going to have to be ready for that."

Hora knows about unpredictable career change: had he known where his path would take him, who knows what he might have studied as an undergrad? He earned a BA in English from the University of California–Santa Barbara and then became an organic farmer. He went to graduate school for anthropology and then came to UW–Madison for a doctorate in educational psychology. Good teaching, he argues, actively engages students so they are truly learning to think. And this is what UW–Madison is increasingly doing. Programs such as Delta, which trains graduate students and postdocs to be better teachers and mentors, show that the university is helping instructors learn the craft of teaching.

"I see great positive signs that these ideas are being taken seriously," he says. "Somebody said that the pace of change in higher education is glacial, but I don't see that. The change in the last 10 or 15 years has been remarkable."

In the last 10 or 15 years, I point out, the change in glaciers has also been remarkable. He pauses. In the future, we will need new metaphors.

"Well," he says, "when I look around here and think about the future, I see this area growing massively. We have water, and we have a temperate climate. The people who can't live in Miami and Phoenix anymore — where are they going to go? Right here."

Which brings us back to LaVar Charleston in his subdivided office in Bascom Hall. If a university is the aggregate of its students, then Charleston is watching UW–Madison change. In the future, when those people come from Florida or Arizona or wherever, he wants to make sure that UW–Madison helps them — and their Wisconsin-born classmates — thrive in the working world they find afterward. The university, like the United States, is becoming more diverse.

"Increasingly, we have a more global society," Charleston says. "In order for students to be more successful, you have to have cultural intelligence skills. You must be able to engage in diversity and difference to be effective."

In the last 10 years, he notes, the share of UW–Madison's faculty who are people of color has grown from 18 percent to 25. Among students, the share of people of color has grown from 14 percent to 20, and a fifth of all undergrads are now first-generation college students.

So what will the UW student body look like in the future? "My hope is that we are the destination of choice for students who have historically been marginalized: an ideal place to get a top-notch education and be prepared to be a leader in the world," Charleston says. "I don't think that's impossible."

In other words, if Charleston succeeds, the UW will be a place where diversity is taken for granted and everyone feels at home. If Charleston's division meets his goals, the UW's students won't need him at all. "Our job is to work ourselves out of a job," he says.

And then some unknown future UW administrator will occupy his office on Bascom Hall's first floor, wondering who bought the scarred and dainty table, and what it was that this generation thought it knew. ●

John Allen is the associate publisher of On Wisconsin. *Eric Hamilton contributed additional reporting to this article.*

HOW TO HAVE IT ALL

The pursuit of happiness can feel like a fruitless endeavor. UW experts say it doesn't have to.

BY MEGAN PROVOST '20

If you flipped to this page hoping to learn "How to Be Happy in Five Easy Steps," I apologize for the confusion. This is not that kind of article.

Realistically speaking, the secret to happiness is likely located somewhere in the seemingly infinite amount of information that exists on the subject — knowledge humans have been accumulating for as long as we've been conscious. Making a meaningful contribution in a meager 2,300 words seems almost futile. Nevertheless, I figured that if I was going to try, I should at least conduct some original research. I planned to keep it simple: approach individuals at random and ask them, "Are you happy?"

I immediately knew I would not be conducting this experiment. There is no better way to quell someone's happiness than by holding them accountable for it, and who am I to risk jeopardizing a perfect stranger's happiness by calling it into question?

If this sounds overly cautious, I implore you to consider the latest findings in happiness from people who are qualified to conduct this research. According to the most recent General Social Survey, a study from the National Opinion Research Center (NORC) at the University of Chicago that has monitored Americans' life satisfaction since 1972, we are the least happy we've been in 50 years. Only 19 percent of Americans reported being "very happy" in 2021, down from 32 percent in 2018; the previous record low was 28 percent in 2010. At the same time, the number of those who rated their life satisfaction as "not too happy" spiked from 13 percent in 2018 to 24 percent in 2021, breaking the previous record high of 17 percent in 1972.

It doesn't take an advanced degree to speculate about why this might be, but it does take considerable expertise to identify a way of reversing the trend. Luckily, some of the foremost experts in human happiness make their scholarly home at the UW, and they have a few ideas. The present may be bleak, but the future is promising. Some of the very circumstances that have tanked our happiness in recent years may have positioned us to be the happiest we've ever been — if we choose to be.

A BRIEF HISTORY OF HAPPINESS

For the title of her 1958 novel, *The Best of Everything*, Rona Jaffe drew inspiration from a help-wanted ad in the *New York Times* that assured readers "you deserve the best of everything!" The book follows five young women's fruitless quests for fulfillment, some to tragic ends. Jaffe's semiautobiographical novel immediately resonated with millions of readers and continues to do so to this day as the pursuit of happiness — with its associated hardships and heartbreaks — remains a cornerstone of American culture.

Happiness first appeared as a marketed commodity in America in the 1920s, when advertisers

DANIELLE LAWRY

sought to kickstart a culture of consumerism. This was the beginning of the idea that one can buy happiness. According to Lawrence Samuel's *Happiness in America: A Cultural History,* research of the time already identified wealth and consumption as nonviable routes to true happiness, but more than 100 years later, it's a fundamental ideology we have yet to shake.

The 1950s saw the rise of the self-help publishing industry, and between 1975 and 2000, self-help titles doubled in the percentage of all American books in print. Seminal research from Christine Whelan, a scholar of the American self-help industry and the "happy professor" in the Department of Consumer Science in the UW School of Human Ecology, suggests that the infatuation with self-help resources was almost certainly a byproduct of Americans' attempts at retaining a semblance of control in lives that felt otherwise out of hand.

Experts consider the time in which we're living the most conducive to happiness in human history, at least in material terms. But despite milestones in societal advancement since the 1970s, our sense of control remains the same, as evidenced by our feeble attempts to actually be happy. One need look no further than the latest iteration of self-help: self-care, a $450 billion industry that profits from the notion that the secret to happiness is as accessible as skincare serums and athleisure wear.

The ever-evolving pursuit of this transient high is the lifeblood of an industry that thrives on insatiable need, or what psychologists call the arrival fallacy: the belief that true happiness lies just beyond our current state of being.

"The more control we have acquired over our environments, the more we've lost sight of the fact that we cannot control everything," says Pelin Kesebir, an honorary fellow in the UW's Center for

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Percentage by which the number of Americans who reported feeling "very happy" decreased since 2018 — the most drastic drop on record.

Healthy Minds and an expert on happiness. "Instead of looking at how much better we have made life, we wonder why life is not perfect."

While material luxuries may provide fleeting bursts of pleasure, they fail to deliver on the everlasting bliss they promise.

"I imagine that it's actually undermining people's happiness, because every time you buy something that you think is going to be 'the thing,' and it doesn't work, it's another punch in the gut, [another instance in which] I've 'failed' in some way," Whelan says. "Not only is this blaming the victim, but this is a pretty scary twist on the idea of the true pathways to happiness and well-being."

This is not to say that money can't buy happiness; Whelan teaches a course, Consuming Happiness, that instructs students on how to spend their money in a way that maximizes their well-being. Rather, the devout belief that happiness derives primarily from material sources is a symptom of a more pervasive obstacle in our pursuit of it.

LEGENDARY LOWS

Individualism — the social theory that prioritizes the individual over the collective — isn't new, and it's not uniquely American, but it is this hallmark of our society that rendered us susceptible to a 50-year happiness low. Understanding how individualism hinders our pursuit of enduring happiness presents the challenge of defining that elusive prize, and there are about as many definitions of happiness as there are people in search of it.

Scientists like Whelan and Kesebir define happiness as a subjective state of being. Kesebir and the late University of Illinois professor Ed Diener write that enduring happiness is a function of life satisfaction ("global judgments of one's life"); satisfaction with one's work, health, marriage, and other personal domains; and a healthy balance of pleasant and unpleasant emotions and moods, also known as positive and negative affect. In the context of American society, it's fitting that the fundamental determinants of our happiness are primarily concerned with the individual. It's also to our detriment.

Studies like the General Social Survey and Gallup polls have tracked trends in these realms for years, but comparing data from identical studies conducted before and after March 2020 can feel like comparing apples to alien spacecraft. And without the critical distance from a pandemic that hasn't really ended, we can't yet determine its long-term implications for our happiness. In the present moment, however, both the NORC data and the latest Gallup poll on the "Mood of the Nation" indicate that the most influential factors in our happiness were also among the pandemic's many victims.

After steadily increasing since 2014, rates of Americans who reported being "very happy" in their marriages fell from 64 to 61 percent, while those reporting being "not too happy" in their marriages reversed improvement seen in 2018. Those satisfied with their financial situations fell 6 percent, while those unsatisfied rose by the same amount, and satisfaction with the quality of American health care has steadily declined since 2020. In January of that year, 43 percent of Gallup poll respondents were satisfied with "our system of government and how well it works," and 57 percent were dissatisfied; in January 2022, those numbers were 27 percent and 73 percent, respectively. Finally, those who believe that the standard of living will improve fell from 65 to 47 percent, while those who lack faith in the potential for improvement rose from 15 to 25 percent.

DANIELLE LAWRY

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Percentage by which the global average of benevolent acts like making charitable donations and volunteering increased in 2021.

"There are certain things that are out of our control, and the pandemic was a major illustration of that," Kesebir says. "If we make our happiness conditional on dynamics over which we have very little control, we set ourselves up for failure from the outset."

