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FOR ALUMNI, FRIENDS, FACULTY, AND STUDENTS OF THE
UNIVERSITY OF WISCONSIN SCHOOL OF MEDICINE AND PUBLIC HEALTH

Quarterly

BEAM PROGRAM

School of Medicine and Public Health
UNIVERSITY OF WISCONSIN–MADISON

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QUARTERLY

The Magazine for Alumni, Friends, Faculty, and Students of
the University of Wisconsin School of Medicine and Public Health

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CALENDAR

April 2023

FRIDAY, APRIL 28
Spring WMAA Board of Directors Meeting, Scholarship Reception, and WMAA Awards Banquet

May 2023

FRIDAY, MAY 12
MD Graduate Recognition Ceremony

June 2023

THURSDAY, JUNE 1, AND FRIDAY, JUNE 2
Medical Alumni Weekend, including Reunions for the MD Classes of 1958, '63, '68, '73, and '78 and the Annual Reunion of the Half-Century Society

August 2023

FRIDAY, AUGUST 25
White Coat Ceremony

September 2023

FRIDAY, SEPTEMBER 29
Middleton Society Event

October 2023

FRIDAY, OCTOBER 6
Fall WMAA Board of Directors Meeting, WMAA Homecoming, and Fall Class Reunion Dinners

SATURDAY, OCTOBER 7
WMAA Tailgate Party, Homecoming Football Game, and Reunions for the MD Classes of 1983, '88, '93, '98, 2003, '08, '13, and '18

CONNECT WITH WMAA AND ALUMNI ON SOCIAL MEDIA

Please search for ***@uwmedalum*** on Facebook and Instagram. Follow us for fun updates!

During the 2023 Winter Carnival, revelers watch as fireworks light up the night sky over Lake Mendota near the Memorial Union.
–Photo by Jeff Miller|University Communications

CONTENTS

ROBERT N. GOLDEN, MD
Dean, University of Wisconsin School of Medicine and Public Health
Vice chancellor for medical affairs, UW–Madison

As signs of spring emerge and we relish the change to this joyful season, our University of Wisconsin School of Medicine and Public Health (SMPH) "family" revels in additional happy events. In this issue of *Quarterly*, we celebrate some of the amazing accomplishments of our faculty, staff, alumni, and students.

Most recently, our school community delighted in the Match Day success of our graduating medical students, who learned where they will continue their training. Collectively, they will pursue the next phase of their development across the full continuum of disciplines at highly respected programs around the nation, including UW Health.

Our family pride continues as we highlight innovative programs in this issue's feature stories. The unique Building Equitable Access to Mentorship (BEAM) Program connects faculty mentors with Phase 1 medical students from groups historically underrepresented in medicine. You will read mentees' descriptions of the support they have received from mentors who have traveled similar journeys. We are grateful for the outstanding faculty members who dedicate their time and expertise to these trainees. Our Wisconsin Academy for Rural Medicine (WARM) has been wildly successful in achieving its aim: to create a robust pipeline of future doctors who will practice in underserved, rural areas of Wisconsin and enhance health for rural people and populations.

We applaud several SMPH faculty members, a staff member, and a medical student who have received UW–Madison and SMPH honors. Among them are Terri Young, MD, MBA; Patty Cisneros Prevo, MEd; and Ashley Scott, who received Outstanding Women of Color Awards from the university. Several faculty members—Lisa Barroilhet, MD, MS; Heidi Brown, MD, MAS; Pelin Cengiz, MD; Azita Hamedani, MD, MPH, MBA; Tabassum (Tabby) Kennedy, MD (PG '10); and Melissa Stiles, MD (PG '91)—received Women in Medicine and Science Awards through the SMPH's chapter of the Group on Women in Medicine and Science.

The Faculty Profile features the impressive research portfolio of Ed Chapman, PhD, a professor in the Department of Neuroscience at the SMPH and one of two Howard Hughes Medical Institute investigators at UW–Madison. In our Alumni Profile, we recognize the significant accomplishments of Athena Poppas, MD '89 (PG '92), a physician-scientist, chief of cardiology at Brown University, and immediate past president of the American College of Cardiology.

Turning our attention to history, I enjoyed the opportunity to celebrate the 100th anniversary of our Department of Biomolecular Chemistry. Chair Patricia (Tricia) Kiley, PhD, and her colleagues put together an amazing series of events honoring the century of achievements by the department's past and present faculty members, graduate students, and post-doctoral trainees. Here's to another incredible 100 years!

Also, you will read the poignant stories about Brittany Rodriguez, a first-year medical student, who describes how her stepfather's successful transplant at UW Health inspired her to become a doctor, and Nathaniel Chin, MD '10 (PG '16), an assistant professor in the Department of Medicine's Division of Geriatrics and Gerontology, who shares how the trauma of losing his father to Alzheimer's disease transformed him as a family member and physician.

As the last vestiges of ice disappear from Madison's lakes, we eagerly await other seasonal changes. If your spring or summer travels take you in this direction, please consider visiting your alma mater. We would love to show you all the facilities and programs that are blossoming like spring flowers at *your* school of medicine and public health.

There are two things I undoubtedly inherited from my grandmother: a love of list-making and of beginning with a fresh calendar. Each new year offers that euphoric combination of a momentary blank slate and endless possibilities. Now, just past the first quarter, my calendar contains many entries but plenty of room to explore new opportunities.

Since I wrote my message six months ago, alumni have supported the University of Wisconsin School of Medicine and Public Health (SMPH) in innumerable ways. Whether you are part of our wide network of physicians educating students across Wisconsin, donating to funds that allow the school to fulfill its mission, or participating in Wisconsin Medical Alumni Association (WMAA) programming, ours is a community known for altruism. In December 2022, more than 40 UW Health residents participated in Unfazed—The Real-Life Survival Guide to Phase 2, providing 100 of our second-year medical students with the opportunity to learn more about what to expect on clinical rotations. Now in its sixth year, Unfazed saw a number of residents paying it forward, as they have benefited from this event when they were students.

Our first-year medical students have taken over the reins from their predecessors who moved into clinical rotations. It is heartening to see them adopt the same spirit of service as those who walked before them. The new students have embraced their leadership roles and—using funds made available by donations to the WMAA Fund—they are engaging their fellow students to build programs focused on career exploration, community service, wellness activities, and more.

One of our organization's goals is to make it easier for you to keep up with happenings at your alma mater. To that end, we have increased the frequency of the *WMAA e-News*, now distributed every other month, and we will launch a new WMAA website in spring 2023. Stay tuned to **go.wisc.edu/wmaa** for expanded online offerings, including up-to-date information on events, opportunities to engage, and a new digital home for *Quarterly* magazine, which will continue to be available in print. In the meantime, you may use the website to update your contact information, sign up for the Student Alumni Partnership Program, nominate a colleague for a WMAA award, and more.

For many of you, *Quarterly* is a key bridge linking you to the SMPH. Recognizing that all of our online readers—especially those who use screen readers and other assistive technologies—benefit from accessible content, the PDF of this issue introduces formatting improvements designed to ensure that everyone is able to enjoy the magazine in a meaningful way. It is important to us that information and ideas travel across this bridge in both directions. Thus, we invite you to help shape the future of this magazine by taking our readership survey by May 15, 2023 (see details on back cover). We encourage you to take the survey online at **go.wisc.edu/quarterlysurvey** but if you need a printed survey, you may ask us to mail you one of a limited number of printed copies. If that is the case, please contact our team at **wmaa@med.wisc.edu** or (608) 263-4915.

It is a privilege to serve our Badger physicians, medical students, faculty members, and other friends of the SMPH. We are excited for the year ahead and look forward to continuing to fill our calendars with opportunities for you to engage with your alma mater and the WMAA—in person, in print, and online. On, Wisconsin!

TODD BROWN/MEDIA SOLUTIONS

SARAH B. ROTHSCHILD
Executive director, Wisconsin Medical Alumni Association

Jasmine Love

BY KENDI NEFF-PARVIN

BEAM Program

BUILDING EQUITABLE ACCESS TO MENTORSHIP FOR UNDERREPRESENTED MEDICAL STUDENTS

Jasmine Love remembers wanting to become a physician at an early age.

"When I was in elementary school, my vision was solidified when my grandmother became sick. She spent three months in intensive care units in Chicago, and that was the first time I saw what it meant to be a doctor," says Love, now a fourth-year medical student who will earn her medical degree in May 2023 at the University of Wisconsin School of Medicine and Public Health (SMPH). "My idea of being a doctor has transformed into the reality that I will be there to provide care for patients in their most vulnerable states. This is an opportunity to make an impact in my community—particularly among patients who look like me."

Because Love, who was raised by a single mother in Chicago's south suburbs, did not have anyone in her family who was a physician, she says, "I pretty much paved the way for myself in terms of preparing for a career in medicine."

Jalin Roberson, another soon-to-graduate SMPH medical student and the first person in his family to graduate from college, shares a similar story.

"My interest [in becoming a physician] began when my nephew was born prematurely. He spent a lot of time in the neonatal intensive care unit when I was in high school, and that was my first insight into what health care could be and how it could be life-changing for people," says Roberson, who grew up in Milwaukee. "That led me down this path."

> **"This is an opportunity to make an impact in my community—particularly among patients who look like me."**
>
> –Jasmine Love

It's for students like Love and Roberson that SMPH leaders created the Building Equitable Access to Mentorship (BEAM) Program. Now in its fourth year, BEAM is a unique, evidence-based mentoring program that matches trained faculty mentors with Phase 1 medical students from groups historically underrepresented in medicine (URM)—a cohort that comprises 35 percent of the fall 2022 entering class of medical students at the SMPH.

The idea for BEAM was conceived in response to feedback in 2018 from students of color—particularly those who identified as Black—who expressed discontent with the lack of connectivity with faculty members and each other, and what they perceived as a somewhat poor school climate, according to Angela Byars-Winston, PhD, the first Black tenured full professor in the Department of Medicine and a national leader in culturally aware mentorship for underrepresented students in the academic sciences.

With support from SMPH leaders in partnership with the Kern National Network for Flourishing in Medicine, Byars-Winston; Christine Sorkness, PharmD, RPh, distinguished professor (CHS), UW School of Pharmacy and SMPH Department of Medicine; Elizabeth Petty, MD '86 (PG '89), SMPH senior associate dean for academic affairs; and Tracy Downs, MD, FACP, former SMPH associate dean for diversity and multicultural affairs, teamed

Many of the faculty, staff, and medical students who participated in the BEAM Program in the 2022-2023 academic year

TODD BROWN/MEDIA SOLUTIONS

up to address these concerns, and they contributed to the launch of BEAM in 2019. Believed to be the only program of its kind in the United States, BEAM offers competency-based education and resources to faculty scholars who, in turn, serve as mentors for URM students.

"We decided to develop a program that isn't about mentoring people into medicine or a career specialty, but instead focuses on mentoring those students of color for cultural awareness and career persistence—staying power with their medical passions—and creating spaces in which they can learn strategies and tactics, and be heard and affirmed in their experiences," notes Byars-Winston.

More than 130 students and 31 mentors have been involved in BEAM to date, and 2023 marks a significant milestone—the first cohort of mentees will earn their medical degrees in May. Roberson and Love are among them.

Love was paired with Makeba Williams, MD, formerly an associate professor in the Department of Obstetrics and Gynecology, whom Love describes as "the first mentor I had who mirrored myself—a Black woman."

"I remember Dr. Williams reaching out during pivotal moments in my medical school career," Love recalls. "I appreciated our check-ins and always felt like I had someone to advise me, if needed, on academic and personal matters, as well as someone who was willing to advocate for me."

Love also credits Williams with making her transition to Madison easier and more welcoming—even inviting her to Thanksgiving dinner when Love could not make it home to celebrate with her family.

Before becoming BEAM mentors, faculty members complete 10 to 12 hours of evidence-based training that explores multiple mentoring models, case scenarios, and tools to improve mentoring. They complete three self-paced online modules, including one developed by Byars-Winston on culturally aware mentoring, followed by in-person group discussions led by Byars-Winston and Sorkness, who is a nationally recognized leader in mentorship and a National Research Mentor Network principal facilitator for research mentor training.

"We have the privilege of bringing what we know works from our research efforts into the BEAM Program," explains Byars-Winston. "Mentorship has to be approached with intentionality and cultural responsiveness. The UW School of Medicine and Public Health is racially homogeneous, and being here takes energy besides one's intellectual and cognitive skills to be a physician. So, we are deliberate about the curricula and about having scripts that help the mentor support the student's self-efficacy, their motivation for their medical career, and their cultural resilience."

Byars-Winston, Sorkness, and Petty serve as BEAM co-leaders alongside Jason Stephenson, MD, associate dean for multicultural affairs for health professions learners and an associate professor in the Department of Radiology. Manuel Santiago and

"As a faculty member from a background that's underrepresented in medicine, [the BEAM training] was one of the first times I've really had an opportunity to talk about my experience in academic medicine—how it has been affected by historical oppression and microaggressions—and to hear the experiences of others."

–Jason Stephenson, MD

Tia Rice support the program in their roles as director and multicultural affairs initiatives specialist, respectively, in the Office of Multicultural Affairs, in which BEAM is housed. Stephenson heads BEAM's steering committee and oversees its logistical operations. He also served as a mentor during the program's first two years before he stepped into his current role as an associate dean.

"The BEAM training was something I really looked forward to," reflects Stephenson. "For me, as a faculty member from a background that's underrepresented in medicine, it was one of the first times I've really had an opportunity to talk about my experience in academic medicine—how it has been affected by historical oppression and microaggressions—and to hear the experiences of others."

He adds, "That training fundamentally changed the way I look at teaching, working with students, providing guidance, and approaching my mentor/mentee relationships. It was important, and I have seen that happen with the other mentor cohorts. They feel connected to the process and the program, and especially to mentors they work with."

After training wraps up, new and returning mentors are grouped with two to three mentees in learning "pods"—a term Byars-Winston and Sorkness chose because of the way whales operate together in the ocean. The term also illustrates BEAM's goals, which center on building a cohesive, supportive community of diverse faculty members and students (see sidebar).

Patricia Téllez-Girón, MD (PG '00), associate professor, Department of Family Medicine and Community Health, has mentored numerous URM students over the past 20 years. Most recently, she has been a mentor for three BEAM pods, including mentees Gabriella Geiger and María Cecilia Abreu González in the 2021-2022 and 2022-23 academic years, respectively (see cover photo).

"From the beginning, I thought BEAM was a fabulous idea," states Téllez-Girón. "I have seen firsthand how minority students do not usually get the mentoring they need and do not feel comfortable sharing their stories or needs with people they feel might not understand what they are going through. I am in a special position to be able to see where they are coming from, how to advise them, and how to create opportunities for them."

"Medical school can be really lonely, but a thread throughout my medical school journey has been the sense of community that BEAM, in conjunction with the Office of Multicultural Affairs, has afforded."

–Cat Phouybanhdyt

The SMPH's Office of Multicultural Affairs is instrumental in recruiting and supporting both mentors and mentees, and inviting medical students who self-identify as URM to participate in BEAM when they arrive on campus. Students who opt in meet with their pods during an annual kickoff in January that features an icebreaker designed to foster excitement and build community. After that, mentors and mentees meet at least four times during the school year, in casual and more structured settings. Activities range from attending monthly dinners hosted by the Office of Multicultural Affairs and other events sponsored by SMPH units, to volunteering together in the community, or simply checking in to discuss questions and concerns. What matters most is not the venue, but the connections BEAM provides.

"Medical school can be really lonely, but a thread throughout my medical school journey has been the sense of community that BEAM, in conjunction with the Office of Multicultural Affairs, has afforded," says Cat Phouybanhdyt, an SMPH student in the dual MD/master of public health degree track, who anticipates graduating in 2024.

The daughter of Laotian refugees, Phouybanhdyt grew up in Waukesha, Wisconsin. Her mother is a nurse, but in her younger years, Phouybanhdyt did not have physician role models who understood her cultural experiences.

