# 2024 MARSHFIELD CLINIC RESEARCH INSTITUTE YEAR IN REVIEW

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*Greetings Friends and Colleagues.*

I am especially excited this year to share with you the Marshfield Clinic Research Institute’s 2024 *Year In Review.* I say **‘especially excited’** because I was a **huge** advocate for highlighting the synergy derived from strong teams.

What comprises strong teams? Members of strong teams value and trust each other. They appreciate diversity of skills, experiences, and perspectives. When differences arise as to how tasks may be accomplished, strong teams approach these conversations with civility.

Strong team environments are places where brainstorming is accomplished safely. They leave no one feeling uncomfortable when suggesting something that may challenge the norm.

Strong teams take the time to know and understand one another; they show each other compassion and empathy. They celebrate accomplishments together.

Treating one another with these very basic human kindnesses invites innovation. Feeling appreciated and safe in our workplace creates the opportunity to think boldly, broadly, and outside of the conventional. It is exciting to sit in a room with research teams, strategizing about how a complex study idea can be transformed into an operational success.

The parts of research I enjoy most are the study start-up meetings. Transforming what we conceptualized on paper in a grant application into an actual living, breathing study is exhilarating. The loftiness of starting a study can also leave people feeling overwhelmed by the monumental tasks, short timelines, and demanding deliverables. However, in strong teams, everyone at the table brings their talents to break mountainous ideas into smaller, manageable rocks and pebbles. Everyone knows what to do with their piece and excels in doing so.

In the 2024 Year in Review, you will learn first-hand how our people, working together, bring out the best in each other. You will see the impact of our work, the value of science and medicine, and the greatness of our research. This year, you’ll also see a lot of comparisons to sports — to help highlight the teamwork that goes into our research.

I remain mindful, that our communities, patients, and donors are **integral** parts of our teams. Without study participants, support in our cities and towns, and the generosity of our donors, we could not make the goals we establish each and every year. My colleague Dr. Jeff VanWormer once famously said, “We definitely punch above our weight at MCRI in the quality of our research.” The strengths of our teams and the accompanying innovation certainly makes this true.

Enjoy our Year of Teamwork.

*Jen*

Jennifer Meece, Ph.D.
Executive Director
Marshfield Clinic Research Institute

# *Research-informed cardiac care starts at home*

Home-field advantage can make the difference when trying to beat cardiovascular disease, the leading cause of death in the U.S. Marshfield Clinic Research Institute is bringing research-informed cardiac care closer to where our patients live, using clinical trials, donor-powered innovative studies and intensive research training.

Clinical trials provide access to new devices, procedures and treatments across our rural communities. Megan Johnson, research coordinator IV in the Fritz Wenzel Center for Clinical Research, witnesses first-hand how patients benefit. She credits the passion of Shereif Rezkalla, M.D., for research that's revived our clinical trial portfolio. Johnson is currently screening patients for a half-dozen clinical trials in Marshfield and Weston, with several more trials on deck. She finds it "beyond rewarding to work alongside physicians who are passionate about their patients" to make new devices and drugs available, she said.

Meanwhile, in the Center for Clinical Epidemiology and Population Health, Jeff VanWormer, Ph.D., impacts care another way. As the center's director and recipient of the Celine Seubert Distinguished Physician/Scientist Endowment in Cardiology Research, he's leveraged the generosity of the Seubert family and funding from extramural sources for clinical trials, testing lipid-lowering drugs and studying the associations between periodontal disease and heart failure. He also leads a weight-loss trial looking at impacts on blood pressure and cholesterol. Dr. VanWormer's team collaborates with primary care providers across our system to make this kind of practical research accessible to our patients.

Cardiology residents and clinical preceptors work with Brian Finnegan, resident research facilitator, to navigate the research training they need. Finnegan aims "to give our trainees a research experience that awakens the researcher within," he said. He connects these researchers-in-training to highly sought specialists like our scientists in the Center for Precision Medicine Research, Sanjay Shukla, Ph.D., and Srinivasulu Sathipati, Ph.D., whose genetic expertise helps design impactful studies.

Tahlia L. Weis, M.D., Ph.D., medical director of the Marshfield Clinic Heart & Vascular Service Line, expressed pride at our ability to present findings from our care in local, regional, and national venues. "We have a unique opportunity to care for rural health populations — a different set of challenges than many university settings," she said. She points out that such graduate medical education makes us a "flagship of excellence in rural health care."