American individualism also conflicts with our otherwise inherently human affinity for connection. Whelan codesigned a course at the UW — Eco You: Belonging, Purpose, and the Ecology of Human Happiness — that highlights differences between *ego* (self-centered) and *eco* (community-centric) approaches to life and notes the latter's tendency to yield enduring happiness.

"One of the core concepts of human ecology is that we are interdependent," Whelan says. "The key predictor of happiness is not money. It's not success

or fame. It's the quality of the relationships that people have."

It's no surprise, then, that happiness suffered so greatly not only from the physical isolation of the pandemic, but also from the way in which it exacerbated polarization. America's population had been turning more drastically against itself for more than two decades, and now polarization is reaching an all-time high. The disparities between different groups' responses to the pandemic, paired with those to the social justice movements and the heated election cycle of 2020, provided not only a direction in which to point fingers, but also another reason to reach inward rather than out to one another in search of happiness.

"If we don't have a sense of interdependence or relationship with each other, we focus more on ourselves because that's the only thing that we know and trust," Whelan says. "When we as individuals don't feel like there is a 'we' that's all in this together, we turn inward more. It's our happiness to fix. Then, if you are the enemy of my happiness, I've got to protect my happiness from you, and everything that you do is a threat to me."

For Whelan, this idea transcends politics.

"Interdependence really just means that no man is an island," she says. "We are in relationship with each other. We need to be kind and supportive of each other. My happiness and your happiness can actually be intertwined, and to ignore that actually will make me less happy."

In short, the pandemic did us no favors in driving up rates of consumerism, debasing the fundamental determinants of our well-being, and deepening our ideological divides — but we also can't say it didn't give us anything.

HOPE FOR HAPPINESS

I mentioned that this article would not reveal "How to Be Happy in Five Easy Steps." But Whelan and Kesebir do offer research-based advice for improving personal well-being.

According to Whelan, what we seek in self-help books and self-care purchases, we find in our own lives once we take the time to mindfully imbue them with purpose. Through her "daily purpose statement" exercise, she encourages individuals to reflect on not only the inherent merit in the minutiae of their days, but also the personal values and gifts they can share through meaningful gestures in service of others.

"While it's easy for us to say meaning and purpose are these big ideas that don't impact our daily lives, there are ways that we can integrate big-picture purpose and everyday tasks. Without actually changing a lot about what we're doing, seeing the meaning in everyday things tends to make us feel a lot happier," she says.

Kesebir takes a similar back-to-basics approach to nurturing the roots of enduring happiness through scholarly research on the cultivation of a healthy mind. She says it's a function of attention and interpretation: the stimuli we allow into our reality and the ways in which we make meaning of those things. Evolutionary tendencies have hard-wired humans to be more attuned to negative (i.e., threatening or anxiety-inducing) stimuli. Through mindfulness, gratitude, practiced positivity, and the cultivation of healthy relationships, individuals can reclaim control of their perception of and response to their circumstances, even when they can't control the circumstances themselves.

"The fact that happiness lies more in altruistic actions than in selfishness is one of the most important things that we need to learn as humankind."

If these approaches sound clichéd, perhaps that's okay; even the experts attest to the validity of truisms stamped on Hallmark cards and coffee mugs. In fact, Whelan keeps one — a quote from a former mentor — neatly framed in her office: "When self-help doesn't work, try social change."

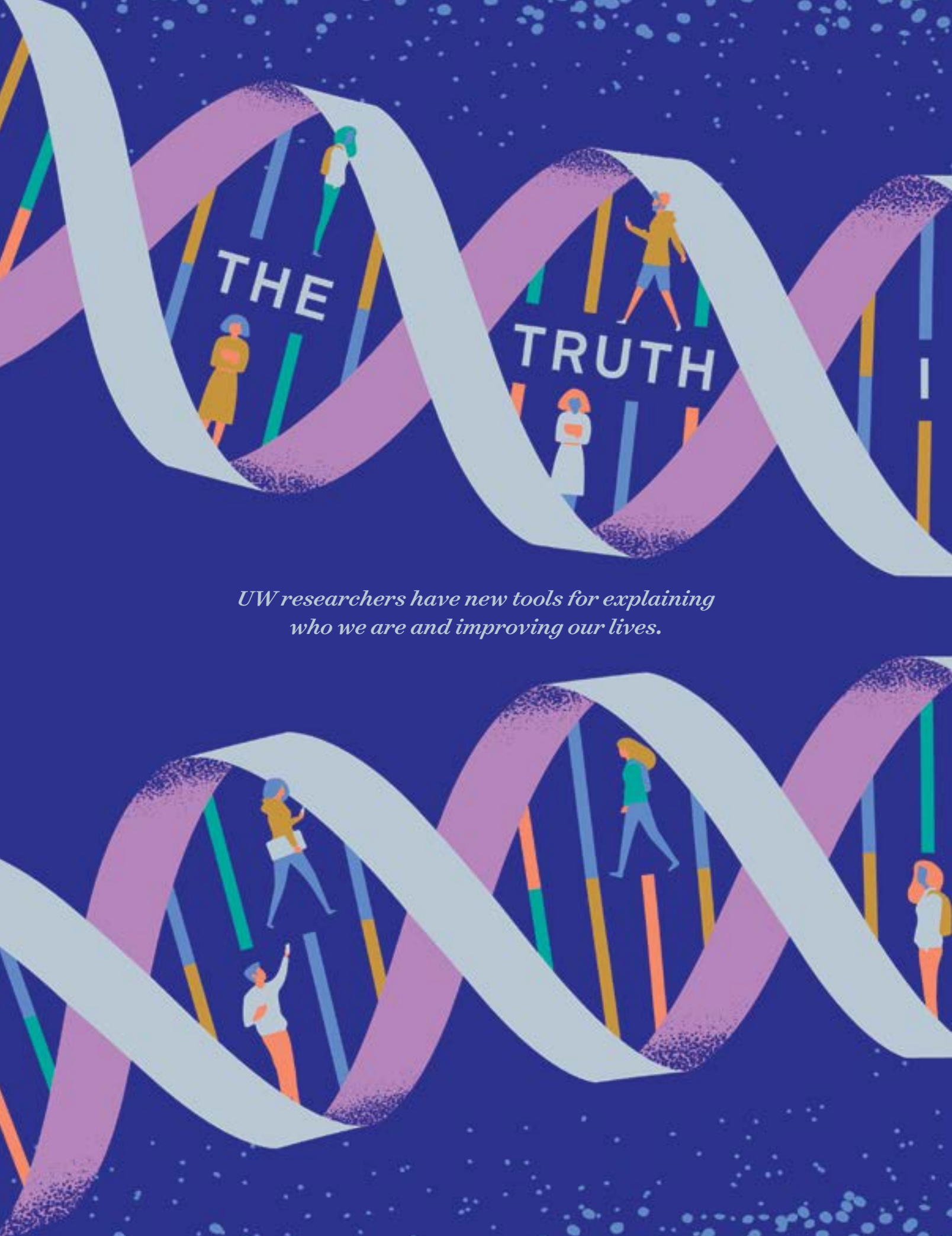
"At the core of that is, when thinking about *me, me, me* isn't working for you, realize that you are probably not the only one with this problem," she says. "Think about the *we* and how can you solve the problem not just for you as an individual, but for other people like you."

Ironically, the catalysts of our unhappiness over the past three years have also created ample opportunities to think of others. According to the 2022 World Happiness Report published by the United Nations' Sustainable Development Solutions Network, one of the most remarkable behavioral results of the pandemic was a drastic uptick in benevolence. Every global region saw "large increases in the proportion of people who give money to charity, help strangers, and do voluntary work," and the global average of these three measures was up by 25 percent in 2021 from pre-pandemic.

"The fact that happiness lies more in altruistic actions than in selfishness is one of the most important things that we need to learn as humankind," Kesebir says. "My hope is that it will be something that people really pick up on in the context of learning about happiness and try to implement in their lives."

In short, happiness doesn't have to be a matter of "five easy steps." There may simply be one, and we stand to benefit far more than just ourselves — and for longer than one fleeting moment — should we choose to take it. ●

Megan Provost is a staff writer for On Wisconsin *who finds enduring happiness in writing articles for you fine readers.*



UW researchers have new tools for explaining who we are and improving our lives.

BY PRESTON SCHMITT ’14
ILLUSTRATIONS BY DANIELLE LAWRY

How much information about ourselves is too much? As the field of genetics advances, with the relatively new ability to cheaply sequence a person's entire genetic makeup, it's a question we should all be ready to confront.

Consider a screening that, with a drop of blood, records a newborn's complete set of genes — collectively known as the genome — and calculates risk scores for thousands of potential medical and social outcomes. Indicators for autism, dyslexia, diabetes, ADHD, depression, and even low educational attainment become part of the newborn's permanent medical record.

Though not yet practical, all of that is already possible. And one can easily imagine the benefits of such an approach: earlier diagnoses, faster interventions, better treatments. In the future, pairing information about patients' social circumstances with their genetic code could help medical providers prescribe a drug that's more likely to be effective. This innovative approach is called precision medicine, with its most promising applications so far in cancer treatment.

But why stop there? Genomic data could easily have social and policy applications. If a child is shown to have a higher risk score for a learning disorder, schools could provide supports earlier, subsidized by the government, before she falls behind in class.

For all the promise, there is plenty of peril in such a brave new world. The field of genetics has journeyed down dark paths before, from the horrors of eugenics to the debunked science of *The Bell Curve*. Genetic discrimination could flourish, such as life insurance companies hiking up rates on policyholders with high-risk medical indicators. Schools could factor genetic potential into the admissions process.