"I'm a firm believer in mentorship," states Phouybanhdyt, who also had a mentor through the UW–Madison Chancellor's Scholarship Program when she was an undergraduate student. "As students, it's one thing to feel a sense of community among student organizations and cultural affinity groups. But to have mentors who can relate to what we are going through—people we can be authentic and vulnerable with—is invaluable."

Agreeing, Roberson adds, "Especially for underrepresented students, going through medical school is daunting. If you do not have those connections, the BEAM Program supplements that experience by pairing you with somebody who has been through it, who can help you through it and be there to listen."

Byars-Winston points to an African proverb that aptly summarizes the positive impact BEAM has had for mentees and mentors: "If you want to go fast, go alone; if you want to go far, go together."

She concludes, "That's what the BEAM Program provides."

BEAM Goals

The University of Wisconsin School of Medicine and Public Health's Building Equitable Access to Mentorship (BEAM) Program aims to:

- build a cohesive and supportive community of faculty and students from diverse communities that are underrepresented in medicine (URM) in Wisconsin
- identify URM faculty members to participate in BEAM and provide mentorship to BEAM Phase 1 students
- enhance the experience of diverse faculty members and students for connectedness within the SMPH through professional development and social networking
- provide opportunities for faculty members from diverse communities to support SMPH initiatives through involvement in activities that sustain the diverse URM students in the school's training programs

Match Day

THE THEME OF "WHERE TO NEXT?" PLAYS OUT FOR SOON-TO-GRADUATE MEDICAL STUDENTS

PHOTOS BY TODD BROWN AND JAY GULLIXSON

Opposite page (left to right): Top row: Megan Murphy-Belcaster and her family celebrate; Alma Farooque shares her match. Bottom row: Mario Matabele and Kasey Wood Matabele pin the location of their match as a couple; Sharon-Rose Nartey shows her match. Above: Top row: Felix Braun poses near a directional sign; Becky Martin and her family thrill to her news. Bottom row: Members of the Wisconsin Academy for Rural Medicine in Green Bay gather (top row: Michael Medich, MD, Isaac Dzubay, Christopher Karow, Brock Gilsdorf, Clayton Skogman, Jacqueline Clem; bottom row: Danielle Hurst, Lauren McKay, Olivia Johnson, Trevor Gauthier); Alecia Vang announces her residency.

Because excitement and nerves often accompany travel plans, the student-selected theme of "Where to Next?" perfectly complemented Match Day at the University of Wisconsin School of Medicine and Public Health (SMPH).

The theme symbolized students' next steps for clinical residency training, which may involve travel across the country, as well as a metaphorical trip to the upcoming stage of medical education. For the hybrid event, some students and guests gathered at the Health Sciences Learning Center, while others tuned in from around the globe.

Festivities on Friday, March 17, 2023, started with skits by medical education leaders posing as the Match Day's flight crew, followed by a speech from the "pilot," Dean Robert N. Golden, MD.

"You should start your residency travels with a general sense of where you are going, but stay flexible and open to new opportunities and flight changes," Golden told the students. "No matter where your professional journey leads you—whether it is in primary care or subspecialty practice, in research, community practice, academics, or administration—always keep your focus on the patient."

SMPH medical students who participated in the match process will be interspersed among 29 states plus the District of Columbia. More than a third of matching students are pursuing primary care in family medicine, internal medicine, or pediatrics. A third of those who matched will complete residencies in Wisconsin, and others plan to return to practice in the Badger State after their residencies—invigorating a vital physician workforce for Wisconsin.

Madeline Brown

JAY BROWN

BY KRIS WHITMAN

Rural Health

MD TRAINING TRACK FOCUSES ON UNDERSERVED POPULATIONS AND UNDER-RESOURCED SETTINGS

In Wisconsin, only seven percent of physicians have rural practices, according to the Wisconsin Council on Medical Education and Workforce in 2021. Further, studies show that rural populations—compared to urban dwellers—are generally sicker, poorer, older, and more likely to be uninsured. With the goal of easing these disparities, the University of Wisconsin School of Medicine and Public Health (SMPH) launched the Wisconsin Academy for Rural Medicine (WARM) in 2007, with its first graduates entering residencies in 2011.

"We recruit medical students who intend to practice rural medicine and help improve health in rural Wisconsin," says Joseph P. Holt, MD, director of WARM. "Our students emerge prepared for residencies in any medical specialty, as rural Wisconsin health systems need physicians in many specialties, particularly family medicine, internal medicine, and pediatrics."

Madeline Brown, a third-year WARM student, exemplifies the trainee envisioned by program leaders. She dreamed of becoming a physician since her youth in Salem, Wisconsin. When she experienced a serious knee injury while playing varsity volleyball, she witnessed the expertise of medical professionals who helped her return to her sport.

"The program matched my lifestyle and goals, including how and where I want to raise my family, all while striving to combat the growing shortage of providers in rural Wisconsin."

—Madeline Brown

Wanting to help patients in a similar way, Brown went on to earn a bachelor's degree in biomedical science with a double-minor in chemistry and Spanish at UW-La Crosse. As an undergraduate, she shadowed medical professionals at Gundersen Health System and volunteered on medical and public health missions in Guatemala.

"I realized my ability to connect with people was a gift I could not let fall by the wayside. I loved meeting new people from different walks of life, learning from them, and figuring out ways I could give back to them," she recalls. "I also loved the challenge that (pre-)medicine provided; it always pushed me to be a better person. I grew more conscientious of who I was because I knew who—and what—I wanted to become."

Brown adds, "The fact that the SMPH integrates public health into its curriculum was a huge draw—I wanted that extra knowledge, because I realized the better I understand the community around me and which factors determine their health, the better doctor I can be."

Hailing from a small town and wanting to eventually live in a small community "where everyone knows everyone," with ample outdoor recreation nearby, Brown chose the WARM program.

"The program matched my lifestyle and goals, including how and where I want to raise my family, all while striving

to combat the growing shortage of providers in rural Wisconsin," says Brown, whose training is based in Marshfield, Wisconsin, with clinical rotations in several small towns.

Noting that continuity of care is a "must-have" in her career, she says, "WARM's training has exceeded my expectations. Smaller clinics and health care teams allow for more one-on-one teaching and hands-on experiences—anything from joint injections to catching babies—and I've enjoyed every bit of it."

Brown continues, "I am most interested in family medicine because it will allow me to build strong relationships while caring for a variety of patients—kids, adults, whole families, elderly people. The field is conducive to being a 'jack-of-all trades,' as there isn't always the ability to refer out, especially considering how far some patients would have to travel to get to another facility. I feel most passionate about promoting healthy lifestyles and empowering patients to set goals and make lifestyle changes to reach those goals."

Further, Brown wants to incorporate teaching and/or mentoring into her career because many dedicated mentors have helped her along the way. She shares gratitude for her strong support system, including her family, fiancé, friends, former coaches, and more.

AURORA BAYCARE MEDICAL CENTER

Participants in the fall 2022 Advanced Wilderness Life Support course carry a mock patient on a stretcher they improvised using available supplies.

Four Campuses

The four-year WARM program—a subset of the SMPH's MD program—accepts 26 medical students per year. Each student spends Phase 1 of the curriculum at the main campus in Madison and spends Phases 2 and 3 at one of the following locations:

- Aurora BayCare Medical Center, Green Bay
- Gundersen Health System, La Crosse
- Marshfield Clinic Health System, Marshfield

WARM students also complete clinical rotations in small towns. Dozens of physicians play crucial roles as volunteer preceptors throughout the state.

Statewide Core Days

All WARM students participate in intensive "core days," during which they gain hands-on experiences they will use throughout their careers. All Phase 2 WARM students hone ultrasound skills in Marshfield and participate in a mock disaster drill in La Crosse. And Phase 3 WARM students learn Advanced Wilderness Life Support (AWLS) in Green Bay.

The latter is led by Michael Medich, MD, a retired emergency medicine physician at Aurora BayCare Medical Center, Green Bay, and an adjunct clinical professor in the SMPH Department of Emergency Medicine. He also is the regional director of the WARM program and director of medical education at Aurora BayCare Medical Center and BayCare Clinic.

"I have a passion for emergency medicine, and it fit well with my personality and interests," says Medich, who grew up in a small town in northern Minnesota; earned his medical degree from the University of Minnesota School of Medicine, Minneapolis, including training at Royal Infirmary Hospital, Scotland; and completed an internal medicine internship and emergency medicine residency at Spectrum Healthcare, Grand Rapids, Michigan.

Michael Medich, MD

Medich has been a preceptor for medical students throughout his more

than two decades at Aurora BayCare, and he began teaching WARM students there in 2009. Because that center does not have residents, WARM students work directly with attending physicians.

An avid outdoors person and longtime volunteer in Scouts BSA, Medich has participated in medical missions in Nepal, Trinidad, Nicaragua, Haiti, and Honduras. He stresses that physicians can be called into service in low-resource settings anytime, anywhere, near or far from home.

For example, he says, "I was hiking in the Black Hills with my son and girlfriend, and we came across a guy who had fallen 30 feet from a cliff, four hours from the trailhead. He had multiple broken ribs that caused a lung injury, two breaks in one arm, and likely hypothermia. We were able to call ahead for EMS and carry him out to safety. If we had not found him, he probably would have died."

"Understanding the unique pathologies that present in a wilderness setting, and thinking outside the box to make do with the resources available to us—these are some of the main themes of [the AWLS] course."

—Trevor Gauthier

Initially, in 2021, Medich and Jacqueline Clem, medical education program manager, Aurora BayCare Medical Center—another avid outdoors person who has witnessed accidents while four-wheeling in Oregon—developed a pilot AWLS course for Green Bay WARM students. In fall 2022, the popular course became a required core day for all WARM students from across the state in their final year of medical school. AWLS includes a three-year certification for those who pass the written and hands-on skills exams.

For the intense, 20-hour AWLS course—which earned a student rating of 4.8 on a 5-point scale for teaching effectiveness—Medich led a team of emergency physicians, along with paramedics from De Pere Fire Rescue, to teach activities in which students used items like canoe paddles, tarps, sleeping bags, and ski poles to care for mock patients who acted out serious injuries and illnesses that could happen in the wilderness.

Medich points out that medical students receive excellent training in hospitals and clinics that have ample resources, and in the AWLS training, they learn skills that could be helpful in situations like power outages or supply shortages, or in any low-resource setting that requires creative thinking and using what you have on hand to provide medical care.

Trevor Gauthier, Brock Gilsdorf, Danielle Hurst, and Christopher Karow—all in their final semester of WARM in Green Bay—participated in the course.

Gauthier, who grew up near Green Bay and aims to practice anesthesiology in a rural area around there, recalls, "Collaboration with our peer learners; understanding the unique pathologies that present in a wilderness setting; and thinking outside the box to make do with the resources available to us—these are some of the main themes of this course."

Calling the AWLS course "one of the highlights of my time as a WARM student," Hurst says, "I enjoy many outdoor activities, including scuba diving, hiking, and water sports. I can see these skills being useful in those scenarios, and in counseling patients before they go on a big adventure!"

As someone who hails from northeast Wisconsin and hopes to enter a general surgery residency in that region through a couples match, Hurst wants to improve care for underserved patients.

About the AWLS course, Karow says, "We learned how to manage conditions like heat stroke, hypothermia, and various traumas. We also covered how to manage animal attacks, burns, drownings, and much more. Through hands-on sessions, we were able to put into practice the skills we learned in the lectures and discussions to prepare ourselves to address the real-world situations we may encounter."

WARM Success

- 252 graduates between 2011 and 2022
- 45.6% matched to residencies in Wisconsin (28% for traditional MD students)
- 50% entered primary care residencies (39.4% for traditional MD students)
- 32% entered psychiatry, obstetrics and gynecology, general surgery, and emergency medicine residencies, which are all specialties in great demand in rural areas

Post-residency:

- 82% are practicing in Wisconsin
- 49% are practicing in rural Wisconsin
- 32% are practicing near their hometowns

Trainee Reflections

Karow, who plans to practice pediatrics in northeast Wisconsin, notes, "During my rural medical training, I have witnessed the incredible value a rural physician can provide the communities they serve. Rural physicians are able to meet patients where they're at and utilize the resources available in their communities to meet patients' needs."

He continues, "I'm passionate about helping patients form lifelong healthy habits. I'm also passionate about the ways in which public health initiatives can improve children's health in an entire community, even more so in rural communities."

Gauthier shares, "A huge strength of the WARM program is that it allows medical students like me to train in the towns and hospitals where they are considering working one day. Many of the physicians I worked with in Green Bay were graduates of the WARM program. I think this is a testament to the effectiveness of the program in training physicians who not only want to live and work in Wisconsin, but who are passionate about training the next generation of physicians who share the same aspirations."

He continues, "In the WARM program, a lot of our public health work has been with rural communities. For example, several classmates and I worked with the Diabetes Prevention Program through the YMCA of Door County to create and deliver a presentation to participants about the development of diabetes, its

—continued on page 35

Blazing Trails for Women in Cardiology

ATHENA POPPAS,
MD ’89 (PG ’92)

AMERICAN COLLEGE OF CARDIOLOGY

by Michael Felber

After she earned her medical degree from the University of Wisconsin School of Medicine and Public Health (SMPH) in 1989, it would have been easy for Athena Poppas, MD '89 (PG '92), to have chosen a specialty that was more typical for women.

But taking the path of least resistance has never been Poppas' style. She was intrigued by cardiology and was not about to let the sparse representation of women in the field steer her away from realizing her dream.

"Dr. Poppas was an incredibly smart and serious medical student at the UW School of Medicine and Public Health and resident at UW Health," reflects Patrick McBride, MD '80, MPH, emeritus professor of medicine and former associate dean for students at the SMPH, and a retired cardiologist at UW Health. "She was among very few women in our program who decided to specialize in cardiology. It's a challenging field in its own right, let alone for a woman entering a heavily male-dominated specialty at the time. Despite that, I knew she would be going places because she was brilliant, and she worked incredibly hard."

A native of Janesville, Wisconsin, Poppas completed an internal medicine residency at UW Health and a cardiology fellowship at the University of Chicago. Next, in 1998, Poppas joined the faculty in the Division of Cardiology at the Warren Alpert Medical School of Brown University in Providence, Rhode Island. Over the past 25 years there, she has amassed a substantial array of awards for her clinical, teaching, and research accomplishments.

A Rare Female Cardiology Chief

Since 2017, Poppas has been chief of the Cardiology Division and a professor of medicine at the Warren Alpert Medical School. She also serves as director of the Lifespan Cardiovascular Institute of Rhode Island, The Miriam and Newport Hospitals, where she leads a faculty of 45 and specializes in echocardiography and treatment of patients with valvular heart disease and heart disease during pregnancy. Poppas is one of very few female cardiology chiefs in the United States.

Thinking back three decades to her internal medicine residency at UW Health, Poppas says she felt supported by her peers and mentors, and she ignored any odd comments because of her gender. She was encouraged to dream big by her assigned mentor, Mary (Molly) Carnes, MD, MS '01 (PG '81), professor emerita, Departments of Medicine and Psychiatry, SMPH, and Industrial and Systems Engineering, College of Engineering.

"I wanted to lead by example and to improve the system for the future," Poppas says. "In my leadership roles at Brown and within the cardiology field nationally, I've focused on making cardiology a more welcoming specialty for women and others."

A Platform for Advocacy

After serving in many leadership roles in the American College of Cardiology (ACC), including as a member of the board of trustees, chair of scientific sessions, and chair of the Women in Cardiology Section, Poppas rose to become the organization's board chair and president in 2020–21. Her priorities included helping all underrepresented groups, including women in cardiology, overcome barriers and enhancing overall physician well-being.

"Colleagues and I explored a number of avenues to improve the climate for women, including increasing female representation at meetings and shining a brighter light on issues such as compensation, discrimination, and sexual harassment," Poppas says. "We also started a health equity task force and advocated for greater physician well-being, which is often overlooked but has become more salient during the COVID-19 pandemic."

Although more than half of all medical students are female, women currently represent no more than 15 percent of practicing cardiologists and 18 percent of cardiology fellows, according to ACC data.