Our program is uniquely positioned with our clinical expertise in the heart of central Wisconsin due to our integrated research and education programs. Few rural health systems can offer this quality of research, education and care. That's a real home-field advantage!

***Fritz Wenzel Center for Clinical Research staff managed recruitment and enrollment for 133 studies in 2024.***

# *Putting patients first opens doors to clinical trials*

Patient recruitment is key to any clinical trial. Without sufficient numbers, studies will lack statistical power to demonstrate the efficacy of new treatments, which could delay or prevent approval of new, potentially life-changing treatments.

The Cancer Care and Research Center meets its recruiting goals by meeting patients where they are along their health journey. As in a successful college athletic program, the recruiting process is mutually beneficial, helping both program and recruits reach their goals.

“This means taking a multi-channel approach, using traditional advertising but also social media marketing and partnerships with health care professionals,” said Regulatory Affairs Specialist Brooke Tesmer. “The patients are always at the forefront of our minds. When we sit down and talk with them, we provide additional materials and conduct additional screening to make sure they all have a chance to join a research study that could help them and, ultimately, find answers to their disease. We don’t want anyone to miss an opportunity.”

Collaboration with health care providers has been particularly fruitful. More than 20 Cancer Care and Research Center staff work with approximately 35 health care providers who interact with research participants at more than a dozen clinical locations throughout Marshfield Clinic Health System. Our research staff screens each patient seen by our providers for clinical trial opportunities in up to 200 protocols open at any given time. We review providers’ schedules, with the research team working ahead of patient visits, and after initial consultations, our team identifies which trials a patient may qualify for. When a potential participant is found, our staff approach, consent, and enroll them in clinical trials with the support of regional research and clinical staff (medical assistants, nurses, appointment coordinators and regional managers).

We are also fortunate to be part of the National Cancer Institute Community Oncology Research Program (NCORP), a national network that brings cancer clinical trials and care delivery studies to people in their own communities. Through NCORP, our Research Base partners help us brainstorm unique ways to screen for potential participants.

“A recent example relates to one of our clinical trials,” Tesmer said. “The eligibility criteria include ‘participants who have completed their treatment and report their fatigue as being moderate to severe in the past week.’ A provider pointed out that while screening for fatigue can be difficult since it’s not always documented in a note, they found great success in screening participants based on recent prescriptions for anti-depressants, thus narrowing down study candidates without searching the electronic health record for the word ‘fatigue’ for every patient in the providers’ schedules.”

By using new recruiting methods and screening participants for multiple trials at once, the Cancer Care and Research Center increases opportunities for patients while not putting additional burden on research or clinical staff. A classic win-win.

***There were 377 participants enrolled in Clinical Trials at MCRI in 2024.***

***Using medical record data, study teams screen approximately 8,000 potential participants each year to determine eligibility.***

# *Farm life can mean a healthier life*

Collecting manure and cow snot is a dirty job that often requires a few extra hands to get the job done. Marshfield Clinic Research Institute is intimately familiar with this line of work.

Did you know that central Wisconsin dairy farmers share many of the same microscopic organisms as their cows, which may lead to greater protection against illnesses like allergic rhinitis, asthma, eczema and diarrheal diseases? Research Institute scientists collaborated with the Washington University School of Medicine to publish one of the largest studies of its kind in the April 2024 issue of Nature Microbiology on the health of dairy workers from occupational exposure to cow and manure-related microbiome. Microbiome is the collection of all microbes, such as bacteria, fungi, viruses, and their genes that naturally live in the human body or an environment.

That research took place on 37 dairy farms throughout central Wisconsin where farmers and their dairy cows were not just producing your next glass of milk or block of Colby cheese, but the evidence used to investigate why some people get sick and others don't. Three researchers spanning the spectrum at Marshfield Clinic Research Institute – Sanjay Shukla, Ph.D., director of the Center for Precision Medicine Research; Casper Bendixsen, Ph.D., director of the National Farm Medicine Center; and Epidemiologist Jeffrey VanWormer, Ph.D., director of the Center for Clinical Epidemiology and Population Health – sought the answers.

***Visit CultivateSafety.org for resources and information on safety strategies for producers, farm families and media.***

"We know that people who work on farms have some unique health characteristics, both good and bad, but we do not fully understand why," Dr. VanWormer said. "This study helps us begin to understand the biological pathways by which the farm environment impacts workers' health."