UW–Madison has become a leading hub for researchers who are exploring these complex issues, which they pursue with equal parts enthusiasm and caution. They're trying to better understand how our genes interact with our environments, which is the underpinning of the emerging field of social genomics. The UW is investing heavily in it through the Initiative in Social Genomics — a research group and cluster hiring effort that fosters collaboration across academic disciplines.

"We recognized that we were all using the same large-scale genomic data sets to study complex social outcomes," says James Li, an associate professor of psychology at UW–Madison. "And it's really unusual that researchers with an economics background or a biostats background or a public policy background or a psychology background or a population health background could all speak the same language with one another. And the language we were speaking was genetics."

It's a language only made possible by the genomic revolution of the past 20 years, one with many implications for our future.

CRACKING THE CODE

The Human Genome Project was something of a moon shot to fully sequence the human genome. The massive scientific endeavor involved thousands of international researchers eager to contribute to the effort that began in 1990. Thirteen years and some $3 billion later, they produced a genetic sequence that accurately captured more than 90 percent of the generic human genome.

Cracking that code opened seemingly infinite possibilities in biomedical research. Scientists no longer had to rely on identical and fraternal twins — the gold standard for genetics research for decades — to explore heritability and how our genes contribute to physical, medical, and social traits. Now they could study everyone.

The genomic revolution was here.

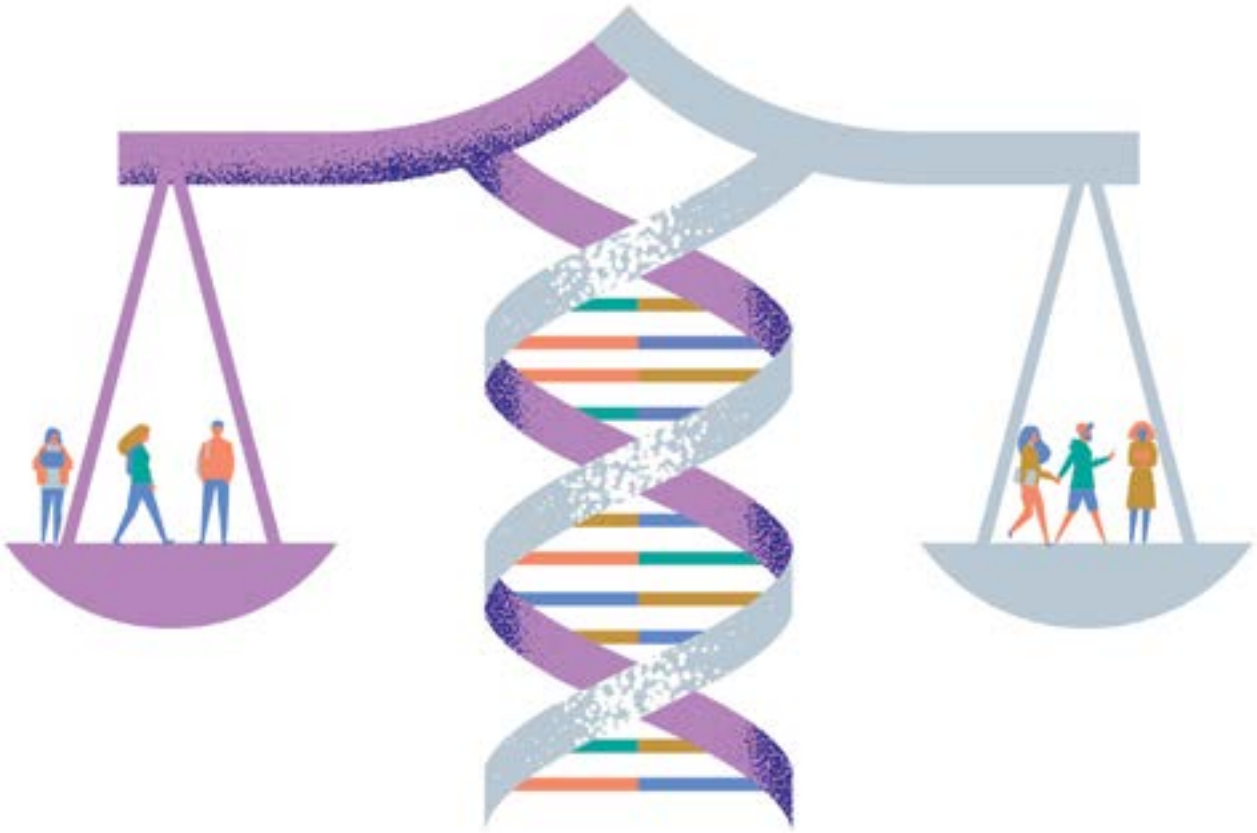
Still, the cost of sequencing even one person's genome was prohibitive — some $100 million in 2001. As a result, researchers had to strategically select a small segment of their subjects' DNA to analyze. A frenzy of articles followed, linking variance in individual genes to different medical and social outcomes, such as depression, ADHD, and academic success. Any gene theorized to influence an outcome was called a candidate gene. You may even remember magazine covers hyping the search for a "gay gene" — definitive proof that sexual orientation is hardcoded at birth.

But there was a problem with all these studies: none could be reliably replicated. Researchers soon realized that single-gene explanations for outcomes are the exceptions rather than the norm, limited to rare genetic conditions that follow simple inheritance patterns — like sickle cell and Huntington's.

"In retrospect, it was silly of scientists to think that they would find the gene, or even the handful of genes, for sexuality or for IQ," writes Jason Fletcher MS'03, PhD'06, a UW–Madison professor of public affairs, in his 2017 coauthored book *The Genome Factor*. "Social life is infinitely more complicated than eye color (which is influenced by three genes). Even something as biologically determined as height (which is 80–90 percent heritable) is highly polygenic — that is, influenced by thousands of genes, each with tiny effects. And if height is affected by that many genes, then social behavior must involve almost every gene known to humankind."

As scientists learn how genes interact with social environments, their findings could transform health care and public policy.

Meanwhile, the cost of sequencing a human genome was dropping at a dizzying rate. By 2016, the cost per human genome had decreased to $1,000, and to a fraction of that for a representative sample.



International consortia were able to compile genomic data sets with hundreds of thousands of DNA samples. There was no longer a need to hypothesize about candidate genes — now every gene could be tested with what's called a genome-wide association study.

To make up our genome, every cell in the human body holds a copy of 3 billion DNA base pairs. The sequence of these pairs directs our human form and function. And since 99.9 percent of them organize identically across the genome in humans, the 0.1 percent variation between people can hold consequential clues about their differences.

Researchers now have data for more than 2.5 million of these genetic variants. New technology can scan a set of genomes and flag statistically significant associations between the variants and practically any human trait. Only some people, for example, can smell a distinct odor in their urine after eating asparagus. In 2016, Harvard researchers found 871 variants, all located in one region of the genome, that are highly associated with an inability to do so.

Since 2008, researchers have found some 430,000 associations between genes and traits across 6,000-plus studies.

Taking it one step farther, researchers can look at an individual's genetic variants and calculate his genetic risk for any associated outcome (what's called a polygenic score).

For UW researchers in the Initiative in Social Genomics, these new tools have proven useful for exploring how our genes interact with our social environments — and how we may be able to use that information to improve health care and public policy.

GENETIC INEQUALITIES

Every Thursday, the core faculty members of the UW's Initiative in Social Genomics, along with graduate students and postdoctoral researchers, convene for a weekly lab meeting. Sometimes they present their latest research findings; other times they banter about the limitations in methodology and the restraint still needed in interpreting results.

They all bring different academic perspectives: Fletcher and Lauren Schmitz in health economics and public affairs; Li in clinical psychology and psychiatry; Qiongshi Lu in biostatistics and medical informatics; Corinne Engelman in population health sciences. Often in collaboration, they've published dozens of influential studies that suggest behavior is influenced by varying degrees of environmental and genetic factors. For example, a 2021 study found that while higher educational attainment is usually a good predictor for better cognition in late life, it has less of a positive effect for those with a higher genetic risk for Alzheimer's.

For some studies, the potential for influencing better policy-making is obvious.

Following a precipitous decline, smoking rates have remained relatively steady in recent decades despite punishing tobacco taxes. In a 2012 article, Fletcher examined the importance of genetics in the response to taxation policy. He found that a genetic variation in the nicotinic acetylcholine receptor affected the influence of tobacco taxation on tobacco use, meaning that those with less of a predisposition to smoking are more likely to be deterred by taxes.

"Should we keep increasing taxes — forcing the remaining smokers to pay a larger and larger share of their incomes in part because they were unlucky in the genetic lottery of life?" Fletcher writes in his book. "Should we subsidize their smoking because they love it so much (due in part to their genetics)? Or should we target these folks for prevention efforts, so they do not start in the first place?"

As is often the case in policy-making, there are no easy answers.

A frustration in genomics research is that, as Fletcher puts it, "humans are in the wild." Unlike lab animals, you'll never find two people who have been exposed to the exact same environment at every moment. This makes it difficult for researchers to discern whether our genes are influencing the environments we choose or whether our environments are directly influencing our behavior.

To capture causality more clearly, UW researchers have spearheaded "quasi-natural" study designs. The methodology focuses on just one environmental variation that couldn't possibly be a consequence of genetic variation. One example is to study Vietnam War draft participants, since their genetics didn't influence their luck in the lottery. A 2015 paper coauthored by Schmitz explored whether the effect of military service on smoking behavior varied by genetic predisposition. It found that veterans with a higher genetic risk of smoking were more likely to become lifelong smokers as compared to those with similar genetic risk who weren't conscripted.