AVA POPPAS

Left to right: Sophia, Nick, and Alex Gould; Philip Gould, PhD; and Athena Poppas, MD '89 (PG '92)

"We've made progress since my fellowship days, when fewer than one in 10 cardiologists were women," Poppas says. "Clearly, however, we have a long way to go."

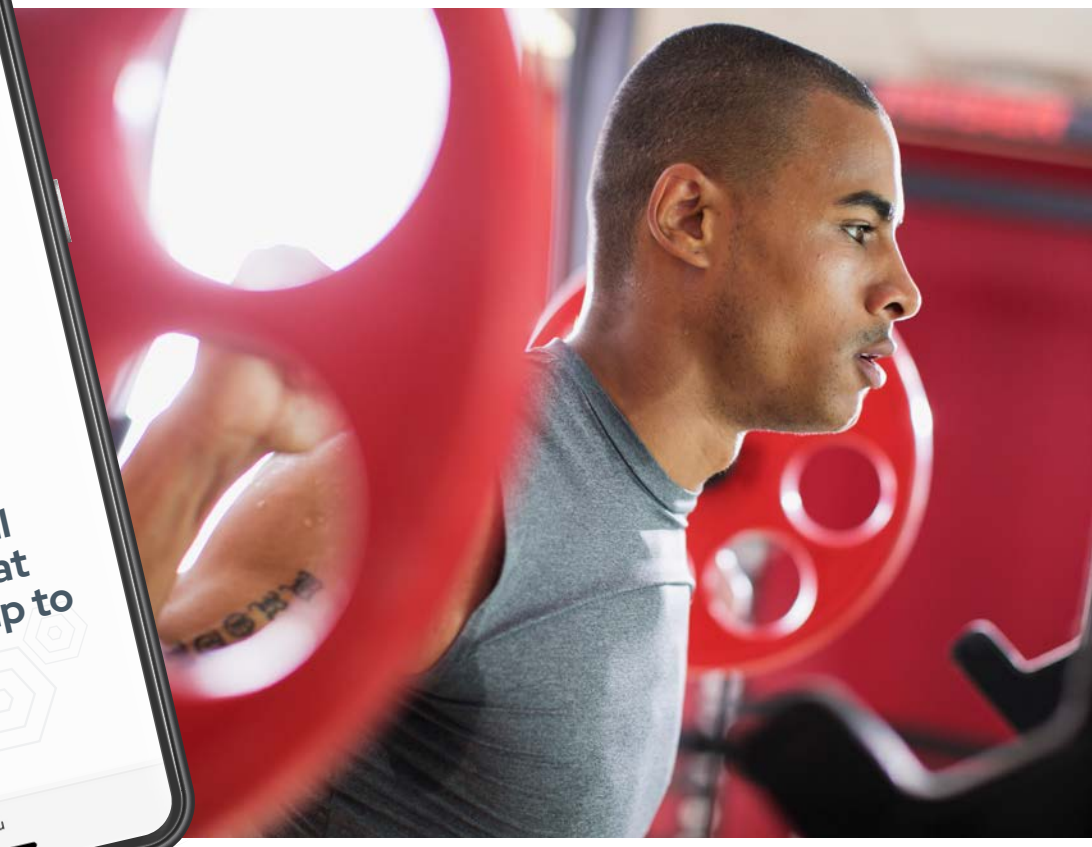
Poppas attributes much of her passion and commitment to her late mother, Bessie Poppas, who was an investigative journalist when few of her women colleagues were assigned to cover hard news.

"While working for the *Milwaukee Journal*, my mom asked if she could cover politics, but they told her it was too complicated and 'dangerous' a beat for a woman," Poppas recalls. "Initially, they assigned her to the society page. She also advocated for equal pay for equal work, which few women did in the 1950s."

Poppas and her husband, Philip Gould, PhD, an English professor at Brown and fellow UW–Madison alum, have three grown children: Alex, Sophia, and Nick Gould. The family enjoys outdoor activities, including skiing, kayaking, and canoeing.

McBride, who worked with countless medical students, residents, and fellows throughout his 40-year career at UW–Madison, says he is proud of Poppas' achievements and considers her to be among the top five percent of trainees he has mentored.

"It's really heartwarming to see Dr. Poppas reach a pinnacle that she so richly deserves," McBride says. "When you consider everything cardiology asks of someone, Dr. Poppas is nothing short of an exceptionally accomplished clinician, researcher, and trailblazer."



RYAN KEHOE, MD '01 (PG '06)

I am in private practice with Aspen Orthopedic Specialists and the Orthopaedic Hospital of Wisconsin, which serve the greater Milwaukee area.

My practice consists of predominantly shoulder, elbow, hand, and knee pathology. Each week, I spend three and a half days in the office and a day and a half in the operating room. I devote most of my time to managing non-operative orthopedic issues. My operative interventions include mostly arthroscopic procedures, as well as shoulder and knee replacements.

Although the grand majority of outcomes in orthopedic sports medicine are extremely gratifying, it is the rare bumps in the road and clinical challenges that stand out in my memory.

I always enjoy seeing some of my longest-tenured patients to follow their progress many years after a procedure. This reminds me of how quickly time flies.

I chose orthopedic surgery—and specifically sports medicine—because I enjoy the opportunity to fix things and restore function with consistently great outcomes. I had an interest in this field going into medical school, and my experiences during my training reinforced my interests. Following my medical school graduation, I completed an orthopedic surgery residency at UW Health in Madison and a sports medicine fellowship at the American Sports Medicine Institute in Birmingham, Alabama, under James Andrews, MD.

I am a fellow of the American Academy of Orthopaedic Surgeons and the American Orthopaedic Society of Sports Medicine.

I strongly encourage medical students to consider pursuing orthopedic sports medicine.

JENNIFER LHOST, MD '14

My practice at Children's Hospital of Philadelphia includes mostly seeing patients who have acute and chronic injuries, sprains, strains, fractures, and concussions. Beyond that, I see nearly anything else that could happen while playing a sport or that impacts an athlete's ability to participate in their sport, such as dental injuries, skin concerns, nutrition and fitness, mental health, sleep issues, asthma, and diabetes.

One of my patients took her diagnosis of bilateral femoral stress fractures and turned her struggle with relative energy deficiency in sport, known as RED-S, into an opportunity to advocate for better awareness and education at the national level. She is now successfully competing in Division 1 track and cross country.

I knew sports medicine was the career for me after I completed a sports medicine elective in medical school. As an athlete, I had good and bad experiences when I was a patient, but being able to work at the UW School of Medicine and Public Health with Greg Landry, MD (PG '83, '84), one of the pioneers in pediatric sports medicine, really cemented my love for the field.

I completed a pediatrics residency at Medical College of Wisconsin/Children's Hospital of Wisconsin in Milwaukee and a pediatric primary care sports medicine fellowship at University Hospitals/Rainbow Babies and Children's Hospital in Cleveland. I am a member of the American Medical Society for Sports Medicine and the American Academy of Pediatrics Council on Sports Medicine and Fitness.

I believe that sports medicine is the perfect specialty for anyone who likes to do a little bit of everything because many other specialties intersect with this field in some way. I find

it fun to work at games and events. Sometimes I even get to work with professional and Olympic athletes. This was the case in summer 2022, when I worked in Greece for the world championships with the U.S. U16 Women's Water Polo Team.

ADRIAN TABARES, MD '11

As a family and sports medicine physician at Sutter Sacramento in California, I devote half of my day to primary care, including performing well-baby visits and annual physicals, and cultivating long-standing patient relationships. I spend the other half of my day consulting on sports medicine cases and performing diagnostic and ultrasound-guided procedures in the office.

A memorable case involved a patient who was suffering from common extensor tendinopathy, also known as lateral epicondylitis. This patient's symptoms had been present for two years, and one of his goals was to hold his infant son without pain. I performed an ultrasound-guided fenestration procedure of his common extensor tendon. In combination with therapy, he was ultimately able to achieve his goal. I was touched when he later wrote that I had given him his life back.

I chose sports medicine because I love being able to help people return to activities they enjoy. My goal is to keep people active for as long as possible so they can lead healthy, fulfilling lives. I learned about this specialty in my first year of medical school, when I shadowed John Wilson, MD '03 (PG '06, '08). Later, I realized that I also wanted to use the knowledge I had acquired in primary care, so I chose to continue practicing both specialties.

I completed my residency at University of California (UC), Davis, and my sports medicine fellowship at UC, San Diego. I participate in the American Medical Society for Sports Medicine, and I am part of their Sports Ultrasound Committee.

Sports medicine is an extremely gratifying field, and those who enter it can tailor it

to fit their interests. This can include treating professional athletes, covering sporting events, or taking care of people in the community.

Class Notes

Compiled by Andrea Larson

CLASS OF 2017

Ngoc Pham completed fellowships in obstetrics and addiction medicine, and she is now a physician faculty member at Swedish Cherry Hill Family Medicine in Seattle. She notes that she is excited to combine her love of addiction medicine with surgical obstetrics while caring for marginalized patients and being part of a program that focuses on social justice. Pham lives with her husband and their two dogs. She enjoys hiking, trail running, water sports, traveling the world, and dining during her travels, especially enjoying Vietnamese food.

CLASS OF 2014

Daniel Shapiro received the Kidney Cancer Association's (KCA) inaugural Christopher G. Wood Rising Star Award at the 2022 International Kidney Cancer Symposium: North America. This award included an invitation to speak at the WoodFire session at the symposium. The award was named for the former chair of the KCA board and was established to recognize junior-level faculty members who show promise in advancing kidney cancer treatment and patient care. This honor reflects Wood's dedication to educating, mentoring, and supporting the next generation of kidney cancer providers and his impact on patients.

CLASS OF 2012

Jason Habeck, an orthopedic surgeon at the Watertown (Wisconsin) Regional Medical Center for Orthopedics and Sports Medicine since 2018, was appointed chief of staff in January 2023. Board-certified in orthopedic surgery and fellowship-trained in hip and knee replacements, Habeck completed his orthopedic residency at Western Michigan University Homer Stryker MD School of Medicine in Kalamazoo, and his adult reconstruction fellowship at Florida Orthopaedic Institute in Tampa.

CLASS OF 2008

Emily Ruedinger received an inaugural Catalyst Award for Transformation in Graduate Medical Education by the Josiah Macy Jr. Foundation. An assistant professor and associate residency program director in the UW School of Medicine and Public Health's Department of Pediatrics, Ruedinger is a co-principal investigator of the project, Simulation-Based Macroaggressions Training for Residents and Faculty. Team members of the year-long study expect the simulation methodology to be more effective than classroom discussions.

CLASS OF 2007

Amy Fowler was recently awarded a five-year, $3 million R01 grant from the National Institutes of Health for her project, Precision Imaging of Breast Cancer for Guiding Neoadjuvant Endocrine Therapy. Also, since March 2022, Fowler has been an associate editor for the journal *Breast Cancer Research*. She is an associate professor of radiology at the UW School of Medicine and Public Health.

CLASS OF 2005

Amanda Preimesberger was elected to the national Direct Primary Care Alliance Board of Directors. The non-profit organization provides leadership and guidance through physician-led education, mentorship, and advocacy. Preimesberger is the founder and physician owner of the Verona, Wisconsin-based RootsMD Direct Care Family Medicine, a membership-based model of care delivery in which individuals pay their primary care physician directly. Following her residency in the UW School of Medicine and Public Health's Department of Family Medicine and Community Health, she practiced family medicine with obstetrics for more than 15 years before she founded RootsMD. She and her husband live in Verona and have four sons, who range from 12 to 17 years old.

CLASS OF 2000

Ann Catlett was named among *BRAVA* magazine's 2023 Class of Women to Watch. The 12 women are change-makers, leaders, and creative thinkers who have ideas that can shape entire industries. Catlett co-founded Madison Area Care for the Homeless in 2015. She started the nonprofit Solace Friends in 2018 to provide end-of-life care for people who are housing-insecure, impoverished, or don't have a place or people to turn to at the end of life.

CLASS OF 1996

Don Selzer began serving as the advocacy pillar lead on the American College of Surgeons' Board of Governors in November 2022. He is the Willis D. Gatch Professor of Surgery; program director, Fellowship for Advanced Gastrointestinal and Bariatric Surgery; chief, Division of General Surgery; and associate chair, Department of Surgery, Indiana University School of Medicine.

CLASS OF 1973

Richard Boxer was appointed by President Joe Biden to the National Cancer Advisory Board (NCAB), which guides the National Cancer Institute director in setting the course for the national cancer research program. The NCAB will complement the Cancer Moonshot initiative, which President Biden reignited to end cancer as we know it today. Boxer is a clinical professor of urology at the David Geffen School at the University of California, Los Angeles. He has represented the United States at the World Health Organization as a private citizen, and he recently served on the board of directors of the American Society of Clinical Oncology's Conquer Cancer Foundation.

CLASS OF 1956

Robert Weaver received in late 2022 the President's Lifetime Achievement Award for his lifelong commitment to building a stronger nation through volunteer service. He has been a steadfast American Red Cross volunteer since 1990.

In Memoriam

William J. Little Jr., MD '44
Mount Pleasant, Wisconsin
February 28, 2023

Charles B. Larkin, MD '49
Corona Del Mar, California
October 5, 2022

Harold F. Ibach, MD '51
Austin, Texas
September 30, 2022

Alice R. McPherson, MD '51 (PG '58)
Houston, Texas
January 16, 2023

Roy W. Zimmer Jr., MD '53
Tucson, Arizona
October 16, 2022

John H. Rockey, MD '55
Philadelphia, Pennsylvania
January 22, 2022

Lowell D. Froker, MD '58
Orinda, California
May 15, 2022

John D. Loeffler, MD '58
Sacramento, California
December 9, 2022

Eugene J. Zavrl, MD '58
Green Valley, Arizona
November 27, 2022

Mitchell A. Rapkin, MD '60
Madison, Wisconsin
November 13, 2022

Anthony P. Mazarek, MD '67
Stevensville, Maryland
January 7, 2023

Steven H. Hoyme, MD '71
Augusta, Wisconsin
November 14, 2022

James A. Robert, MD '77
Palm City, Florida
January 9, 2021

Rohinee Beri, MD '04
Chicago, Illinois
February 2, 2023

FORMER FACULTY MEMBERS

Rebecca M. Blank, PhD
Madison, Wisconsin
February 17, 2023

James H. Brandenburg, MD '56
Spring, Texas
November 17, 2022

Gary E. Lyons, PhD
Madison, Wisconsin
January 30, 2023

John H.N. Morledge, MD
Madison, Wisconsin
December 29, 2022

Thomas S. Stevens, MD
Waunakee, Wisconsin
December 26, 2022

Goodbye Dear Friends

REBECCA M. BLANK, PHD

Rebecca M. Blank, PhD, an economist and educator who served in high-level U.S. government and academic positions and as chancellor of University of Wisconsin–Madison, died of cancer on February 17, 2023, near Madison. She was 67.

At UW–Madison from 2013 to 2022, Blank focused on improving educational outcomes and the student experience, further elevating the university's world-class faculty and placing the university on firm financial footing through private fundraising and inventive strategies. She was known for her direct style, quick analysis, and dry sense of humor, all while leading one of the country's top public research universities through a complex political period and the COVID-19 pandemic.

"We have lost an incredible leader, and an even more incredible person. The UW School of Medicine and Public Health (SMPH) will always remember UW–Madison Chancellor Emerita Rebecca Blank as a steadfast and dedicated partner in advancing the health of people and populations. Her family members are in our thoughts and prayers. Her legacy will serve as a strong foundation for the continued pursuit of our vision," shares Robert N. Golden, MD, SMPH dean and UW–Madison vice chancellor for medical affairs.

Blank's desire to elevate Wisconsin touched all facets of the institution. She made strides expanding campus diversity, and she was a prolific fundraiser, leading the All Ways Forward campaign, which raised funds for 327 new faculty funds and more than 5,000 new scholarships.

During her years as chancellor, she served on the boards of multiple national organizations, including the Association of Public and Land-Grant Universities, the Association of American Universities, and as chair of the Big Ten Council of Chancellors and Presidents.

Blank earned a doctorate in economics at the Massachusetts Institute of Technology. Throughout her career, she interspersed academic work with government service. She held faculty appointments at Princeton University, Northwestern University, and the University of Michigan, in addition to UW–Madison. She published close to 100 articles and several books.

Blank received the Daniel Patrick Moynihan Prize from the American Academy of Political and Social Science in 2015 and, in 2021, became the first UW–Madison economist to be named a distinguished fellow of the American Economic Association.

She was a senior staff member on the Council of Economic Advisors during the George H.W. Bush administration and served as a member of the council during the Bill Clinton administration. In 2009, she accepted the role of undersecretary for economic affairs at the U.S. Department of Commerce under President Barack Obama. She moved into the role of deputy secretary and served more than a year as acting secretary in the Obama cabinet.

In June 2022, Blank became chancellor emerita and departed for the position of president at Northwestern University in Evanston, Illinois, the first woman to hold that title. However, she withdrew prior to beginning that role due to her cancer diagnosis.

GARY E. LYONS, PHD

Professor Emeritus Gary E. Lyons Jr., PhD, passed away on January 30, 2023, at age 65, in Madison, Wisconsin.

Born in Fitchburg, Massachusetts, Lyons received a doctorate in anatomy from the University of Pennsylvania. He completed his post-doctoral training at Stanford University and the Pasteur Institute in Paris. In 1991, he joined the faculty of the University of Wisconsin School of Medicine and Public Health's Department of Anatomy, now called the Department of Cell and Regenerative Biology.

For 28 years, until he retired with emeritus status in 2019, Lyons was a highly revered educator, researcher, collaborator, and mentor in that department. He was passionate about science and teaching.

In his research laboratory—which focused on the characterization of novel genes in the mouse cardiovascular system using gene-trapping techniques—Lyons mentored undergraduate and graduate students, post-doctoral fellows, and visiting professors. He published more than 130 scientific papers and book chapters based on his work advancing the understanding of cardiac developmental biology, often using stem cells as a powerful tool. He was a member of the UW Stem Cell and Regenerative Medicine Center, and he

especially enjoyed collaborating with a variety of colleagues throughout the SMPH and UW–Madison.

Lyons also was known as an enthusiastic and approachable instructor for first-year medical students.

"Thousands of medical students adored Dr. Lyons for his outstanding teaching, compassion toward them, and willingness to help them in times of need. He was a role model of how to live a life," notes Patrick McBride, MD '80, MPH, former associate dean for students and an emeritus professor of medicine. "He also was a dear friend and colleague."

Lyons served on several UW–Madison and community committees, of which he was particularly honored to serve on the Medical School Admissions Committee, the Disability Accommodation Advisory Committee, the UW–Madison Teaching Academy, and—for 10 years—the Stem Cell Research Oversight Committee; for the latter, he was chair for eight years, during a time when the science and politics of human pluripotent stem cells were rapidly evolving.

Having received numerous academic and teaching awards, Lyons was most proud of those conferred upon him by his students. Specifically, he received the Wisconsin Medical Alumni Association Distinguished Basic Sciences Teaching Award in 2006 and 2014. This award recognized the most distinguished basic science teacher in the first two years of medical school as identified by second-year medical students.

"While Dr. Lyons was an innovative, impactful scientist, his passion for teaching and mentoring was perhaps his greatest joy and most enduring contribution to our school," notes SMPH Dean Robert N. Golden, MD. "We will always be grateful for his support and dedication to an entire generation of students."

A memorial fund has been established in Lyons' honor. Please see *give.wiscmedicine.org/GaryLyonsScholarship* for details.

ALICE R. MCPHERSON, MD '51 (PG '58)

On January 16, 2023, the University of Wisconsin School of Medicine and Public Health (SMPH) and UW–Madison lost a remarkable friend and alumna, Alice R. McPherson, MD '51 (PG '58), at age 96.

McPherson earned her undergraduate degree from UW–Madison in 1948 and her medical degree from the SMPH in 1951; she completed an ophthalmology residency at the SMPH and a retina fellowship at the Massachusetts Eye and Ear Infirmary. In 1960, she moved to Houston to begin practice as the world's first female full-time vitreoretinal specialist. She became one of the foremost retina specialists in the world and was widely respected as a physician, teacher, scholar, and leader.

Serving for years as an ophthalmology professor at Baylor College of Medicine, McPherson also founded Baylor's retina service in 1960 and established a private retina practice. She promoted several procedures that are now basic elements in successful retinal detachment surgery and diabetic retinopathy treatment.

McPherson was a strong advocate for advancing retina research worldwide. In 1969, she established the Retina Research Foundation (RRF) in Houston. Under her leadership, the RRF has funded more than 1,000 grants and helped launch the careers of many major vision researchers.

Her inspiration was critical in the 2005 co-founding—with Daniel M. Albert, MD, chair emeritus, SMPH Department of Ophthalmology and Visual Sciences (DOVS)—of the UW Eye Research Institute. In 2012, the institute was rededicated as the McPherson Eye Research Institute. There, a large, multidisciplinary community of scholars works to advance knowledge about the science and art of vision and apply it to the prevention of blindness. McPherson was pleased to see the institute gain international prominence.

According to McPherson Eye Research Institute Director David Gamm, MD, PhD (PG '02, '03), a DOVS professor and UW Health pediatric ophthalmologist, "Dr. McPherson is the most accomplished, resilient, and generous person I have met. She was a treasured mentor and friend who dedicated her life to preserving sight. During her unparalleled career, she advanced techniques that restored vision to countless individuals. Perhaps even more impressive was her resolve to find solutions for blinding conditions that couldn't be fixed using available knowledge and tools."

Among her many contributions to UW–Madison, McPherson served on the UW Foundation Board of Directors; was the founding president of the UW Ophthalmology Alumni Association; and established seven endowed chairs and lectureships. The SMPH named one of its medical student learning communities the McPherson House. She received the Wisconsin Alumni Association's Distinguished Alumni Award and the Wisconsin Medical Alumni Association's Medical Citation Award. In 2014, McPherson also received the world's oldest and most prestigious medal in ophthalmology: the Gonin Medal, awarded by the University of Lausanne and the Societe Suisse d'Ophtalmologie.

SMPH Dean Robert N. Golden, MD, concludes, "Dr. McPherson was a truly remarkable person. It was a deep honor and a wonderful pleasure to know her. So many of us will miss her dearly, yet take solace in recognizing that her legacy will live on in perpetuity."

A Lot of Nerve

CHAPMAN'S TENACIOUS APPROACH TO THE "MOST IMPORTANT" PROBLEMS IN BIOLOGY

Ed Chapman, PhD

by David Tenenbaum

No matter how obscure his latest study of fundamental nervous processes might seem, Ed Chapman, PhD, will try to ease people's minds.

"It's really simple," says Chapman—a professor in the Department of Neuroscience at the University of Wisconsin School of Medicine and Public Health—although his explanation resembles a master class on the finding, its context, and how it builds the understanding of communication between nerve cells.

Given the intricacy of what he and a legion of other investigators are finding, the effort does not always succeed with outsiders to the field. But Chapman's name is known and respected among colleagues and competitors who explore the transfer of neurotransmitters from neuron A to neuron B.

In fall 2022, Chapman, one of two Howard Hughes Medical Institute (HHMI) investigators at UW–Madison, received an "A" grade from the nation's largest private funder of medical research. The HHMI review described Chapman as "fearless," with a broad approach that is "unique in the field." The organization provides steady, reliable support, with an emphasis on new frontiers of medicine, for its seven-year engagement.

Chapman concentrates on research questions that are big, bad, and basic. Many of them concern the release of neurotransmitters at the synapse—the tiny gap between two neurons. He works mainly at the level of molecules, cells, and artificial models of cellular structures.

The multi-faceted approach has propelled Chapman to the forefront of a highly competitive effort to unravel the ground-level secrets of the nervous system. Thirty years ago, he began to work out how a specific protein, in the presence of calcium ions, releases a neurotransmitter into the synapse by triggering the opening of a structure called the fusion pore.

The pore's formation is the first step in the membrane fusion reaction; when the pore dilates, the membrane that encases the sac of neurotransmitters, called a vesicle, undergoes a complete merger with the plasma membrane around the cell. It's a complicated process, even though it happens on micro- or milli-second timescales in neurons, and it's a major focus of the Chapman lab.

In 2018, Chapman used a gadget developed in his lab to demonstrate that the number of proteins in a fusion pore governs how it opens. The lab-built pore did not simply open, flush its cargo into the synapse, and close. Sometimes it opened briefly, and sometimes much longer. Sometimes it opened completely, and other times, partially. And it sometimes even trilled like a flute.

"The experiments are very challenging," Chapman admits. "And [our results] have been confirmed by others. We could still be wrong—up to 99 percent of neuroscientists believe that, in neurons, the fusion pore expands and releases its entire contents when it opens."

Why do researchers care? Because this release is the home of neural chit-chat. For example, Chapman speculates that it could overturn the signal from glutamate, the brain's major excitatory neurotransmitter. The glutamate receptor, he notes, "requires a quick, big dose of glutamate to activate, but if you apply the same number of glutamate molecules slowly, it will be desensitized."

So, a trickle of glutamate could convert the classic excitatory neurotransmitter into an inhibitory one.

The result was pure Chapman. It focused on the speed of a process. And it was basement-level basic: neurotransmitter releases occur countless times a minute in a person, and they are critical to kicking a football, typing a word, remembering your aunt's name, and smelling the roses.

Basic science matters, says Chapman, who is not shy about being considered a type of mechanic who delights in asking, "Can you fully understand a car without knowing how its components work?"

Growing up in Bellingham, north of Seattle, Chapman played the trumpet and baritone, and he was interested in chemistry, biology, and oceanography. Educated at Western Washington University, the University of Washington, and Yale University, he eventually settled on biochemistry.

"I always wanted to know how everything worked, I think that most human beings do," he says.

Why focus on the nervous system? According to Chapman, it's because "nerves do all the interesting stuff" and they do it faster than any other tissue.

Understanding the mechanism that allows a neuron to blab with a neighbor is one pillar of a remarkable research career. Chapman, who leads a research group of about 18 people in the Wisconsin Institutes for Medical Research, has explored other aspects of neuronal biology, including the mechanism of action of botulinum toxin and the movements, dynamics, and fusion of other organelles in neurons.

One goal of his work on the formation and recycling of synaptic vesicles is to understand how synapses can vary their reactivity. Again, basic mechanics have fundamental implications.

"We know neuronal function has to change with experience, or else you could not remember or do anything," Chapman says.

His work centers on some deceptively simple questions: How do neurons create and control fusion pores? What molecules and mechanisms are involved in the fusion of membranes—the ubiquitous "containers" housing every animal cell?

The process of membrane fusion, which explains neurotransmitter release, evolved two to three billion years ago, long before neurons, and it underlies all eukaryotic cells.

"Membrane fusion is as fundamental to life as DNA and genes," Chapman notes. "Some people think fertilization is the most important case of membrane fusion. Some people feel viral entry into the cell, perhaps because a loved one died of a viral infection, is the most important fusion event. I can understand that. But to me, the most interesting fusion process, by far, is the one we think with and feel with. It's the fusion of the membranes that results in the release of

—continued on page 27

100 Years of Discovery

CELEBRATING THE DEPARTMENT OF BIOMOLECULAR CHEMISTRY

Top row (left to right): Current and past members of the laboratory of Patricia (Tricia) J. Kiley, PhD; members of the laboratory of Christina Hull, PhD; faculty, staff, friends, and alumni of the Department of Biomolecular Chemistry. Bottom row: Former members of the laboratory of John Denu, PhD; Andrea Galmozzi, PhD, and Feyza Engin, PhD; current and past members of the laboratory of David Brow, PhD.

by Kris Whitman

In summer 2022, the University of Wisconsin School of Medicine and Public Health's (SMPH) Department of Biomolecular Chemistry celebrated a century of excellence in research, teaching, and service.

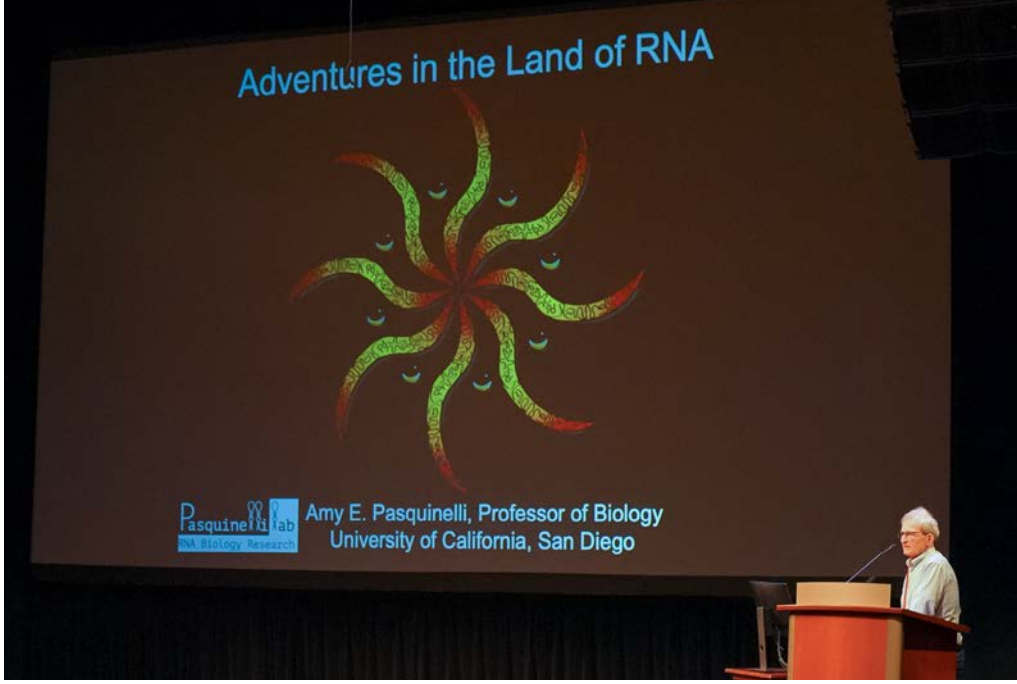
Since its inception in 1921—just two years after the Wisconsin Legislature granted permission for the SMPH (then called UW Medical School) to plan a full, four-year course—the Department of Biomolecular Chemistry has excelled in research related to the fundamental molecular mechanisms of biological processes, particularly related to human disease. The department's key strengths in biochemistry, cell biology, genomics, and development have cultivated a highly interdisciplinary environment, launching the careers of countless graduate and post-doctoral trainees.

"While the department has changed in many ways over the last 100 years, the people who have worked here have always been dedicated to the ideals of excellence and collegiality," says Patricia (Tricia) J. Kiley, PhD, chair, Department of Biomolecular Chemistry.

Due to COVID-19-related delays, the department celebrated its century of success a year late. Its 2022 symposium brought together more than 200 alumni, friends, faculty, staff, and students to honor the milestone.

An evening welcome reception at the UW Memorial Union was followed by keynote talks by two distinguished alumni—Amy Pasquinelli, PhD '98, professor of biology, University of California, San Diego, and Andreas Kuhn, PhD, postdoctoral fellow from 1997–2001, who is now the senior vice president of RNA biochemistry and manufacturing, BioNTech. The opening session provided stimulating looks at the central roles that RNA plays in gene expression and how this knowledge inspired COVID-19 vaccine development.

Next, participants enjoyed a full day of scientific talks and opportunities to reminisce. A diverse group of 12 alumni shared how their training and experiences at UW-Madison propelled their future success in academia and industry. The symposium also included a look toward the future through talks by Associate Professors Feyza Engin, PhD, Melissa Harrison, PhD, and Peter



Clockwise from top/left: Amy Pasquinelli, PhD '98; Jim Dahlberg, PhD, introducing Pasquinelli, his former doctoral student; Andreas Kuhn, PhD; Dean Robert N. Golden, MD.

CHRISTOPHER LIBERT (10)

Lewis, PhD, and Assistant Professor Gaelen Hess, PhD. They highlighted the collaborative and innovative science that is driving new research directions.