Schmitz designed a similar study on the high-school movement in the United States, where enrollment in secondary schools skyrocketed in the first half of the 20th century. It found a significant link between high genetic scores for educational attainment and high-school completion — but only in low-performing states. In high-performing states, there was no difference in completion rates between those with high or low genetic scores.

"I think what we're seeing is that if the social environment is more equal, and if people are exposed more equally to better conditions, there's potentially less room for underlying genetic inequalities to take shape," Schmitz says.

PREDICTING YOUR MORTALITY

UW researchers are starting to dive into an emerging subfield that has swiftly captured the imaginations of social scientists: epigenetics. It turns out our behavior and environment — stress and nutrition, for example — can affect how our genes work.

The most studied epigenomic process is DNA methylation, which plays a role in the cellular process of aging and of cancer development.

Since 2013, researchers have been developing "clocks" that can measure your DNA methylation levels at specific sites and calculate your age. At first, these clocks could, with increasing accuracy, estimate your chronological age. Now they can calculate your biological age as well as your rate of aging — how quickly or slowly your cells are accumulating changes associated with mortality. These advanced clocks are proving to be better mortality predictors than both our chronological age and traditional risk factors (smoking, cholesterol, diabetes, and the like).

UW researchers are taking these measures of biological age to study factors in the social environment that may be associated with accelerated aging.

In a 2022 publication, Schmitz used epigenomic data from the U.S. Health and Retirement Study to research whether in-utero exposure to the Great Depression — and therefore conditions like maternal stress and malnutrition — impacted late-life epigenetic aging. She found that the historic economic downturn had statistically significant negative effects on epigenetic age acceleration in study participants whose DNA methylation was measured in 2016. Remarkably, epigenetic markers from in-utero exposure were still identifiable some eight decades later.

"It should make us take a step back and think, 'What are the origins of health disparities in our population?' " Schmitz says. "Yes, one is our own behaviors — how much we eat, how much we exercise. But what we're seeing here are disparities at a population level that might start developing before

people are even born. That has implications for how we think about spending on health care, reproductive care, and social programs."

THE BIOLOGICAL QUESTION

Major questions still loom over the field of genomics and limit the utility of its findings. The UW's team, uniquely grounded in both social science and data analysis, has emerged as a national leader in addressing them.

For one, a genetic risk score only captures the statistical probability of an outcome. It doesn't get us any closer to understanding the underlying biology that causes the outcome.

"We don't know what the 44 genetic variants that have been identified for major depressive disorder are actually doing [in the body to produce depression]," Li says.

To better understand the biology, Li's Social and Behavioral Development Lab has teamed up with the Motor and Brain Development Lab at the Waisman Center. The project is integrating genetic testing with brain imaging to study ADHD, autism spectrum disorder, and their concurrence. If the research can link genetic and neural signals, it could lead to earlier diagnoses and better therapeutics.

Another limitation of risk scoring as it's currently calculated is that it struggles to differentiate between disorders since many of them share the same genetic indicators. This makes it impractical for mental health clinicians to use risk scores as an assessment or treatment tool.

"Our patients don't come in with one disorder," Li says. "Mental health isn't just one thing. It's really a collection of many different symptoms across many different disorders."

UW collaborator Qiongshi Lu has become a national leader in developing cutting-edge statistical methods to unravel such complexities and improve the accuracy and clarity of genetic risk scores. And more precision could create a pathway for clinical use.

THE HUMAN CONDITION

For just $200 and a half teaspoon of saliva, a service like 23andMe will sequence your genome in less than a month and send you a profile of your ancestry, personal traits, and medical risk scores. For $500 and a few drops of blood, a company like TruDiagnostic will calculate your biological age.

Ancestry.com will even send you a genetically informed Spotify playlist.

But, as UW researchers warn, the results are only as good as the honest interpretation of them. And the truth is that we don't know enough yet for them to make much of a difference in your life today. If you find out your biological age is five years older than your actual age, you won't know why — or how to reverse the trend.

And then there are the rising privacy and discrimination concerns, with companies collecting millions of samples from consumers who may not read the fine print.

"People have contributed their DNA without recognizing that it's really a permanent choice," Fletcher says. "And no one's thought about the protections that we might like to have against being penalized for our genetics."

If your genetic information is breached, you can't change it like you can a password. In the United States, health insurance companies and employers can't legally discriminate based on genetics, but Congress nearly weakened those protections in 2017. And it's still technically legal in the arenas of education, mortgage lending, and life insurance. On dating apps, people are already eager to share personality-test results and partner preferences; what's to stop us from adding genetics to the mix?

"No one's thought about the protections that we might like to have against being penalized for our genetics."

Advances in CRISPR technology and gene editing open yet another Pandora's box of ethical questions, particularly around the potential to genetically modify embryos. Most countries have enacted a moratorium on human genome editing, though there's always a risk of a rogue researcher.

Today's social genomics researchers understand the potential for abuse. In fact, forefathers of the UW's genetics department — and even a university president — were among those who championed eugenics, marriage restriction, and forced sterilizations in the early part of the 20th century. The university was also home to the first student club dedicated to eugenics and "the physical, mental, and moral improvement of the human race."

"This is why our social genomics cluster is so important. We have people who understand the social background of the eugenics movement and how it escalated to that," Schmitz says. "It's easy to twist scientific findings into saying what you want them to say. We're always going to have to guard against it."

At the same time, we can still embrace the potential of genomics in creating a better future — like more personalized medical care for cancer and depression and more equitable social policy.

Amid all the promise and controversy, there's one thing we can say for certain: the human condition is so complex that we may never fully understand it.

"But," Schmitz says, "generations hopefully will keep trying." ●

Preston Schmitt '14 is a senior staff writer for On Wisconsin.

On Alumni

News from Home and Abroad

Alumni Association 2.0

Will organizations like WAA exist in the future?

ALTHEA DOTZOUR

As the chief alumni officer and executive director of the Wisconsin Alumni Association, Sarah Schutt is in a good position to prognosticate on the future of alumni associations.

Given that the theme for this issue is the future, we asked **Sarah Schutt,** chief alumni officer and executive director for the Wisconsin Alumni Association (WAA), what she thinks the years ahead hold for WAA and for alumni associations in general.

Schutt believes that such organizations will continue to be important — and perhaps even increasingly important — because they are communities.

"No matter how much technology we develop," she says, "people are still social creatures, and at their core, they feel a sense of connection to other people. We're going to need to maintain some sort of mechanism to keep people feeling connected emotionally and sharing common experiences."

Prior to the COVID-19 pandemic, Schutt says, alumni associations were spending a lot of time redefining and justifying their purpose. "The pandemic really illuminated the need for personal connection and the importance of alumni associations providing that for universities. So we got to take [the connection issue] off the table, and now we can turn our attention to figuring out how to be nimble and flexible in changing conditions."

Schutt imagines that we'll see a continuing "melt" of geographic boundaries. This is already occurring in the wake of the pandemic as more international alumni are participating in WAA's virtual events on a regular basis. She also anticipates that the organization will expand its travel offerings. New forms of energy, she predicts, will make travel easier and less expensive, as well as less harmful to the environment.

Schutt expects that the coming decades will bring "channels and tools and ideas and experiences that we can't even imagine right now," but that as long as alumni associations listen to what their constituents want, they can adapt to these new technologies. "The core and the purpose of what we do is not going to change, but how we do it will," she says.

NIKI DENISON

Founders' Day is back in full force for the first time since the COVID-19 pandemic. The 2019 figures below give a preview of what to expect.

68
U.S. Founders' Day celebrations

3,209
Attendees

17
International Founders' Days events

$25,550
Raised for local chapter scholarships

JEFF MILLER

FILL THE HILL

Fill the Hill, the fall day-of-giving initiative that features volunteers placing a plastic flamingo on Bascom Hill for each gift given to UW–Madison, celebrated its 10th anniversary in October. Over the past decade of Fill the Hill events, more than 14,530 gifts have been made, raising some $2.4 million. The 2022 event brought in more than $421,000 and saw a record gift total of more than 2,700.

FOUNDERS' DAYS

From February through May, Wisconsin Alumni Association chapters around the world host special Founders' Day celebrations to commemorate the first classes held at the University of Wisconsin in 1849. The season is filled with spirited events featuring accomplished Badgers from Madison to Singapore and beyond. To find a Founders' Day event in your area, see uwalumni.com/founders-day.

BRYCE RICHTER

What's the Big Idea?

Innovate Week helps entrepreneurs turn dreams into world-changing businesses.

Last fall's event offered a hopeful vision of the future.

What's the matter with kids today? Nothing whatsoever, to judge from an event called "Entrepreneurons." As part of the two-year-old Innovate Week, four poised, personable young alumni gathered in the Discovery Building last October to talk about the ingenious businesses they founded as students. All paid tribute to UW–Madison's spirit of entrepreneurship, which was on full display throughout Innovate Week's panels, workshops, talks, and resource fair. These events offered a hopeful vision of the future, with faculty, staff, and students collaborating to solve the world's problems.

Sometimes with chocolate.

At "Entrepreneurons," **Kit Chow '21** told the origin story of Boosted Chews, a line of caffeinated chocolate treats. **Joel Baraka '22** explained his emotional connection to My Home Stars, which provides educational games for students in Ugandan refugee camps. And **Max Fergus '18** described LÜM, his platform for undiscovered musicians.