After a festive dinner, Emeritus Professor Jim Dahlberg, PhD, shared a historical presentation, which highlighted important milestones that contributed to the department's strength. SMPH Dean Robert N. Golden, MD, closed the evening with a forward-looking, inspirational talk.

"Our Department of Biomolecular Chemistry has evolved into one of the strongest programs of its kind, producing innovative, impactful research and training leaders in a vitally important field," says Golden. "I can't wait to read the next chapters in its amazing story."

Kiley reflects, "The Department of Biomolecular Chemistry's 100th anniversary event provided a wonderful opportunity to celebrate our discoveries and the people who made them possible—our past and present faculty members, students, post-doctoral trainees, and staff members."

She adds, "It was inspiring to have so many alumni return for our celebration and share with us how their time in the department impacted their careers."

Throughout the department's rich history, faculty members' accomplishments have been recognized with national and international honors, including by the National Academy of Sciences, American Academy of Arts and Sciences, American Academy of Microbiology, and American Association for the Advancement of Science.

Kiley notes that in 1921, it would have been difficult to imagine the vibrant, diverse, and accomplished department that exists today.

THERE'S MORE ONLINE
See bmolchem.wisc.edu

Department History

1921: Harold C. Bradley, PhD, founds the Department of Physiological Chemistry and becomes its first chair.

1924: The department awards its first PhD.

1932: The first woman receives a PhD in the department.

1942: Albert Lehninger, author of the *Principles in Biochemistry*, receives a PhD.

1947: Philip P. Cohen, PhD '37, MD '38, succeeds Harold C. Bradley, PhD, as chair.

1975: Harry J. Karavolas, PhD, becomes chair of the department.

1991: The department name is changed to the Department of Biomolecular Chemistry.

1996: Elizabeth Craig, PhD—who, in 1979, was the first female faculty member hired in the department—becomes chair.

2002: Robert H. Fillingame, PhD, becomes chair.

2012: The department moves from the Bardeen/Medical Sciences Complex into a new, $112 million, state-of-the-art research complex—the DeLuca Biochemical Sciences Building—on Henry Mall.

2013: Patricia J. Kiley, PhD, becomes chair.

Patches

by Julia Loosen

I felt my toes slip through the end of my sock inside my boots. It was the first time I'd worn a pair of my hand-knit socks this season—Wisconsin winter was here, and the bitter cold winds demanded the proper gear. I'd picked out my favorite pair, a soft wool yarn variegated from dark navy to bright teal. It reminded me of Lake Michigan's jewel-toned waves and the happy memories of summer in Door County. To inspect the damage, I pulled off my boot which revealed a large hole with frayed edges at the toe. I had worked so carefully to craft the fabric with my own hands, knitting the knits and purling the purls on small delicate needles. Slow and deliberate, careful and planned, now with a hole ripped through and through. It may as well have been an omen—later that day my grandmother would enter hospice care, blurring the lines of my life between medical student and family member.

What do we do when a hole appears in our carefully crafted fabric? Do we cast the sock aside and start anew, sentencing its partner to a life of solitude and disuse? Do we unravel the sock from the beginning, leaving a mess of tangled yarn where there was once a structured garment?

No—we can mend the holes. Carefully clean away the edges of the trauma, picking up the remaining stitches to start a new row. Knitting the knits, purling the purls until the hole is covered and the patch grafted to the original fabric. It will never be perfect though, and even the most expert patch can be spotted by the trained eye. But maybe disguising it isn't the point. It adds to the character of the piece, a demonstration of a sock well-loved and well-worn. Not a flaw but a feature.

Just as we patch the holes in our socks, we too mend the holes in the fabric of our lives. No matter how carefully, how deliberately, how thoughtfully a life is planned and stitched together, there are bound to be holes. A suffering father, a global pandemic, a dwindling grandmother, a lost patient, and personal failures all ripping through the hum of daily routine and to-do lists and plans for the future. But every heartbreak or failure or loss can be covered with a new, colorful patch. A gentle reminder of hardships that only makes the fabric more unique and beautiful, a product greater than the sum of its parts. We have the chance to take threads from our loved ones, our patients, and even strangers to mend ourselves. The grief becomes part of us and the tapestry of our lives.

However, it might take time to repair the holes. The sock may languish on the coffee table for days or weeks or months, eagerly awaiting its return to wholeness. Sometimes the courage comes quickly, and the job is merely a blip during a busy daily routine. Other repairs require time and thoughtfulness and courage. It might be too painful to pick up the piece and look squarely at the damage, time being the only balm for some wounds. But no defect is unfixable—with creativity, patience, and optimism any patch is possible. There are times when our own suffering or the suffering of a loved one or patient appears to serve no greater purpose, but those patches often become the most meaningful and silently guide us in our lives going forward. Healing others is best done when we find the strength to heal ourselves first.

I hope that when my spirit is cast off onto its next journey, my fabric has become a vivid patchwork. Sure, the original rich blue yarn remains, but it will be interspersed with patches of vibrantly colored threads borrowed from those I've loved and those I've learned from. It will be soft from wear and a bit faded in color, but it will be mine. I hope my own strands of yarn will help other people mend their holes, too.

ABOUT THE AUTHOR

Julia Loosen—a fourth-year medical student at the University of Wisconsin School of Medicine and Public Health, who will enter an internal medicine-primary care residency at John's Hopkins Bayview Medical Center—wrote this piece in loving memory of her grandmother, Marion Martin, and her father-in-law, Habtemariam Tesfamichael, who passed away in early 2023.

Loosen grew up in Hartford, Wisconsin, and planned to go into medicine from an early age, motivated by her love of science and her drive to serve others. Before medical school, she majored in neurobiology and sociology at UW–Madison. Her academic interests include the influence of social determinants of health in the care of older adults. In her free time, she enjoys running, playing viola in the Medical Sciences Orchestra, and knitting. She believes creative expression through music, writing, and crafting provides a shared experience that deepens the connection between patient and provider.

Seeking Submissions to Healer's Journey

Healer's Journey, a section of *Quarterly* magazine, showcases creative work by members of the University of Wisconsin School of Medicine and Public Health (SMPH) family. We seek prose, poetry, and photographs that are moving, humorous, or unusual and that reflect personal experiences in our world of healing.

Guidelines are as follows: Manuscripts, subject to editing, can be no longer than 1,000 words. Photos must be high resolution. Subject matter should relate to any aspect of working or studying at the SMPH or in the medical field generally.

Send submissions to *quarterly@med.wisc.edu* or via mail to:

Managing editor, ***Quarterly*** magazine
Wisconsin Medical Alumni Association
750 Highland Ave.
Madison, WI 53705

Faculty Profile *continued from page 23*

neurotransmitters. Overall, I think fusion pores and the mechanics of membrane fusion are among the biggest unsolved problems in all of cell biology."

The lab's results have been published in top scientific journals, and Chapman mentions several of them as his greatest hits, but he sometimes returns with completely different answers.

"My proudest achievement is the success of my trainees," he says. "Everything else is a distant second."

The extent of his influence, Chapman says, was driven home at the traditional 60th birthday symposium, held in July 2022.

"When people go off and are incredibly successful in their careers and lives, and they come back and explain your role in that… It's something I did not think about very often, but it was incredibly emotional, hit me pretty deep, pretty hard," he shares.

An example of such a person, Jihong Bai, PhD, is now a professor at Fred Hutchinson Cancer Center in Seattle. In 1998, Bai became Chapman's first graduate student.

"I trained in the Chinese system, [where] your professor is well dressed, soft spoken," says Bai. "I met Ed. He has a ponytail, it's summer, he's wearing flip flops. It was shocking, but we remain friends to this day, after 24 years. I still pick his brain about my research and career."

Jeremy Dittman, MD, PhD, associate professor of biochemistry at Weill-Cornell Medicine in New York, met Chapman during a seminar at the University of California, Berkeley. In a one-to-one talk afterward, Dittman says, "I thought, why is Ed even paying attention to a random post-doc? He was really engaging, asked me difficult questions. … He was super nice, listening to what I had to say."

Noting that the two remain in touch 22 years later, Dittman says, "He was a mentor, a guardian angel. He's always someone I can count on, but he seeks out my advice too. He can be extremely humble, and his science is bold, but he does not have the attitude typical of people who have reached his status in science."

Min Dong, PhD '04, now an associate professor at Harvard Medical School, arrived in Madison in 1999. He says his decade in the Chapman lab "were really the best 10 years of my life. He's very good at encouraging people, leading people, discovering people's strengths. After all these years, he's still helping me."

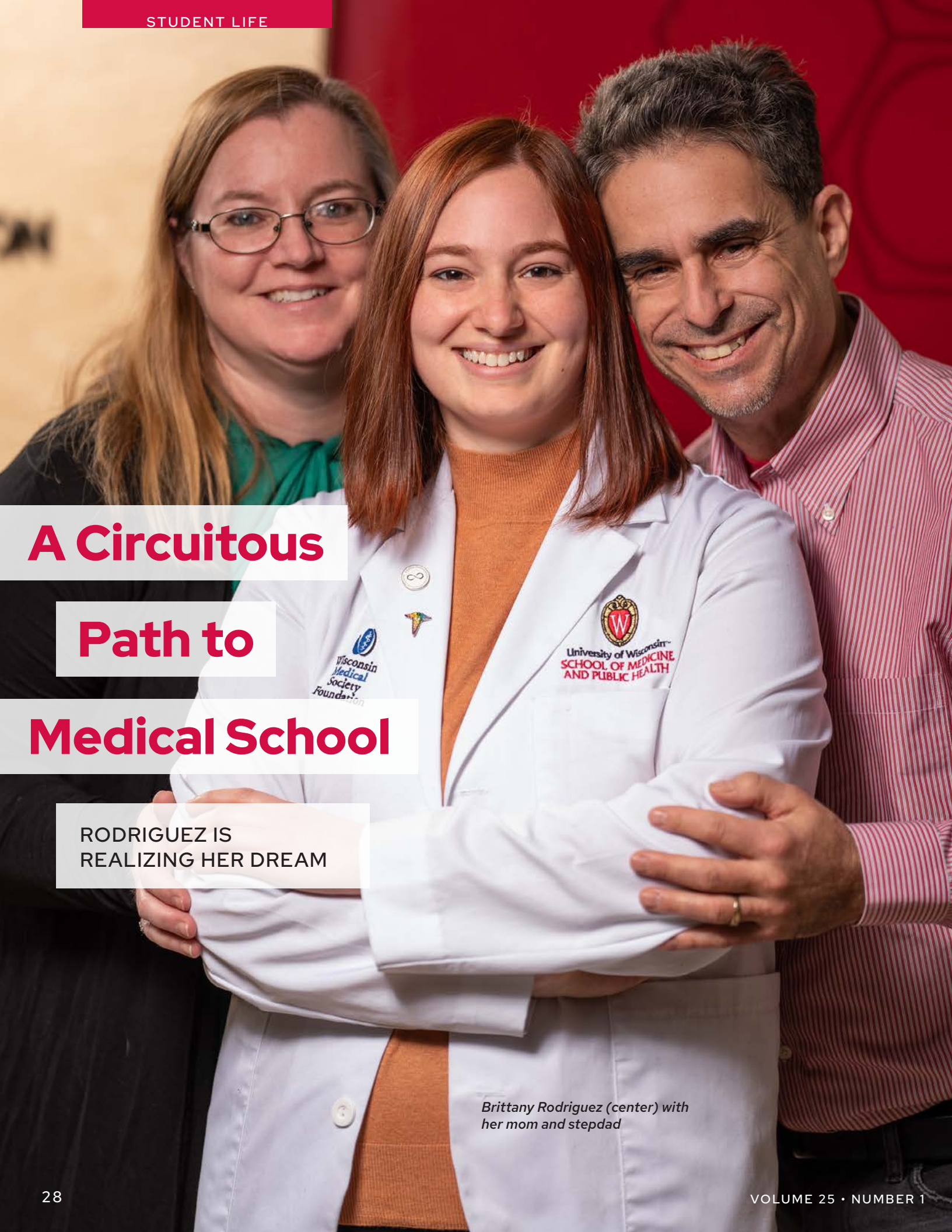
Chapman's gravitational attraction to big questions was obvious when he interviewed for a professorship role at UW–Madison in 1996.

Meyer Jackson, PhD, the Kenneth S. Cole Professor of Neuroscience, recalls, "It was shocking how totally he was able to answer the questions. He would run through the prior studies, had almost a photographic memory of an enormous amount of prior work, and showed exactly where his work fit in. He really did blow everybody away in the job interview."

Jackson, who's now a friend and collaborator, adds, "Ed has a special flair for biochemical, in vitro studies of proteins. There is a large community that follows the basic strategy of working in the test tube, but he has done that exceptionally well [and] has made the big breakthroughs in important areas. I think we made a good choice in hiring!"

A Circuitous Path to Medical School

RODRIGUEZ IS REALIZING HER DREAM



Brittany Rodriguez (center) with her mom and stepdad

by Beth Pinkerton

Brittany Rodriguez had not told her mom and stepdad she was considering medical school when she mailed them her acceptance letter from the University of Wisconsin School of Medicine and Public Health (SMPH). She had not intended to keep it a secret, but she felt the need to keep the dream to herself until it became real.

Thinking back several years, Rodriguez says, "I scored really well on my first biology exam in college, and my professor suggested that I should go to medical school. My first thought was 'You can't do that!' But his comment planted a seed."

Yet, that seed took the next eight years to grow. As someone who followed a non-traditional path to get to the SMPH—where Rodriguez is a first-year medical student—she says her experiences have provided unique clarity about the direction she wants to take.

"I love the brain, and I love learning about the nervous system," she notes.

Rodriguez plans to pursue a career in neuro-critical care and work with complex patients and/or those with traumatic brain injuries. She is working toward a global health certificate and will do a summer 2023 field experience in Thailand. She hopes to apply her passion for health equity and patient advocacy to a research project with the UW Center for Patient Partnerships. And she represents her class on the Educational Policy and Curriculum Committee.

Back in 2011, as a first-generation college student from Kingston, Illinois—a rural community of 1,100 people near Rockford—Rodriguez says she could not imagine herself as a doctor because she had not seen anyone else do so.

Following two years of study at a community college, her next stop was Southern Illinois University in Carbondale, which is close to her grandparents' farm. The night before her six-hour move south, her stepdad experienced a medical emergency, and Rodriguez drove him two hours to the Edward Hines, Jr. Veterans Administration Hospital near Chicago.

There, they learned that Rodriguez's stepdad needed a heart transplant. The physicians transferred him to the William S. Middleton Memorial Veterans Hospital in Madison, where UW–Madison's world-renowned experts performed the transplant.

Rodriguez says it was eye-opening to learn about all of her stepfather's post-transplant medications, their side effects, and his limitations due to his immuno-suppressed condition. But meeting the family of the organ donor provided a moment of awe that left an indelible impression on Rodriguez's own heart.

"I remember them taking the stethoscope, listening to my stepfather's heartbeat, and saying, 'That's my son's heart.' That humanizing aspect was huge for me," she shares. "It was amazing! I couldn't believe what medicine could do and how it brought people together."

With a few more steps on her journey to medical school, upon earning her bachelor of arts degree in English with a specialty in creative writing, Rodriguez continued living with her grandmother to support her when her grandfather died.

Two years later, Rodriguez took a big leap and moved to New York City to pursue a publishing career. Finding it difficult to open doors and needing a job, she became a paralegal in a law office that specializes in medical malpractice. This position provided another nudge toward medical school, as it raised her awareness about the need for quality improvement and patient advocacy.

She explains, "You don't get a case and think, 'Well, that's a bad doctor.' You think, 'Wow, there was a mistake made here. How can we prevent that in the future, either by implementing policies within the hospital or by finding a way to make medicine safer?'"

In January 2020, with encouragement from her boss, Rodriguez started taking classes at the City University of New York Graduate Center while working full time. When the COVID-19 pandemic caused many places to shut down and later re-open virtually, the ability to work and attend classes remotely helped her manage her 14-hour days.

Rodriguez started applying to medical schools while she worked toward a bachelor of science degree in neuroscience; she received that degree in January 2022. While her stepdad had maintained a strong connection to the Middleton VA Hospital and UW Health, and he speaks to SMPH medical students about his experience with his transplant, Rodriguez had not intended to return to the Midwest.

"But when I did my interview at the UW School of Medicine and Public Health, everyone I interacted with was incredible, and I felt a strong pull to the school," she recalls, adding that her family was thrilled to attend her White Coat Ceremony at the SMPH in fall 2022.

"It's difficult to explain how competitive it is to get into medical school," Rodriguez says. "But the magnitude of it really hits when you hear that there were 5,000 out-of-state applicants, and only 30 of us [from out of state] are among the first-year class."

Membership in the Latino Medical Student Association (LMSA) has provided an important connection to her Puerto Rican culture—something she has craved.

"I grew up with my mom and her side of the family. I'm half Puerto Rican, but I didn't have much contact with those roots," Rodriguez shares. "In the community I am from, it's not something you want to be. Because I [easily passed for being white], it was easy to remove myself from my Puerto Rican side."

Rodriguez's time in New York was her first opportunity to connect with her Puerto Rican heritage, and she is grateful for the warm welcome at the SMPH from other Latino students, who share their culture and personal experiences with her. She also appreciates meeting other members of the LMSA because they understand what it means to be the first in a family to attend college.

"As a first-generation college student, you want to reach as far as you can go," she explains. "And I needed to be sure I could do these things on my own, and make sure I'm doing them with my own internal drive."

While her journey to the SMPH has taken a circuitous route, Rodriguez says she has gone from feeling like an imposter to someone who is living her true purpose.

Researchers Awarded NIH Autism Centers of Excellence Grant

Research suggests that older adults with autism spectrum disorder may have shorter life expectancies and more physical and mental health difficulties than the general population. A landmark longitudinal study of aging and autism will investigate these differences. The $10 million study, funded by the National Institutes of Health (NIH), is led by researchers at the University of Wisconsin School of Medicine and Public Health (SMPH) and the University of Utah; it is part of a $100 million NIH award at nine Autism Centers of Excellence.

"Aging and early mortality in autistic people are urgent issues, but we don't know enough to address them," says Janet Lainhart, MD (top photo), professor, SMPH Department of Psychiatry, and investigator, UW Waisman Center, who leads the UW–Madison team. Collaborators (also Waisman investigators) include Andrew Alexander, PhD (bottom photo), professor, Departments of Psychiatry and Medical Physics; Douglas Dean, PhD, assistant professor, Departments of Pediatrics and Medical Physics; and Lauren Bishop, PhD, associate professor, Sandra Rosenbaum School of Social Work, UW–Madison.

The team will follow a cohort of adults with and without autism to collect information about many health factors. They hope insights can lead to improved outcomes for people with autism.

Two Elected to American Association for the Advancement of Science

Two University of Wisconsin School of Medicine and Public Health (SMPH) scholars have been elected fellows of the American Association for the Advancement of Science (AAAS), the world's largest general scientific society.

Nihal Ahmad, PhD (top photo), professor and vice chair for research, Department of Dermatology, and the Dr. Frederic E. Mohs Skin Cancer Research Chair, is recognized for distinguished contributions to the understanding of cell-cycle regulation in cancer; experimental cancer therapeutics; and cancer prevention by naturally occurring, non-toxic, plant-based agents.

Wei Xu, PhD (bottom photo), professor, Department of Oncology, and the Marian A. Messerschmidt Professor of Cancer Research, was chosen for distinguished contributions to cancer biology and therapy—particularly regarding molecular mechanisms of epigenetic regulation in breast cancer and modulation of estrogen receptor signaling, and their use in developing novel treatments.

Election as an AAAS fellow recognizes individuals' efforts to advance science and society, with adherence to the highest standards of scientific integrity and professional ethics. Ahmad and Xu are among six UW–Madison scholars selected in 2023.

Asthana Serving on National Advisory Council on Aging

Sanjay Asthana, MD, has been invited by the secretary of the U.S. Department of Health and Human Services (HHS) and the director of the National Institutes of Health (NIH) to serve a four-year appointment on the National Advisory Council on Aging (NACA), part of the NIH's National Institute on Aging.

The founding director of the Wisconsin Alzheimer's Disease Research Center (ADRC) and an internationally renowned researcher and leader in the field of Alzheimer's disease, Asthana is a professor of medicine and chief of the Division of Geriatrics and Gerontology at the University of Wisconsin School of Medicine and Public Health (SMPH). He also holds the Duncan G. and Lottie H. Ballantine Chair in Geriatrics and Gerontology at the school.

The NACA advises the secretary of the HHS, the director of the NIH, and the director of the National Institute on Aging on their missions. The council meets three times per year to consider applications for research and training and to recommend funding for promising applications.

In addition to Asthana's role as director of the Wisconsin ADRC, he holds several leadership positions at the SMPH, including associate dean for gerontology and director of the NIH-funded Biology of Aging and Age-Related Diseases Training Grant. He also served as the director of the Geriatric Research, Education, and Clinical Center at the William S. Middleton Memorial Veterans Hospital in Madison for more than 20 years.

Okonkwo to Lead NIH Study, Development Core, and Fellowship

Ozioma Okonkwo, PhD, associate professor, Department of Medicine, University of Wisconsin School of Medicine and Public Health (SMPH), will lead a new project funded by the National Institutes of Health (NIH). The project will form a development core within an existing study—Health and the Aging Brain-Health Disparities (HABS-HD)—funded by a five-year, $149 million grant to University of North Texas Health Science Center at Fort Worth. The $6.9 million HABS-HD development core will be based in the SMPH's Center for Health Disparities Research, where Okonkwo is an affiliate member.

Under Okonkwo's direction, the development core will curate educational opportunities for underrepresented groups in research careers and foster the training of a diverse workforce to meet the nation's biomedical, behavioral, clinical, and translational needs in Alzheimer's disease and related dementias (ADRDs).

A neuropsychologist and executive committee member in the Wisconsin Alzheimer's Disease Research Center, Okonkwo has a successful record of training scholars in the biomedical field, especially those from groups underrepresented in medicine. The new project will develop a fellowship program to help ensure a pipeline of ethnoculturally diverse, culturally competent professionals to study, evaluate, diagnose, and treat ADRDs.

Okonkwo and Barbara Bendlin, PhD, SMPH professor of medicine, will collaborate with co-leaders at Fordham University and the Keck School of Medicine at the University of Southern California.

Westergaard Leads NIH Overdose-Prevention Study on Campus

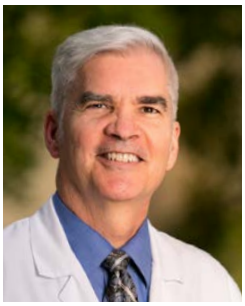
A national network funded by the National Institutes of Health (NIH) will test the effectiveness of remote interventions, such as overdose-prevention hotlines and secure smartphone applications, to improve access to harm-reduction services for underserved people battling opioid addiction. With funding of $3.5 million over five years, the network will include a coordinating center and nine research studies at institutions nationwide, including the University of Wisconsin School of Medicine and Public Health (SMPH). Led by Ryan Westergaard, MD, PhD, MPH, professor, SMPH Department of Medicine, the Wisconsin study will enroll urban and rural participants.

"Harm-reduction services can be life-saving," Westergaard says. "This project will address how they can best be implemented, and whether novel and emerging strategies are feasible and acceptable to the diverse communities affected by drug addiction."

The opioid crisis took more than 107,000 lives in the United States in 2021. The SMPH study will leverage a 10-year partnership with Vivent Health, a Wisconsin non-profit that provides HIV/AIDS resources.

"Vivent Health's staff have built trusted relationships with people who use drugs in numerous Wisconsin communities; and many of these people are not connected to services through any other means," Westergaard says. "The foremost goal is to keep people alive, safe, and healthy. Community members who need harm-reduction services are one of our greatest sources of insight into how to improve those services."

UW Carbone Cancer Center Receives "Outstanding" Rating



National Cancer Institute (NCI) reviewers have rated the University of Wisconsin Carbone Cancer Center's six program areas—cancer prevention and control; developmental therapeutics; cancer genetics and epigenetics mechanisms; imaging and radiation sciences; tumor microenvironment; and human cancer virology—as "outstanding" or "outstanding to exceptional." Exceptional is the highest rating.

"Overall, UWCCC has achieved an impressive set of scientific accomplishments with impactful transdisciplinary and translational research that addresses the cancer burden," the reviewers said.

To maintain its rating as an NCI-designated comprehensive cancer center and receive $25 million in funding, the center participates every five years in a rigorous review of dozens of research, patient care, and community outreach metrics. The UWCCC is the only comprehensive cancer center in Wisconsin and one of only 53 nationwide.

"The review gives us unbiased feedback on performance and institutional goals," says Howard Bailey, MD (PG '91) (pictured), the center's director and the associate dean for oncology at the University of Wisconsin School of Medicine and Public Health. "It makes sure we are holding ourselves to very high standards, and it also allows us to identify areas of opportunity and plan for future growth."

Reviewers also gave the center high marks for its initiatives to enhance diversity among members, leaders, and researchers.

Women in Medicine and Science Awards

BARROILHET, HAMEDANI, CENGIZ, STILES, BROWN, AND KENNEDY HONORED

TODD BROWN/MEDIA SOLUTIONS

Award winners (left to right): Lisa Barroilhet, MD, MS; Azita Hamedani, MD, MPH, MBA; Pelin Cengiz, MD; Melissa Stiles, MD (PG '91); and Heidi Brown, MD, MAS; missing: Tabassum Kennedy, MD (PG '10)

by Kris Whitman

The University of Wisconsin School of Medicine and Public Health's (SMPH) chapter of the Group on Women in Medicine and Science (GWIMS) honored six faculty members with awards at the group's symposium in late November 2022.

Part of the Association of American Medical Colleges, the school's GWIMS aims to bring together and recognize thought leaders who explore topics in leadership and professional development for women in medicine and science.

The SMPH GWIMS president, Mary Westergaard, MD, associate professor and vice chair of education in the BerbeeWalsh Department of Emergency Medicine, notes that the following awards were shared at the 2022 symposium:

IMPACT AWARDS:

- Lisa Barroilhet, MD, MS, associate professor, Department of Obstetrics and Gynecology
- Azita Hamedani, MD, MPH, MBA, founding chair, endowed chair, and associate professor, BerbeeWalsh Department of Emergency Medicine
- Tabassum (Tabby) Kennedy, MD (PG '10), professor, Department of Radiology; chief, Division of Neuroradiology

ADVANCING WOMEN IN MEDICINE AND SCIENCE AWARD:

- Heidi Brown, MD, MAS, associate professor, Department of Obstetrics and Gynecology

EXCELLENCE IN MENTORSHIP AWARD:

- Melissa Stiles, MD (PG '91), professor, Department of Family Medicine and Community Health

BUILDING INTERDISCIPLINARY RESEARCH CAREERS IN WOMEN'S HEALTH RESEARCH MENTORSHIP AWARD:

- Pelin Cengiz, MD, professor, Department of Pediatrics

Barroilhet earned her medical degree from the University of Minnesota. Next, she completed an obstetrics and gynecology residency at University of North Carolina at Chapel Hill and a gynecologic oncology clinical and research fellowship at Brigham and Women's Hospital, Boston. In 2012, she joined the SMPH Department of Obstetrics and Gynecology, where she is the director of translational research for the Division of Gynecologic Oncology. Her research focuses on prevention of ovarian cancer, which includes identifying those who are at high risk for these cancers and developing research collaborations to optimize treatment and prevention paradigms. Nationally, she is the vice chair of the Patient Education Committee for the Society of Gynecologic Oncology. She has received the National Cancer Institute Clinical Care Team Leadership Award for her commitment to the development of clinical trials.

Hamedani earned her medical degree from the Yale School of Medicine and a master of public health degree from the Yale School of Public Health. She completed a residency and chief residency with the Harvard Affiliated Emergency Medicine Residency Program at Brigham and Women's Hospital and Massachusetts General Hospital (MGH). Next, she joined the faculty at Harvard Medical School and completed a hospital administrative fellowship at MGH. In 2006, Hamedani joined the SMPH faculty. She took on several leadership roles before being named chief of the Division of Emergency Medicine in the Department of Medicine. She oversaw significant growth of the division's clinical, educational, and research missions, shepherding the division into an independent academic department. In 2014, Hamedani became the founding chair of the BerbeeWalsh Department of Emergency Medicine. In her role as chair, she oversaw growth in patient volumes and department space; growth of the department's research portfolio; expansion of the residency program; and creation of fellowships.

Kennedy earned her medical degree from the University of Pennsylvania followed by a transitional medicine internship there; a diagnostic radiology residency at the Mallinckrodt Institute of Radiology, St. Louis; and a diagnostic neuroradiology fellowship at UW Health. She joined the SMPH Department of Radiology in July 2010. With clinical expertise in head and neck imaging, she focuses on head and neck cancer, temporal bone imaging, and orbital and sino-nasal imaging. From 2010 to 2018, she served as the course director of the integrated neuroscience clerkship for medical students. She is an assistant block leader for the required Acute Care block and has integrated radiology education into other courses. She is recognized for her innovation in delivering web-based, interactive educational content and for mentoring trainees and faculty members. When she was director of the Neuroradiology Fellowship, Kennedy implemented several positive changes, including a structured curriculum and journal clubs. She has won numerous teaching awards, including the Wisconsin Medical Alumni Association Distinguished Clinical Sciences Teaching Award in 2017 and 2021. Nationally, she has served as chair of the American Society of Neuroradiology Fellowship Director Committee.

Brown earned her medical degree from the Warren Alpert Medical School of Brown University. She completed an obstetrics and gynecology residency at the University of Pittsburgh Medical Center Magee-Womens Hospital and a fellowship in female pelvic medicine and reconstructive surgery at the University of California, San Diego (UCSD) and Kaiser Permanente. She obtained a master of advanced studies degree in clinical research at UCSD, and she joined the SMPH Department of Obstetrics and Gynecology in 2013. Her clinical service, research, and teaching are focused on improving incontinence in women. She developed a community-led, small-group program—Mind Over Matter: Healthy Bowels, Healthy Bladder—that is radically improving women's lives in Wisconsin and five other states. Nationally, she serves on the editorial board for *Urogynecology* and the board of directors for the American Urogynecologic Society. Known for her warm, collaborative style with patients, students, and colleagues, Brown serves as core faculty for the UW Institute for Clinical and Translational Research's Dissemination and Implementation Launchpad and provides expert consultation to researchers and faculty members across campus.

Stiles earned her medical degree from the University of Iowa College of Medicine and completed a residency in the SMPH Department of Family Medicine and Community Health (DFMCH). The following year, she joined the DFMCH faculty and was the center director of the Belleville Family Medical Center for four years. She next completed a geriatric medicine fellowship at the University of California, Los Angeles. Stiles served as the associate director of the DFMCH Residency Program in Madison from 2002 to 2006, and she was the inaugural director of the school's Longitudinal Teacher-Coach Program. She assumed a leadership role in faculty development for the DFMCH in 2014. Known for her compassionate mentorship, she has mentored medical students, residents, fellows, and faculty members throughout her career. She serves as a steering committee member for the Linda and Gene Farley Wisconsin Chapter of Physicians for a National Healthcare Program and is a strong advocate for the prevention of gun-related injuries. Her many honors include the Marc Hansen Lectureship Award and the Wisconsin Academy of Family Physicians Educator of the Year Award. Her interests include violence prevention, geriatrics, palliative care, and health care reform.

Cengiz earned her medical degree at Marmara University School of Medicine in Istanbul, Turkey. She completed a pediatrics residency at Louisiana State University and a pediatric critical care fellowship at Children's Hospital and Regional Medical Center in Seattle before returning to Turkey for three years due to U.S. visa requirements. During this period, she established and directed one of the first pediatric intensive care units in Turkey, at Anadolu Medical Center, which is affiliated with Johns Hopkins Medicine International. She joined the SMPH Department of Pediatrics' Division of Pediatric Critical Care in 2006. An innovative researcher whose work in the field of pediatric brain injury has significant translational potential, Cengiz focuses on finding a novel therapy for neonatal encephalopathy subsequent to hypoxia ischemia. She has demonstrated strong leadership and team-building skills among a multidisciplinary group of investigators to conduct her research. She is recognized for her commitment to mentoring the next generation of physicians and scientists, with a particular focus on addressing issues of equity in sex, gender, and socioeconomics. In 2021, Cengiz received the Chancellor's Award for Excellence in Research: Independent Investigator.