Keerthana Sreenivasan '20, MS'22 was inspired by the idea of carbon capture in a UW class and, with help from UW mentors, began work on a project called Earth RepAIR.

Sreenivasan compared the process of finding a mentor to online dating. "You're swiping yes or no, and then you click with this potential mentor on the first meeting," she said. "There's meaningful conversation, and you discover a mutual passion for a topic."

Mentorship is a key element of UW–Madison's Discovery to Product (D2P), which sponsors Innovate Week. D2P is a free resource for those yearning to bring visionary ideas to the marketplace. The mentors on staff have wide-ranging experience, from business to science to health care. They're ready to help UW entrepreneurs turn a promising notion into a real-life product or service.

"People tell us, 'I don't know where to start,' " says D2P's **Mary Carbine '86, MA'88,** who coordinates the UW Innovate Network. "We can give them practical tools and help them make connections."

D2P director **Andrew Richards '90, MPA'92** calls it the Wisconsin Idea in action. "We're tapping UW talent to solve problems in a way that touches people's everyday lives," he says.

The Wisconsin Idea was much in evidence at Innovate Week's resource fair, held in the Discovery Building's airy atrium. At a booth for the Design + Innovation master's program, **Ellen Vandewater MSx'23** neatly encapsulated the idealism of today's students: "I look forward to doing something that will truly help people."

DEAN ROBBINS

40s–60s

Annette Sherman Fettman '47 has been nicknamed the artist in residence of the Rose Blumkin Jewish Home in Omaha, Nebraska. Fettman's prolific body of work spans nearly eight decades and encompasses a variety of media, including terra cotta and bronze sculpture. Her work reflects her experiences as a cantor's wife, as well as her husband's experience surviving Auschwitz. Fettman has been featured in several shows and public art projects in the Omaha area. Thank you to **Renana Gross '74** for sharing this news about her mother with us!

During the celebration of its 30th anniversary, the Tanenbaum Center for Interreligious Understanding honored **Judith Banki '48** of New York City with the Rabbi Marc H. Tanenbaum Award for the Advancement of Interreligious Understanding. Banki is Tanenbaum's senior adviser of interreligious affairs.

Several Badgers are banding together to support the expansion of Dr. Howard Fuller Collegiate Academy, a tuition-free public charter school in Milwaukee. Philanthropists **Mary '68** and **Ted Kellner '69,** Metropolitan Milwaukee Association of Commerce president **Tim Sheehy '81,** Generation Growth Capital founder and campaign cochair **Cory Nettles JD'96,** and ManpowerGroup's chief people and culture officer and Academy board chair **Michelle Nettles JD'97** are supporting the $25 million capital campaign to fund the construction of a new high school and repurpose the current building for a new middle school. The updates would allow for the education of nearly 500 more students.

70s–80s

After 47 years on the faculty of the Iowa State University Department of Animal Science, **Joseph Sebranek MS'71, PhD'74** of Ames, Iowa, retired in August. Sebranek was most recently the Charles F. Curtiss Distinguished Professor in Agriculture and Life Sciences.

Fifth Third Bank Chicago-region president **Mark Hoppe '76, MBA'77** of Northbrook, Illinois, retired from the company in December after 45 years in the banking industry. Hoppe joined Fifth Third Bank during its merger with MB Financial in 2019. Since retiring, he has continued with Fifth Third in a senior advisory role.

Gourmet culinary company Spicin Foods, owned by **Scott Morse '79** of Jacksonville, Florida, is partnering with Kansas City Chiefs linebacker and former Wisconsin football player **Leo Chenal x'22** to promote its hot sauces, including its Pain Is Good hot sauce line. Chenal will also work with Spicin to develop his own signature sauces.

The Wisconsin Historical Society rereleased the award-winning memoir *Little Hawk and the Lone Wolf* in paperback in honor of National Paperback Day in July. The book recounts the life of the late **Raymond Kaquatosh JDx'80,** who was born on Wisconsin's Menominee Reservation in Neopit, Wisconsin, in 1924 and went on to become one of the first Menominee to earn a pilot's license during his service in the Marines during World War II. Kaquatosh shares stories of his Depression-era childhood, his experiences at the Menominee Boarding School at Keshena, and the timber wolf he befriended in his youth who followed him into adulthood.

Steve "Wolfie" Browender '81 never met a Saint Paul street he wouldn't bike. Since 2011, Browender has committed to biking every block of the more than 800 miles of streets that weave through Minnesota's capital city. He documents his journey on his blog, *Saint Paul by Bike*, where he records the curious sightings and friendly locals he encounters on his rides. Before retiring in 2019, Browender served as the director of recycling partnerships for technology nonprofit PCs for People.

The UW School of Medicine and Public Health welcomed **Heidi Conrad '86** of Saint Paul as its new chief financial officer. Prior to joining the UW, Conrad spent nearly 30 years at health care nonprofit HealthPartners, where she most recently served as vice president and chief financial officer for Regions Hospital and senior vice president and chief financial officer for care delivery. In 2019, Conrad was named *Business Journal*'s Chief Financial Officer of the Year.

Alejandro Cedeno MS'89 of Nashville, Tennessee, is the new senior vice president of research and development for Mars Pet Nutrition North America, a division of Mars Petcare. Cedeno comes to the role with 28 years of global research and development experience. He most recently served as vice president of research and development of pet food and snacks at the J. M. Smucker Company.

BOOK NEWS?
See page 62.

CLASS NOTES SUBMISSIONS
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90s

Solomon Ashby '90, JD'95 of Portsmouth, Virginia, was elected president of the Old Dominion Bar Association (ODBA), an 82-year-old association of African American attorneys in the Commonwealth of Virginia. Ashby is a partner at McIntyre Stein & Ashby PLLC. He previously served as city attorney for the City of Portsmouth and as assistant city attorney for the City of Atlanta and the City of Suffolk, Virginia. Ashby will serve as ODBA president for the 2022–24 term.

Leading biotechnology companies Kallyope, which special-

izes in targeting the gut-brain axis, and Brightseed, cofounded by CEO **James Flatt PhD'90** of Colorado Springs, Colorado, are teaming up to identify plant-based, bioactive compounds that could be used in weight management and glucose control. Researchers will use Brightseed's artificial intelligence platform Forager, which explores connections between nature and human health.

The International Association of Medical Science Educators presented **Kathryn Dey Huggett '90, MA'92, PhD'03** of South Burlington, Vermont, with its 2022 Distinguished Career Award for Excellence in Teaching and Educational Scholarship. Huggett is the Robert Larner, M.D. Professor of Medical Education, as well as assistant dean and director of the Teaching Academy at the Larner College of Medicine at the University of Vermont.

Madison-based computational fluid dynamics (CFD) company Convergent Science celebrated its 25th anniversary last year. The company was founded in the UW Engine Research Center in 1997 by then-graduate students **Eric Pomraning '90, MS'96, PhD'00; Peter Senecal MS'97, PhD'00; Daniel Lee PhD'99;** and **Keith Richards MS'99.** Today, what started out as a CFD consulting company is now a global operation that continues to support academic research.

Scott '90 and **Brigitte '91 Shulze** of Oak Park, California, are honoring the life of their daughter, **Sarah Shulze x'23,** a Wisconsin cross country and track and field athlete who died by suicide in April 2022, through a foundation established in her name. The Sarah Shulze Foundation supports causes close to Sarah's heart, including women's rights, student athletes, and mental health initiatives. The founda-

COURTESY OF LINELEAP

Leaping Ahead

Max Schauff '19 has devised a way to let you skip the line at your favorite bar.

On a bitterly cold night in February 2017, a long line formed outside Whiskey Jacks Saloon in Madison.

There was a natural attraction — a cheap beer special — but the line was also the result of an email blast from a UW–Madison engineering sophomore named **Max Schauff '19.** The Belleville, Wisconsin, native, along with his roommate, **Jack Pawlik '19,** was launching a business start-up that night on State Street. The email reminded people of the bar's beer special and went to a list Schauff accumulated while working for a campus food-delivery start-up.

The new venture, called LineLeap, allowed people to buy a LineSkip pass and go right to the door of participating bars.

"We were close to frostbitten on our hands and noses," Schauff says, recalling that first night. "But we sold a ton of LineSkips. That was the start of the journey. We thought we had something that could work."

They were right. Today, Schauff and his cofounding partners — University of Michigan grads Nick Becker and Patrick Skelly — are based in New York City. As of early 2023, LineLeap had 25 full-time employees and more than 300 participating venues in 80 cities.

A year after the Whiskey Jacks debut, Schauff entered LineLeap in the UW's 2018 Transcend Madison Innovation Competition, which drew 35 student-led start-ups vying for the $15,000 first prize.

"I didn't think we'd win," Schauff says. "Partnering with bars? But I said we'd apply the money directly to our growth."

They won. "I was ecstatic," he says. Schauff's mom had been pestering him about a summer job. "I called her and said I didn't need to get a job anymore."

Further pregraduation validation came when Schauff and his partners were accepted into the San Francisco–based Y Combinator technology start-up accelerator. "It's a three-month program," Schauff says. "Afterward we raised almost $2 million in venture capital funding. It was off to the races from there."

The core of the business remains the LineSkip passes, which can now be purchased on a mobile app — the fee is then split between LineLeap and the venue — but Schauff says more features are on the way.

"We are rolling out mobile drink ordering, cover fees, event ticketing, and more," he says. "The ultimate goal is to be a kind of one-stop shop for customers at their favorite bar."