Outstanding Women of Color

YOUNG, CISNEROS PREVO, AND SCOTT HONORED

Three women from the University of Wisconsin School of Medicine and Public Health (SMPH) and/or UW Health—Terri L. Young, MD, MBA, FARVO; Patty Cisneros Prevo, MEd; and Ashley Scott—are among six at UW–Madison to earn 2023 Outstanding Women of Color Awards in March. The annual tradition honors women of color among faculty, staff, and/or students who are deeply rooted in the UW–Madison and Madison communities through their work in one or more of the following areas: social justice, activism, and advocacy on behalf of disadvantaged, marginalized populations; community service; scholarly research, writing, speaking, and/or teaching on race, ethnicity, and indigeneity in U.S. society; and/or community-building to create an inclusive and respectful environment for all.

ANDY MANIS

Terri L. Young, MD, MBA, FARVO

Patty Cisneros Prevo, MEd

Ashley Scott

TERRI L. YOUNG, MD, MBA, FARVO

Young is the Peter A. Duehr Professor of Ophthalmology and chair of the SMPH Department of Ophthalmology and Visual Sciences (DOVS). She also has appointments in the Departments of Pediatrics and Medical Genetics, and she is a pediatric and adult strabismus ophthalmologist at UW Health. Additionally, Young has adjunct appointments in the Duke University Department of Ophthalmology and the Singapore Eye Research Institute.

A highly regarded clinician-scientist, she earned her medical degree from Harvard Medical School and her master of business administration degree from Duke University. Her clinical and research expertise is in ophthalmic genetics and genomics, and she has directed an active research laboratory in gene hunting of ophthalmic diseases for nearly 25 years.

Young has been active in the Minority Ophthalmology Mentoring Program, which offers mentoring for students from marginalized groups to enhance their competitiveness for ophthalmology residencies. The program is co-sponsored by the Association of University Professors in Ophthalmology and the American Academy of Ophthalmology (AAO).

Young recently completed an appointment as chair of the AAO Diversity, Equity, and Inclusion (DEI) Task Force to assess and change membership demographics throughout the organization. She serves on the board of the Wisconsin Council of the Blind and Visually Impaired, and she has instituted numerous initiatives to promote diversity among DOVS' faculty and staff.

In 2022, Young received the highest honor bestowed by Women in Ophthalmology, Inc.—the Suzanne Véronneau-Troutman Award, which recognizes a female ophthalmologist who has been a champion for women in the ophthalmology field internationally.

PATTY CISNEROS PREVO, MED

Cisneros Prevo is the SMPH and UW Health program manager for DEI in the Department of Medicine and UW Carbone Cancer Center. Prior to joining the SMPH and UW Health, she led DEI efforts for other UW–Madison units. She holds a master of education degree from the University of Illinois-Champaign/Urbana.

In January 2021, Cisneros Prevo was appointed to the Congressional Commission on the State of the U.S. Olympics and Paralympics. As an athlete, she has won four National Wheelchair Basketball Association Championships, and she became the first female head coach of a collegiate wheelchair basketball team at the University of Illinois. A three-time Paralympian, she was a member of the U.S. Women's Wheelchair Basketball Team for 10 years. As captain, she led the 2008 U.S. Paralympic Team to its second consecutive gold medal.

Cisneros Prevo is awaiting the publication of her first picture book, *Tenacious: Fifteen Adventures Alongside Disabled Athletes*. It focuses on major life and athletic accomplishments by 15 individuals with physical disabilities.

ASHLEY SCOTT

A student in the SMPH Medical Scientist Training Program, through which trainees earn combined MD and PhD degrees, Scott aspires to be a physician-scientist in academic medicine and contribute to research aimed at reducing patients' burden from cardiovascular diseases. As an undergraduate, Scott conducted research at Johns Hopkins School of Public Health. She later completed a research education program at Mayo Clinic.

In her current research, Scott strives to understand the key mechanisms of aortic valve disease progression, including the sexual dimorphic nature of this disease.

Having demonstrated an unwavering dedication to social justice and equity, Scott has developed two novel implicit bias curricula for her colleagues, and she strives to create inclusive spaces for students of color. To encourage synergy in DEI programming, she founded a national summit for diversity and equity training for MD/PhD students. Additionally, she has served in numerous leadership positions for groups working to promote diversity and inclusion at UW–Madison. In recognition of her DEI efforts, Scott has received several awards, including UW–Madison's Bucky Award for Graduate Student Commitment to Engagement and Activism.

Rural Health *continued from page 13*

effects on the body, and how lifestyle changes work to prevent the disease and its sequelae. … Medicine, public health, and rural health—as a student in the WARM program, I have gained valuable experience in each of these domains."

Gilsdorf's choice of career was deeply influenced by the health care his father received between his diagnosis with Stage IV kidney cancer and his death, shortly after Gilsdorf's high school graduation—at which he was the valedictorian. He was grateful that the health care team made it possible for his dad to be able to attend the graduation ceremony—a goal he had set for himself.

"In the years since my dad's passing, I have come to realize that when a patient and their family are in their most vulnerable moments, and there is seemingly nothing left to offer, physicians always have their humanism and the ability to respect and honor their patient's wishes. This display by my dad's physician and health care team is one that I hope to offer my patients and their families during their toughest days," says Gilsdorf, who plans to enter internal medicine and return to northeastern Wisconsin "to help care for the family and friends of those who raised me and helped make me who I am today."

Alumni Experiences

Calling himself "the dinosaur of the program," H. Clay Dean, MD '11, FACS, was among the first WARM cohort; he completed his medical education in Marshfield and Rice Lake. Following completion of a general surgery residency at Iowa Methodist Medical Center in Des Moines, Dean became a general surgeon at Sauk Prairie Healthcare in Prairie du Sac, Wisconsin—less than 50 miles from where he grew up.

Reflecting on his choice to enroll in WARM, he notes, "The program's values and goals lined up well with my aspirations as a future rural physician. I felt like my training allowed me to hit the ground running when starting my residency. It allowed me to have autonomy with patient care and take ownership of the patients I was following. It also allowed me to experience multiple practices from tertiary care to community-based."

Noting that he, his wife, and two sons love living in rural Wisconsin, Dean continues, "A rural practice is vastly different from an urban practice or tertiary-center practice. Experiencing the interactions my attendings had with their patients and understanding their concerns has helped me better serve my patients in my current practice. … Not always having substantial resources in a rural community but still being able to provide my patients with great surgical care is a challenge, but one that rural general surgeons have to be able to adapt to."

On the opposite side of Wisconsin, Breanna O'Neil, MD '17, grew up on a farm near Plymouth, Wisconsin, and practices general surgery nearby in Manitowoc County. Like the Dean family, O'Neil, her husband, and their two sons love living a rural lifestyle in the Badger State.

Originally planning to become a veterinarian, O'Neil changed course when her mother was diagnosed with breast cancer and encouraged her to "pursue medicine and take care of cancer patients."

O'Neil says, "I saw the need for doctors to care for patients in rural Wisconsin, and I knew that I wanted to ultimately practice in this setting."

She continues, "Through the WARM program in Green Bay, I got exposure to a variety of community practice environments in rural Wisconsin, and training in social issues that impact health care uniquely in rural areas."

Noting that rural general surgeons do everything from trauma care to appendectomies to cancer care, she says, "Fewer and fewer general surgeons want to go into a rural practice, and I think one reason is that they haven't had the opportunity to see a rural community practice during medical school. … I love operating and being able to make patients feel better by fixing a hernia or taking out a gallbladder. Nothing is more rewarding than knowing I gave my patients another wedding or graduation or visit with grandchildren by surgically treating their breast cancer or other condition. I hear all the time how grateful patients and their families are to have health care available close to home."

FOCAL FLAME PHOTOGRAPHY (4)

Badger Challenge

PARTICIPANTS SHARE ONE GOAL: TO CURE CANCER

by Alicia Artus

The heart of cancer research involves asking ambitious questions and pushing the limits of what is known and possible.

Pursuing a novel research angle involves many hurdles, the biggest of which is how to pay for it. Federal grants remain the largest funding resource, but competition has become extremely heated. What helps set projects apart is having promising initial study results to include with grant applications.

Recognizing the importance of seed funding to get innovative ideas off the ground, two University of Wisconsin School of Medicine and Public Health (SMPH) researchers—Deric Wheeler, PhD '04, professor, and Paul Harari, MD, chair, Department of Human Oncology—founded The Ride in 2016. They envisioned a community cycling fundraiser that would benefit innovative cancer research at UW–Madison and bring together and honor community members who have been impacted by cancer.

"We have devoted tremendous energy into creating a high-quality event in which cancer patients, family members, health care providers, and community members feel inspired by the mission to increase cancer cure rates," Harari explains.

As the event has grown in popularity and scope, including adding walk and run routes, leaders rebranded it with a name that reflects its innovative mission: Badger Challenge. In fall 2022, Badger Challenge enjoyed a record-breaking year, with more than 2,700 participants on 155 teams that cumulatively raised more than $800,000.

RAISED HERE. STAYS HERE.

Since 2016, Badger Challenge has raised more than $2.6 million to fund a diverse range of promising cancer research arenas in the areas of genomics, imaging, precision medicine, and viral oncology, among others. Awards are given through a competitive application process that emphasizes new cancer research discoveries, technologies, and treatments that will benefit future cancer patients. The goal is to position researchers with initial data that can help secure even more substantial grants to fuel their work.

Badger Challenge participants are proud to support local cancer research.

"Research funding has become more competitive than ever, and

UW–Madison Men's Basketball Assistant Coach Sharif Chambliss

Badger Challenge has been able to provide to the most promising areas of cancer research the necessary support to advance into the clinical space," Wheeler notes.

These funds have helped dozens of Badger Challenge Scholars across UW–Madison explore innovative ideas.

For instance, Melissa Skala, PhD, professor, Department of Medical Physics, SMPH, and Department of Biomedical Engineering, UW College of Engineering, works in photonics-based technologies that can be used to personalize cancer patients' treatments. Using light technologies, her team studies how cells emit light and how that may influence their growth and division.

"The Badger Challenge Scholar Award supported an exciting new research direction in cancer immunology for my lab. This resulted in discoveries and technologies that we are developing for T-cell therapy to help cancer patients," describes Skala. "Members of my lab are excited to try projects that have great potential to impact patients."

COMMUNITY-POWERED

In 2021, Paul Nelson suddenly experienced trouble with his vision. About a week later, he was diagnosed with stage IV glioblastoma—a highly aggressive form of brain cancer that would likely be fatal.

As Nelson went through intensive daily radiation treatments at Carbone Cancer Center, he noticed a banner for Badger Challenge at the entrance of the clinic and wanted to learn more.

"I found out that Badger Challenge supported my school and was working to cure my disease," Nelson recalls.

He reached out to his close circle of friends about helping him raise funds for Badger Challenge, and the response was overwhelming. In the past two years, Nelson's team has raised more than $32,000 toward research.

"Imagine the impact if we all raised even more," Nelson says. "This is an event that targets a disease that affects all of us, and we all share one goal, and that's to cure cancer."

Badger Challenge participants appreciate that dollars raised are available for UW–Madison scientists to accelerate the discovery of promising new treatments that directly benefit patients treated at the UW Carbone Cancer Center and beyond.

"Badger Challenge is rapidly becoming the largest single-day cancer fundraiser in Wisconsin," Harari says. "People are inspired to honor loved ones affected by cancer and create a better future for cancer patients of tomorrow."

These strong community ties and the fun, family atmosphere of the event have helped drive the increasing popularity of Badger Challenge year after year. Wheeler and Harari predict the event will draw more than 5,000 participants within the next few years.

Robert N. Golden, MD, dean, SMPH, has participated as a rider or runner in multiple Badger Challenge events since 2016.

"You feel something very special in the air at the Badger Challenge," Golden describes. "This atmosphere brings out the very best in people to do whatever they can to reduce the burden of cancer for the future."

Cancer patient Paul Nelson (left) and Badger Challenge co-founder Paul Harari, MD

Mark your calendars for the next Badger Challenge!
Sunday, September 24, 2023
American Family Insurance headquarters, Madison

Event details and registration are available at **badgerchallenge.org**

2022 Class of Badger Challenge Scholars

Olufunmilola Abraham, MS '11, PhD '13, BPharm, associate professor, School of Pharmacy: Cancer prevention research

Grace Blitzer, MD (PG '22), assistant professor, Department of Human Oncology: Endometrial cancer research

Amy Fowler, MD '07, PhD, associate professor, Department of Radiology: Breast cancer research

Aaron Hoskins, PhD, professor, Department of Biochemistry: Leukemia/lymphoma research

Quanyin Hu, PhD, assistant professor, School of Pharmacy: Pancreatic cancer research

Irene Ong, PhD, assistant professor, Department of Obstetrics and Gynecology and Department of Biostatistics and Medical Informatics: Precision medicine research to inform cancer treatment and outcomes

Jordan Slagowski, PhD '17, assistant professor, medical physicist, Department of Human Oncology: Solid tumor research

Jing Xhang, PhD, professor, Department of Oncology, McArdle Laboratory: Leukemia and myeloma research

Blood Test for Cancer Shows Promise Thanks to Machine Learning

In a study published in *Science Translational Medicine*, led by Muhammed Murtaza, MBBS, PhD, professor of surgery, University of Wisconsin School of Medicine and Public Health, researchers used a machine-learning model to examine blood plasma for DNA fragments from cancer cells. The technique, which uses readily available materials, detected any stage of cancer in healthy individuals 91 percent of the time, and Stage 1 cancers 87 percent of the time.

The approach hinges on analyzing fragments of cell-free DNA commonly found in plasma. The fragments typically come from blood

cells that die as part of natural processes, but they also can be shed by cancer cells.

Hypothesizing that DNA fragments from cancer cells might differ from healthy cell fragments, the team analyzed about 2,700 samples from healthy individuals and patients with 11 cancer types; the team also developed a way to measure the proportion of cancer-derived DNA molecules in a sample. Combining this measure with information on the DNA sequences surrounding fragment breaking points, they developed a machine-learning model to compare healthy cells to cancer cells.

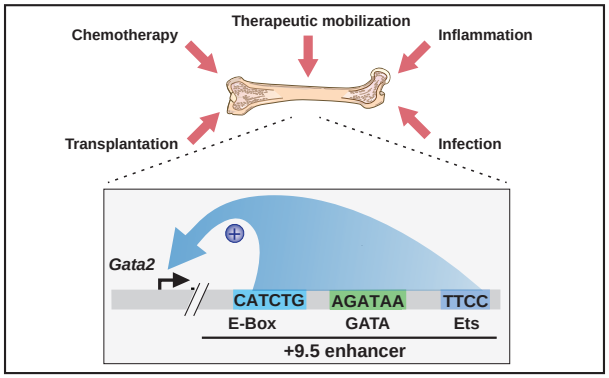
Murtaza says the model's accuracy in the current study points toward further research in different age groups, in patients with additional medical conditions, among those at risk of developing specific types of cancers, and as a way to monitor patient response to chemotherapy.

"My hope is that this work will lead to a blood test for cancer detection and monitoring that will be available clinically in the next five years for some conditions, and will be accessible for patients with limited health care resources," says Murtaza, who also is the associate director for the Center for Human Genomics and Precision Medicine.

Mouse Study May Help Doctors Choose Treatments for Leukemia Patients

Although some genetic mutations are linked to leukemia and can be passed from one generation to the next, these alterations do not always help doctors gauge disease risk or pinpoint when disease may begin.

"In a family that shares a mutation, a grandfather might not show symptoms until an advanced age," says Alexandra Soukup, PhD, a cancer researcher at the University of Wisconsin School of Medicine and Public Health. "By contrast, a grandchild with the same genetic alteration may have serious symptoms from age 7. We want to know what environmental and genetic factors trigger disease presentation."