DOUG MOE '79

tion has already offered to fund suicide-prevention training for UW athletes and coaches through the QPR Institute.

The American Immigration Lawyers Association presented **Ian Wagreich '90** of Downers Grove, Illinois, with its 2022 Sam Williamson Mentor Award. The award recognizes immigration-law attorneys who dedicate their time and resources to mentoring young colleagues. Wagreich cites his Jewish grandfather's experience of immigrating to America as a young teenager as inspiration for his legal career, which spans nearly 20 years. He is a partner at Hinshaw & Culbertson.

Jessica Buss '94 of New Albany, Ohio, was appointed president of U.S. insurance at specialty-insurance underwriter Argo Group International Holdings. Prior to joining Argo, Buss served as president and chief executive officer of GuideOne Insurance.

Nazli Yesiller Hanson PhD'94 of San Luis Obispo, California, is the recipient of ASTM International's 2022 Award of Merit. (ASTM, formerly known as American Society for Testing and Materials, is an international technical standards organization.) The award is ASTM's highest honor and recognizes Hanson's contributions to its soil and rock committee. Hanson is the director of the Global Waste Research Institute at California Polytechnic State University.

At the Creator's Cottage, a space founded by **Catrina Sparkman '97, MA'16** for women in Madison, local artists can practice and share their craft with a community of fellow creatives. The Creator's Cottage is home to a writers' café, a fiber arts studio, a fully equipped classroom space for hosting workshops, and overnight accommodations for artist retreats. Sparkman is an author and the executive director of Ironer's Press, a printing press that operates out of the Creator's Cottage and through which Sparkman publishes many of her own works. "We wanted a space where all women would feel welcome, so all women are invited here, but there's something about this space being led by a Black woman that tells other Black women, 'Hey, I'm going to be safe here,' " she told the *Wisconsin State Journal*.

WELCOME, ALL!
The Wisconsin Alumni Association (WAA) encourages diversity, inclusivity, nondiscrimination, and participation by all alumni, students, and friends of UW–Madison in its activities.

X-PLANATION
An *x* preceding a degree year indicates that the person did not complete, or has not yet completed, that degree at UW–Madison.

00s

Peter Ladwig MS'02, PhD'03 of Hutchinson, Minnesota, is the new vice president of nanoparticle technology at Niron Magnetics, a company developing the world's first commercial, high-performance, rare-earth-free permanent magnets. Ladwig joins Niron after 20 years with TDK Hutchinson Technology, where he served as senior director of technology development and senior director of engineering.

Kyungsung University in Busan, South Korea, has named **Jong-geun Lee ML'02, DJS'04** as its 14th president. He previously served as professor and dean of the Dong-A University Law School.

The Ho-Chunk language, *Hoocąk*, encompasses thousands of words and centuries of history, but its speakers are estimated at fewer than 50. Since 2019, Ho-Chunk linguist **Henning Garvin '03** has helped to preserve the language by documenting it in the first online Hoocąk-English dictionary, which launched in July. Garvin partners with the Hoocąk Waaziija Haci Language Division, with the division's program manager, **Adrienne Thunder MS'97, PhD'22,** and with remaining Hoocąk speakers to update the dictionary. It currently contains more than 11,000 entries, including audio recordings of pronunciations that were delivered by Ho-Chunk elders, including Garvin's father, Cecil. "We consider it a gift from all of these people to future generations," Thunder told the *Milwaukee Journal Sentinel* in August.

Todd Molfenter PhD'04 of Sun Prairie, Wisconsin, joined George Mason University's Helping to End Addiction Long-term (HEAL) Research Dissemination and Engagement Center Team, a collaboration between George Mason and Duke University as part of a five-year grant from the National Institutes of Health to help fight the opioid crisis. The team will develop and disseminate accessible and culturally appropriate communications about HEAL-generated data to communities most affected by the opioid crisis. Molfenter is a senior scientist in the Department of Industrial and Systems Engineering in the UW College of Engineering.

When **Augustino Ting Mayai MS'08, PhD'15** first arrived in the United States in 2001, he was one of the Lost Boys of Sudan — refugees of the country's civil war — selected by the U.S. government to resettle here. Just five years later, he started his first nonprofit, the Machara Miracle Network, to benefit his recovering homeland. Today, Mayai is a cofounder and current executive director of the Padoc Area Scholars Society, a college scholarship organization for high school graduates in South Sudan. He is also the director of research at the Sudd Institute, a South Sudanese research organization and policy think tank.

Gideon Martin '09 has joined the National Hockey League Players' Association (NHLPA) as the organization's associate counsel. The NHLPA is the labor union for athletes in the National Hockey League. Martin was previously assistant general counsel of the New York Hotel Trades Council.

10s

Valerie Donovan '11, MS'12 of Waunakee, Wisconsin, was appointed assistant director of mental health promotion and suicide prevention at the UW's University Health Services (UHS). Donovan joined the prevention team at UHS in 2013.

City University of New York–Hunter College welcomed **Sarah Craver MFS'12** as its new director of education abroad. Craver comes to Hunter College with experience in international education at several universities, including Tufts University and the Massachusetts Institute of Technology.

Samantha Bowen '13, MSW'14 was appointed assistant director of violence prevention at the UW's University Health Services. Bowen previously worked in public health management of HIV/AIDS in Texas and California.

The American Society for Agricultural and Biological Engineering (ASABE) presented its 2022 Sunkist Young Designer Award to **Cary Hubner MS'13.** The award honors ASABE members under the age of 40 for their outstanding contributions to the field. Hubner is a staff engineer in crop care technology development at the John Deere Seeding Group in Moline, Illinois, where he oversees the development of new planting technology. Hubner currently holds 17 U.S. patents as well as several European patents, all related to seeding technology.

Princeton University has named **Alison Ferris '14** of San Mateo, California, an assistant professor of mechanical and aerospace engineering. Ferris was most recently a research scientist at Stanford University, where her work focused on the use of sustainable fuels in energy and propulsion systems. She was the recipient of Stanford's Centennial Teaching Assistant Award,

ANDY MANIS

Return of the House Call

Two alums seek to bring health care to you.

It may not look exactly like an old-fashioned house call featuring a kindly doctor at your bedside with a trusty medical kit. But technology start-up Pivotal Health blends at-home health care with innovative technology to create a better experience for patients and providers.

As husbands, fathers, and patients themselves, founders **Sal Braico MBA'02** (above right) and **Pete Johnson '95** (above left) were frustrated by scheduling confusion, long wait times, and hurried care from overworked clinicians.

"The existing health care system is broken," says Braico. "We wanted to find a different answer by leveraging smart tech."

Combining their background in health care technology and business with the skills of emergency medicine physician Andrew Culp, they launched Pivotal Health in 2021. Patients can request urgent and primary care, and licensed clinicians will come to them for the same copay that an office or clinic would charge.

Younger generations have been quick to adopt this new model, but the number of seniors and patients with disabilities is growing as word spreads about the convenience of at-home visits.

Pivotal Health partnered with several national and regional insurance companies so that patients with insurance can pay for a visit with their existing coverage. Others can choose a self-pay option; a typical visit costs around $169. "We show patients out-of-pocket fees up front so they can make smart financial decisions — not wonder if they'll get a surprise bill," says Braico.

They're also hearing positive reactions from clinicians. "Health care workers are simply burned out," Johnson explains. "When you're in the patient's home, you can dedicate all your time to that patient."

With headquarters in Madison, Braico and Johnson count many UW students among their patients; last spring, clinicians visited student housing almost every day.

Braico and Johnson are already expanding coverage into the Milwaukee and La Crosse areas. They've also added services, including mental health triage and minor surgical procedures. Johnson says that "clinicians love working this way," and that patient reviews have been positive. "I've had pizza deliveries with more drama!" said one.

WENDY KRAUSE HATHAWAY '04

Zonta International's Amelia Earhart Fellowship, and Stanford's Justice, Equity, Diversity, and Inclusion Service Graduation Award.

Spencer Perron '14 of San Francisco is paving the way for equity in the cannabis industry with CLEO. The company, which he cofounded with friend and business partner Andrea Berrios, produces hemp gummies. As a queer- and Latino-owned brand, CLEO ensures accessibility and education about its products by offering content in both English and Spanish. The company is also committed to diversifying the cannabis industry by donating 3 percent of its profits to social equity organizations. Prior to entering the cannabis industry, Perron was a senior associate consultant with Bain & Company.

Upon moving to Israel and missing Madison's creative writing community, poet and former *Illumination Journal* editor **Tamara Rosin '14** created the Writers Collective of Tel Aviv. In July, the collective launched *WRITE-HAUS*, an English-language literary magazine, for which Rosin serves as editor in chief.

Rebecca Silverman '17 of Long Grove, Illinois, was selected as a 2022–23 Obama Foundation Scholar for her work promoting literacy access on the south side of Chicago. In 2020, she cofounded Rose Café, a bookstore and coffee shop in the Roseland neighborhood that aims to address the area's "book desert" by providing opportunities for reading and civic engagement. She is also a mayoral fellow with the City of Chicago. The Obama Foundation offers its scholars leadership development, networking, and mentorship services to address global problems and incite positive change.

Michael McMorrow '18 of De Pere, Wisconsin, was among the first Peace Corps volunteers to return overseas since the agency recalled nearly 7,000 volunteers from 60 countries in March 2020 due to the COVID-19 pandemic. McMorrow will spend two years serving in Uganda's education sector and teaching English to elementary school children.

CCM Hockey partnered with Wisconsin hockey alumna **Sarah Nurse '18** to release a Limited Edition JetSpeed FT5 Pro Gold Stick. The stick celebrates Nurse's decorated hockey career and features her name, number, and record-breaking statistics from her 2022 Olympic victory with Team Canada. A portion of the proceeds will go to Hockey 4 Youth, a nonprofit that increases access to hockey for young people. "I was introduced to hockey through my father, who emigrated from the Caribbean and believed that every Canadian should know how to skate. I am passionate about creating an inclusive space for hockey players," Nurse said. The first Black woman to win Olympic gold in hockey, Nurse is a board member and spokesperson of the Professional Women's Hockey Players' Association and a member of the NHL Player Inclusion Committee.

For one of her first assignments with Denver-based Wright Water Engineers, **Catherine Trowbridge '18** traveled to the Naples Bay region of Italy with the Wright Paleohydrological Institute to investigate ancient Roman civil engineering, specifically the Augusta Aqueduct and the municipal water system of Pompeii. The team surveyed lead piping and concluded that the water system of Pompeii probably did not deliver lead poisoning to its long-ago residents; rather, the mineral-laden source water coated the pipes in layers of calcium carbonate, which likely prevented lead from entering the drinking water. Thank you to **Ken Wright '51, MS'57** for sharing this news with us.

"When children and adults of all backgrounds are given the opportunities to learn about different cultures, this contributes to a decrease in hate and bias. As an advocate for my own community, I have sought out ways to decrease harmful stereotypes of Indigenous people."

— Whistler Somers '19

During her undergraduate studies at the UW, **Whistler Somers '19,** a member of one of the Haudenosaunee nations and a Precollege Enrichment Opportunity Program for Learning Excellence scholar, created a guide to help educators recognize authentic representations of Indigenous people in children's literature. Today, Somers is working toward becoming an author of children's historical literature herself as a 2022 Edward Wayne Barnett Scholar in the University of Virginia (UVA) School of Architecture. Somers plans to study historic architecture in order to write authentic historical fiction. She is also a passionate diversity educator. "When children and adults of all backgrounds are given the opportunities to learn about different cultures, this contributes to a decrease in hate and bias. As an advocate for my own community, I have sought out ways to decrease harmful stereotypes of Indigenous people," Somers told UVA. The scholarship is named in honor of one of the School of Architecture's first African American graduates and supports students who dedicate their work to underserved communities.

DEATH NOTICES • NAME, ADDRESS, TELEPHONE, AND EMAIL UPDATES
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OBITUARIES
Brief death notices for Wisconsin Alumni Association (WAA) members and friends appear in *Badger Insider*, WAA's magazine for its members. You also may submit full-length obituaries (with one photo each) for online posting at **uwalumni.com/alumni-notes/submit.**

20s

Allison Johnson MS'21 of Fayetteville, Arkansas, presented her disability inclusion workshop, Accessible Attitudes, at the Moebius Syndrome Conference in Atlanta in July. She created the workshop to facilitate conversations about individuals' experiences within the disabled community. Johnson was born with Moebius Syndrome, which affects the sixth and seventh cranial nerves and causes face paralysis and other health conditions.

Former Wisconsin running back **James "Sweet Feet" White '21** announced his retirement from the National Football League in August. White spent his entire professional career with the New England Patriots, with whom he won three Super Bowls. During Super Bowl LI against the Atlanta Falcons, White set the record for the most catches in a Super Bowl and scored three touchdowns en route to the biggest comeback in Super Bowl history. With the Badgers, White appeared in two Big Ten Championships and three Rose Bowls between 2010 and 2013.

Two Badgers are members of the inaugural cohort of the University of Michigan Ross School of Business's master of business analytics program. **Natalie Lobo '22** of Pebble Beach, California, and **Yuqi Shi '22** of Qingdao, China, join 50 peers from around the world in solving business challenges with complex data. At the UW, Lobo majored in life science communications with certificates in business and digital studies; Shi received his bachelor's of business administration in supply chain management and operations and technology management.

Whatever high-tech high jinks the future brings, Megan Provost '20 hopes On Wisconsin *will always publish in print.*

KAHLER SLATER AND LMN ARCHITECTS

Building for the Future

Three new state-of-the art facilities will optimize learning and innovation.

The university is raising funds to expand three key learning spaces: the College of Engineering; the School of Computer, Data & Information Sciences (see rendering above); and the College of Letters & Science.

More and more students apply to the College of Engineering each year, but due to space constraints, the college can only enroll just under 20 percent of them. With increasing demand for engineering graduates, a state-of-the-art building is a top priority to keep up with industry advances.

The expansion will allow the college to enroll 1,000 more undergraduates, recruit and retain first-rate faculty members, sustain its excellence in research and graduate education, and replace an aging 64,000-square-foot building with a 340,000-square-foot facility.

Enrollment in majors for the School of Computer, Data & Information Sciences (CDIS) outpaces all others on campus. CDIS will complete a 328,000-square-foot hub in the center of campus to foster academic research, host partnerships with community and industry cohorts, and support growing student interest. A $125 million commitment from **Tashia '55** and **John '55 Morgridge,** along with $50 million from the Wisconsin Alumni Research Foundation, is helping to launch this effort.

Designed to be the most sustainable building on campus, the new facility will establish a tech corridor that includes physics, chemistry, and engineering facilities. It will house not only the departments of CDIS but also the Center for High Throughput Computing, the N+1 Institute, the American Family Insurance Data Science Institute, and much of the Department of Biostatistics and Medical Informatics. The colocation of these innovative programs will increase innovation and accelerate discovery.

Also shaping the future in the College of Letters & Science is a planned four-story facility that will provide modern, active-learning classrooms to better serve a growing undergraduate population. The new space, made possible by a $20 million lead gift from brothers **Jeff Levy '72** and **Marv Levy '68, JD'71,** will be named Irving and Dorothy Levy Hall, in honor of their parents. The facility will be located at Park and W. Johnson Streets and is part of a larger plan to replace the aging Mosse Humanities Building. Irving and Dorothy Levy Hall will bring together departments in the humanities and ethnic studies and will create a home for the Department of History and seven other L&S departments and programs. Construction is set to begin in 2024 and finish in 2026.

NICOLE HEIMAN

NARDIS MUSIC

Swing State *is Sidran's first entirely instrumental album of his six-decade career.*

Swing Is the Thing

Father-son duo Ben '67 and Leo '99 Sidran bring decades of expertise to the timeless tunes on *Swing State*.

On *Swing State,* the first all-instrumental record of his six-decade career, Madison jazz musician **Ben Sidran '67** teams up with his son, **Leo Sidran '99** of Brooklyn, New York, and longtime collaborator Billy Peterson to create a sound as smooth as the singing that distinguishes the rest of his discography.

Swing State's sweetness lies in its sentimental simplicity. The record revisits jazz standards like "Lullaby of the Leaves," "Ain't Misbehavin'," "Stompin' at the Savoy," and "Tuxedo Junction" in an homage to the albums and artists that moved Sidran as a young pianist. With his son on drums and Peterson on bass, Sidran channels the piano trios of Horace Silver, Bobby Timmons, Bud Powell, and Sonny Clark.

"Like the great trios, this music is highly arranged to be loosely played. Ben uses all the pianistic devices of the day to create new music, bathed in warm familiarity with fresh invention," Michael Cuscuna writes in the record's liner notes.

According to Sidran, the album's title — also the name of its only original track — describes the emotional space one enters with the music: "[It's] that pulse — that loose, loping pulse that was at the heart of what people have always tried to do in jazz. … Swing used to be the thing that you wanted to establish to make people feel good."

Swing State marks a true return to roots for Sidran, whose musical résumé spans early days in the Ardells with friends **Steve Miller x'67** and **Boz Scaggs x'67;** sessions with the Rolling Stones, Eric Clapton, and Peter Frampton; production work for Miller, Van Morrison, and Diana Ross; and deep dives as a music journalist and academic.

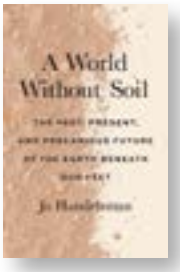
"[Sidran] has been his own short-order cook, juggling his own career and his projects. But we all return to our core, that is, the music that fueled our desires and tacitly directed our lives. Ben went home at the age of 78 with this album," Cuscuna writes.

Leo Sidran produced *Swing State*, which was recorded by **Mark Whitcomb '94** at DNA Music Labs in Madison.

Crossing the River: Seven Stories That Saved My Life

CAROL LEE SMITH MS'82

People grieve in their own way. Smith, a journalist, processed the sudden death of her seven-year-old son by telling the stories of other individuals bearing burdens of their own. In *Crossing the River,* Smith reflects on how reporting these stories helped her carry the weight of her personal struggle. The book was a finalist for the 2022 Washington Book Award. Smith is a seven-time Pulitzer-nominated journalist and editor for NPR affiliate KUOW in Seattle.



A World without Soil: The Past, Present, and Precarious Future of the Earth beneath Our Feet

JO HANDELSMAN PHD'84

Handelsman issues a harrowing warning about the foundation that is disappearing, quite literally, right out from under us. In *A World without Soil*, she highlights the connections among climate change, soil erosion, and increasing food production to feed a growing population. She also introduces potential interventions for reviving this compromised resource. Handelsman is the director of the Wisconsin Institute for Discovery.