In a study published in *Science Advances*, Soukup, along with Emery Bresnick, PhD, the Gary Felsenfeld Professor of Cell and Regenerative Biology and director of the UW–Madison Blood Cancer Research Institute, and collaborators exposed mice harboring a genetic mutation associated with leukemia to "triggers," such as chemotherapy and inflammation, and studied their response.

In healthy marrow, stem cells should divide and mature into new blood cell producers to pick up the slack. Instead, the mice in the study were extremely impaired in their response to the triggers, one of which was a common chemotherapy drug.

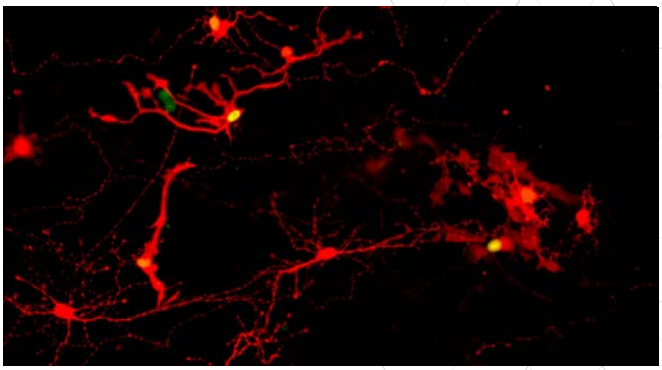
"With the chemo-therapeutic, you would expect the stem cells to expand greatly and blood cells to regenerate, replacing what was destroyed by the chemotherapy. The experimental mice failed to mount a response," says Soukup.

By exploring how the mutant mice respond to these stressors, Soukup says the researchers hope to "learn the types of human health issues that may bring on a life-threatening leukemia. In turn, this should lead to strategies to counteract or nullify the triggering and avoid scenarios in which severe disease rapidly emerges."

Lab-Grown Retinal Cells Make Successful Connections

Over a decade ago, researchers from the University of Wisconsin School of Medicine and Public Health (SMPH) developed a way to grow organized clusters of cells, called organoids, that resemble the retina.

"We wanted to use the cells from those organoids to replace the same types of cells lost to retinal diseases," says David Gamm, MD, PhD (PG '02, '03), professor, Department of Ophthalmology and Visual Sciences, and director, McPherson Eye Research Institute, whose lab developed the organoids. "But would cells grown in a laboratory dish as compact



clusters behave appropriately after we tease them apart?"

In 2022, Gamm and collaborators showed that dish-grown retinal cells (photoreceptors) respond like those in a healthy retina, and once separated from adjacent cells in their organoid, they can reach out with axons.

"The last piece of the puzzle was to see if these axons had the ability to form synapses with other retinal cell types," says Gamm, whose results showing successful synaptic connections were published in the *Proceedings of the National Academy of Sciences*.

To find an answer, Xinyu Zhao, PhD, professor, Department of Neuroscience, and a co-author of the new study, provided a modified rabies virus that can identify cells sharing a synaptic connection using a red fluorescent indicator. The team teased cells out of organoids and gave them a week to extend axons and re-form connections before exposing them to the virus. They found many red fluorescent photoreceptors and other retinal cell types, indicating the presence of new synapses.

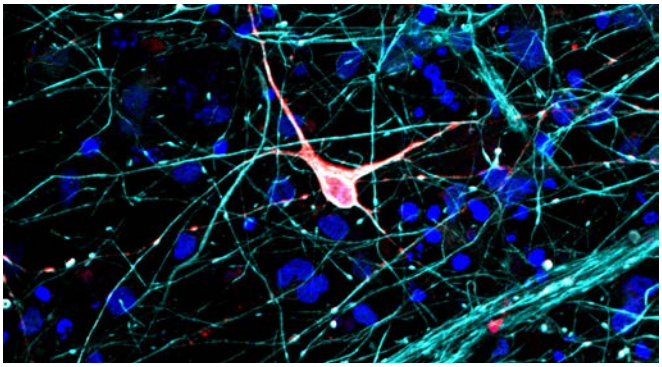
"We've been carefully piecing this together," says Gamm, who patented the organoids. "Ultimately, human clinical trials are the next step."

Differences Between Brains of Primates are Small but Significant

A study suggests that although the brains of human and non-human primates may be remarkably similar, small differences could help explain some developmental and psychiatric disorders.

Published in *Science* by a team including Andre Sousa, PhD, professor, Department of Neuroscience, University of Wisconsin School of Medicine and Public Health, the study investigates the differences and similarities of cells in the prefrontal cortex between humans and non-human primates.

The cellular differences between these species may illuminate steps in their evolution and may be



implicated in disorders, such as autism and intellectual disabilities. Sousa, who studies the developmental biology of the brain at the Waisman Center, categorized cells in the dorsolateral prefrontal cortex, an area that exists only in primates.

"This area is associated with higher cognitive function and is implicated in neuropsychiatric disorders," Sousa says.

The team analyzed genetic information from more than 600,000 prefrontal cortex cells from humans, chimpanzees, Rhesus macaques, and marmosets. Given evolutionary patterns, most of the cells were very similar at the cellular and genetic levels, Sousa says.

Nevertheless, the slight differences the team found may be the beginning of understanding unique factors that could help explain development and developmental disorders at a molecular level.

The observations were made in the brains of adults. The next step is to study samples from developing brains and extend the investigation past the prefrontal cortex to find where and when differences originate.

"Humans are able to do extraordinary things," says Sousa. "If we have these unique abilities, there is something in the brain that allows it, and we want to know what that is."

How Grief Transformed Me

I cannot remember the exact words my mother used when telling me my father had Alzheimer's disease, but I can feel the sense of dread. The image of my sister and mother during that family meeting is blurred by my tears, but I felt their anguish. I still feel it today.

Recalling how the memory specialist delivered the news to my father is much easier. That disclosure was recorded, an uncommon practice but done at the request of my mother. The geriatrician is calm and confident in addressing my father's denial. This "bad news" changed our family's collective lives forever.

Receiving bad news is a universal experience. Whether it is losing someone you love or receiving a poor prognosis, these experiences usher in a time of grieving. Grief is common and has five well-established stages: denial, anger, bargaining, depression, and acceptance. While these stages are inevitable, how we respond to and live with the grief varies greatly. For me, the consequences of my grief were as life-changing as the bad news itself.

Since my father's diagnosis, I have been on the other side of bad news. I'm the one giving it—every day I'm in clinic. As a geriatrician specializing in memory disorders, I spend my time disclosing a dementia diagnosis or explaining why an unpleasant behavior is the symptom of changes in the brain. The grief I carry from my family's journey does not make it easier, but it makes my work more meaningful. I see my father in my patients and my mother in their partners. My empathy is born from this grief and compels me to tell the truth no matter how uncomfortable or "bad" the news will be. David Kessler, who worked with Elizabeth Kübler-Ross, MD, the pioneer behind the stages of grief, calls the sixth stage "finding meaning." I now live in this stage in the memory clinic exam room.

Truth-telling is one way I harness my grief for something meaningful. The loss I feel is more manageable when it allows me to show genuine compassion with my patients. When I hold their hand and tell them they have Alzheimer's disease and will die of this, I tell them as their physician and as a family survivor. It feels more appropriate when I can offer my story, knowing that the things I recommend are not only evidence-based but personal anecdotes. Aside from the "street cred" my loss has provided, families understand that I speak from more than textbooks. I speak from the lived experience they will come to know. There are things I wish I would have done for my father that I cannot do now that he's gone. I share these things with my patients' families, so they can learn from my experience.

As a recipient and giver of bad news, I am very particular about the word choice, cadence, and confidence when delivering the news. I know how devastating this kind of information can be. There are physical reactions like ringing in the ears, unfocused vision, and the sense that time has stopped. Mindful of these reactions, I relentlessly practiced disclosing diagnoses during my geriatric fellowship and continue to revise my explanations. Inherently, a difficult medical disclosure will never be perfect, but I constantly strive to improve. I see that bad news can be better received when it is authentic, and when the conversation has been carefully rehearsed. Anticipating questions, describing emotions, and pausing at the right times takes more than experience, it requires reflection. Palliative care providers have mastered this skill, but it's one all clinicians need. If it is true that it takes at least 10,000 hours of practice to achieve expertise in a skill, I have a long way to go. Yet, I am certain I have gotten a leg up by being on the other side.

My response to bad news was to change career paths and commit to caring for the people my family became after my father's diagnosis. That transformation was relatively easy at a place like the University of Wisconsin School of Medicine and Public Health, where my colleagues welcomed me warmly, just as they did for my father as their patient. My research co-investigators were once the principal investigators of studies my parents enrolled in, and they now challenge me to push the field further.

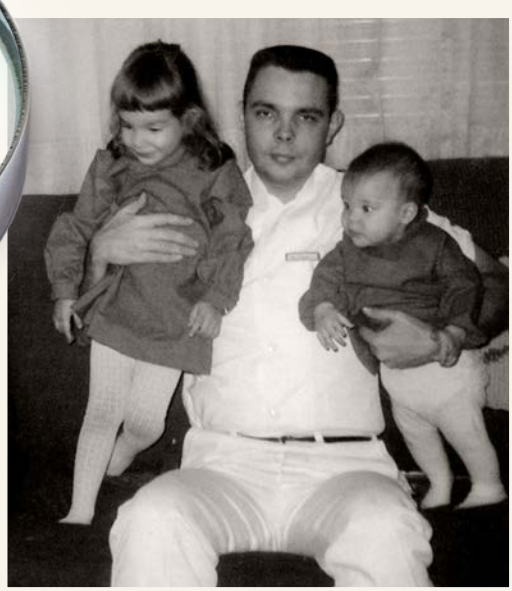
Nathaniel A. Chin, MD '10 (PG '16), and his father

As medical director of the Wisconsin Alzheimer's Disease Research Center, I host the Dementia Matters podcast, which has become my outlet to share reliable information on Alzheimer's disease to a community of listeners I imagine to be much like my family. Dedication to translating brain science for public consumption and providing meaningful information for caregivers has allowed me to channel my grief on a larger scale. While the podcast aims to educate listeners, it also serves to break down stigma that surrounds dementia, dispel disinformation, and connect people. To me, it represents our institution's commitment to the Wisconsin Idea—sharing our discoveries beyond the lab, classroom, and clinic. The "bad news" I received has transformed so much about myself and my career.

NATHANIEL A. CHIN, MD '10 (PG '16)

Assistant professor, Department of Medicine, Division of Geriatrics and Gerontology, University of Wisconsin School of Medicine and Public Health; medical director, Wisconsin Alzheimer's Disease Research Center and Wisconsin Registry for Alzheimer's Prevention Study

I Know YOU



... Or do I?

If you think you can identify the person in the photograph at right, send your guess to *quarterly@med.wisc.edu*. We'll draw one of the correct responses and announce the winner in the next issue of *Quarterly*.

HINT ABOUT PHOTO ABOVE:

He was a basketball star before medical school.

ABOUT LAST ISSUE'S PHOTO:

John G. Jaeger, MD '67, won the prize drawing and will receive a gift from the Wisconsin Medical Alumni Association!

In the last issue of *Quarterly*, 148 people correctly identified Betty J. Bamforth, MD (PG '51), a physician, teacher, researcher, mentor, historian, and professor emerita of anesthesiology at the University of Wisconsin School of Medicine and Public Health (SMPH) until her death in 2001 at age 78.

Bamforth earned her medical degree at Boston University and completed her anesthesiology residency at Wisconsin General Hospital in Madison. She was among the last residents to serve under Ralph Waters, MD, chair, SMPH Department of Anesthesiology—considered the father of modern anesthesia—in the first such academic department in the United States. In 1954, Bamforth joined the SMPH faculty and served for 38 years, including 10 as the assistant dean for student affairs and one as the assistant dean for academic affairs.

She achieved many firsts in her career: first female chair of the Department of Anesthesiology; first female mentor for the medical school, serving the Class of 1992; and first woman to deliver the distinguished Emery A. Rovenstine Memorial Lecture for the American Society of Anesthesiologists, the most prestigious award bestowed by the society. She attained international prominence for her scholarly work about the history of anesthesiology.

Readers used the following words to describe Bamforth: warm, humorous, wonderful human being, tough but fair, pioneer, ground-breaker for women in medicine, and great role model. Several noted that she was an avid sailor.

Keith Meyer, MD '81 (PG '84), said, "Dr. Bamforth went out of her way to help me and others thread the needle and find our paths to the post-graduate training programs we desired."

Marjorie Sexton, MD '80, wrote, "She was a huge supporter of women who wished to enter the halls of 'mostly male' medicine [at the time]."

Louis C. Bernhardt, MD '63 (PG '72), shared, "As a surgeon on the other side of the 'ether screen,' I can still picture Dr. Bamforth peering over the surgical drapes to make sure the patient and surgeon were doing OK. ... Outside the operating room, she always had time for her colleagues, residents, and students. Too bad we couldn't clone her!"

PLEASE SHARE YOUR NEWS!

Please send us information about your honors, appointments, career advancements, publications, volunteer work, and other activities of interest. We'll include your news in the Alumni Notebook section of *Quarterly* magazine as space allows. Please include names, dates, and locations. Photographs are encouraged.

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Please send us your new address.
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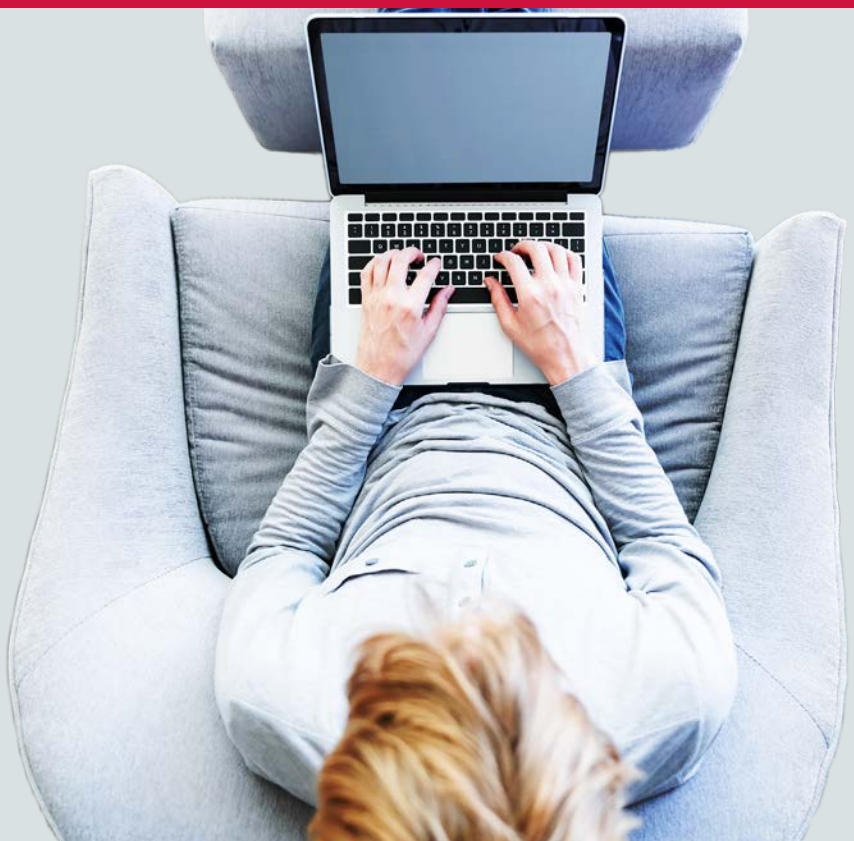

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Help ensure that ***Quarterly*** meets your needs and interests by taking our anonymous readership survey at **go.wisc.edu/quarterlysurvey**.

If you need assistance, cannot take the survey online, or have questions, contact the Wisconsin Medical Alumni Association (WMAA) team at (608) 263-4915 or wmaa@med.wisc.edu. You may request one of a limited number of printed surveys by mail.

The survey will close on Monday, May 15, 2023. Thank you!