A Long Way from Home

LAURA SCHAEFER '01

When faced with climate change, a cross-country move, and the inconveniences of being a teen, Abby jumps at the chance to help newfound friends get back to their home in the future — as long as she can join them. *A Long Way from Home* offers a view of the earth as we know it through the eyes of a young person who will inherit it. This whimsical sci-fi adventure invites readers to imagine a world without crisis and consider how they can help make that dream a reality.

Francis uses both personal experience and world histories to illustrate humans' capacity for compassion.

Submit your book news at **uwalumni.com/go/bookshelf** and visit **goodreads.com/wisalumni** to find more works by Badger alumni and faculty.

The Planetwalker's Guide to Goodwill

In *Human Kindness*, John Francis PhD'91 shares encouraging tales from around the world.

After 22 years spent walking across the Americas and a 17-year vow of silence, **John Francis PhD'91** of Cape May, New Jersey, knows a thing or two about people's capacity for kindness. In *Human Kindness: True Stories of Compassion and Generosity That Changed the World,* Francis — also known as the Planetwalker — explores our tendency toward decency through historical examples and personal anecdotes from a lifetime journey of environmental advocacy.

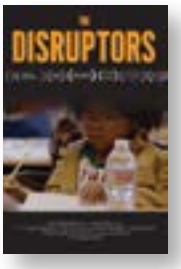
Francis commenced his trek across America after witnessing an oil spill in the San Francisco Bay. He denounced motor vehicles, and his silence soon followed. The kindness he was shown throughout his travels and the achievements that goodwill made possible — including completing three degrees without uttering a word — taught him more about caring for the environment than did the land upon which he walked.

"We are the environment, and how we treat each other is how we're going to treat the environment," Francis said in a TED Talk in 2018.

He opens the book with this personal journey through kindness before offering readers global examples of the phenomenon dating back to the earliest humans. He examines ancient expressions of respect and goodwill, lists time-tested proverbs and truisms, and shares stories of individuals whose selfless actions serve as inspiration for others. Illustrated with lively artwork and narrated in Francis's personable prose, *Human Kindness* is an engaging and uplifting read for all ages.

"[Kindness and generosity are] concepts that can be a bit challenging for children to understand and reflect on. This book shows that kindness is a range of ideas that can be acted upon at any age," one reviewer, an educator, writes.

Read more about Francis's strong and silent steps toward saving the earth in our Fall 2008 issue at onwisconsin.uwalumni.com.



The Disruptors

NANCY ARMSTRONG '88

This award-winning documentary follows five families affected by attention-deficit/hyperactivity disorder (ADHD) and sits down with several high-profile individuals who also live with the condition. Through first-person perspectives on living with a type of neurodivergence that presents differently among individuals, Armstrong dispels common myths and misconceptions surrounding ADHD and offers insight into an experience that is widely shared but frequently misunderstood.

Still Here

NATHANIEL STAMPLEY '08

After performing in beloved roles on some of Broadway's biggest stages, Stampley takes his talent to the small screen in this musical short film. *Still Here* follows Stampley as a middle-aged widower grappling with the anniversary of his wife's passing while reluctantly navigating the contemporary dating scene. The film is produced by MT Shorts and can be viewed on the company's website and YouTube channel. Stampley's theatrical résumé includes *The Lion King*, *Porgy and Bess*, *The Color Purple*, and *Paradise Square*.

Pinball: The Man Who Saved the Game

ROGER SHARPE '71

This film's title imparts a lofty accolade, but it's no exaggeration. *Pinball* recounts Sharpe's heroic testimony before the New York City Council to lift a more than 30-year ban on pinball games. Sharpe served as executive producer and technical consultant on the film. Read more about how Sharpe saved this beloved arcade classic and turned it into a career in our Spring 2016 issue at onwisconsin.uwalumni.com.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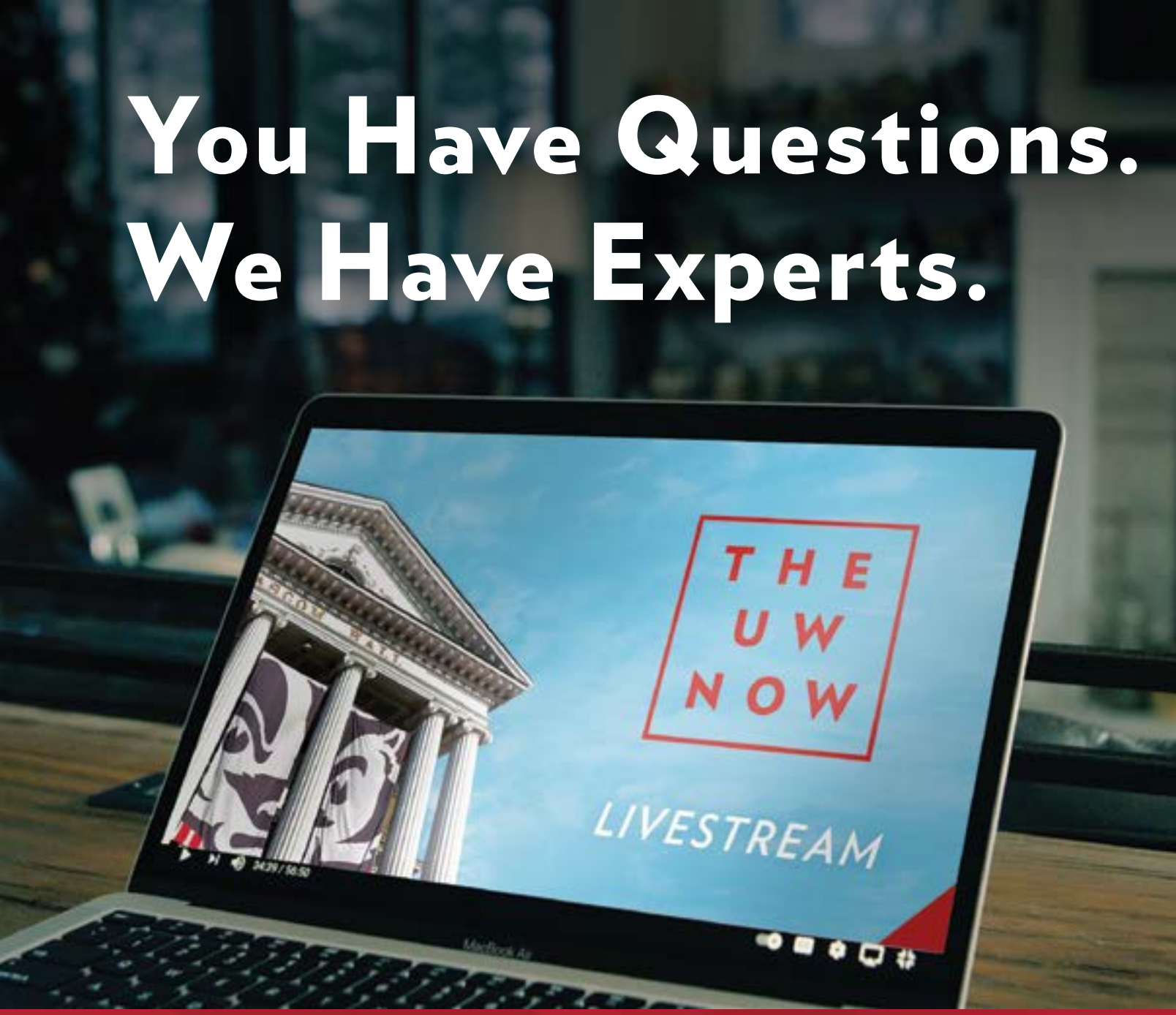

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SAM LI

Facing the Future

The statue atop the capitol was supposed to look "Forward." But what direction is that?

Wisconsin — the gilded goddess that peers down from the top of the state capitol — is one of Madison's longest-standing (and tallest) residents. But upon her arrival in 1914, the question of which direction she would face was the subject of great public debate.

West-siders argued that *Wisconsin*'s eyes should remain fixed on the university. Civil War veterans advocated for a western view of Camp Randall in honor of the "ten thousand Badger boys that died for the old flag." Others cited the legacy of western expansion, given the sculpture's embodiment of the state's motto, "Forward."

East-siders weren't so easily convinced. Many suggested that figures on state capitols should face Washington, DC. Even more posited that "Forward" indicated the direction of daybreak. "Since earliest history, the rising sun has been symbolic of a new day, progress, enlightenment, advancement," one voter wrote in response to a naming contest facilitated by the *Wisconsin State Journal*, which published daily returns on the heated race.

In 1914, the *Wisconsin State Journal* reported *Wisconsin*'s name as *Forward*. The misnomer endures to this day.

For several days, King Street (east) and State Street (west) were considered the only viable contenders, but two-block-long Monona Avenue (now Martin Luther King Jr. Boulevard, to the southeast) garnered widespread support amid talk of a park between the capitol and Lake Monona.

A true underdog, Monona Avenue ultimately made up for what it lacked in both blocks and ballots, thanks in large part to the capitol's architecture. While the building's four wings point toward the cardinal directions, the four small rotundas nestled between them were considered its formal entrances. Facing the statue toward Monona Avenue designated it as the official entryway to the capitol and ensured her watch over an imagined "future plaza which will lead from the capitol to the water gate of the city."

Wisconsin made her ascent to the top of the capitol dome on July 20, 1914. Her arms have since reached out to every dawn and over a street that now honors a civil rights giant whose dream of the future reverberates throughout our country.

"European cities have been made beautiful because their builders had the vision to see their cities in the future," the *State Journal* ballot read. "Think ahead. How would you face 'Forward'?"

MEGAN PROVOST '20

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