Like farming, research on farms requires some dirty work. Farmers and a control group of non-farmers self-collected nasal and fecal samples. Nasal secretions and fecal samples from cows were collected either by research coordinators or by farmers. Study coordinators recruited participants and the Integrated Research Development Laboratory coordinated biospecimen extraction and analysis.

The microbiome study is part of ongoing work that the Research Institute has conducted for years. Science has only begun to understand that symbiotic relationship people have with microbiomes, and not only for farmers. Continued research is needed to determine if the theory that "good bacteria" found in farmers creates an environment detrimental to "bad bacteria."

"It's an exploration of these creatures' relevance to the human body, and their relationship to the human body," Dr. Bendixsen said.

With so much to learn, additional research requiring partnerships within the Research Institute and local dairy farmers will continue.

"Future studies are warranted to determine whether and how diet and antibiotics facilitate the acquisition, maintenance or amplification of farm- and livestock-associated microbes, as well as their antibiotic resistance genes," Dr. Shukla said. "Ultimately, such a comprehensive understanding of how human-animal interfaces shape the resident human microbiomes could give rise to novel strategies for mitigating the risks of animal agriculture on farmers and broader public health."

# *Keeping care for rare diseases closer to home*

When a northern Wisconsin family's two-year-old son was diagnosed with a rare disease, the family's team of doctors, care providers and research coordinators at Marshfield Clinic stepped up and found a solution that would allow treatment to occur just minutes from their home.

Garrett loves his Lab, Drake, and any movie with dogs in it. He likes John Deere tractors and playing outside. He's a fun-loving kid who makes his parents smile. Garrett also has Hunter syndrome, a rare X-linked recessive disorder diagnosed in roughly 1 out of every 100,000 to 170,000 children assigned male at birth. This genetic disorder causes the body to not properly break down certain sugar molecules. When these molecules build up in organs and tissue over time, they can cause damage that affects physical and mental development.

Marshfield Medical Center-Minocqua Pediatrician Cynthia Henry, D.O., has been part of Garrett's life since he was born in late 2022. But in his first several months, Garrett was battling respiratory infections, breathing issues and needed hernia surgery. After his nine-month well child checkup Dr. Henry put the clues together, and a series of tests confirmed, that Garrett had Hunter syndrome. Without treatment most kids pass away within the first decade of their life.

In the past, patients like Garrett with mucopolysaccharidosis disorders had few treatment options. A new clinical trial in North Carolina provided hope. Garrett and his mom, Breanne Busterud, moved across country to begin treatment.

"How do you tell a family that their only treatment option would require relocating or traveling weekly to the other side of the country?" Dr. Henry said. "It's not feasible. We had to find another way."

They moved home in June 2024 and continued treatment in Chicago, a six-hour drive from Rhinelander. But ever since January, Dr. Henry and the Fritz Wenzel Center for Clinical Research worked to set up a more reasonable treatment plan. Agreements needed to be arranged and plan in place to transfer Garrett's care to Minocqua.

"We had to navigate budget and contract reviews, Institutional Review Board (IRB) approval; all of those things take time. The family was aware we were trying to get care set up in Minocqua as efficiently as possible," said Melissa Slager, manager of research studies. "I feel very fortunate to be part of such a great team dedicated to connecting this family with the clinical trial in Minocqua."

The work paid off and Garrett is now receiving his care in Minocqua, a mere 40-minute drive from their Rhinelander home. The weekly infusions that slow the disease's progress take about four hours plus time for monitoring Garrett's vitals. He is able to sleep through most of the treatment or watches movies.

"Having met the family, you can see the relief from the burden of travel," said Megan Johnson, research coordinator. "No more of mom and Garrett staying in a house in North Carolina or those long drives to Illinois. Now they are closer to home and the entire family can be together."

While Garrett is closer to home, the team that made this possible has come together from across Wisconsin. Dr. Henry and her medical team are in Minocqua, Slager and Johnson are in Marshfield, and help came from across Marshfield Clinic Research Institute and Marshfield Clinic Health System departments including Information Services, Lab, Investigational Drug Pharmacy, Radiology, Genetics and other pediatric specialists. Creating this treatment option for Garrett also gave staff valuable experience that can potentially lead to other collaborations to bring clinical trials previously only available in other areas to rural Wisconsin.

"It has been great. There will always be issues to work though when you start something new, but I know the nurses and doctors are taking their time and getting it right for Garrett," Busterud said. "We couldn't be more thankful."

# *A dynamic team is like a family*

In 2007, Marshfield Clinic Research Institute and University of Wisconsin-Madison bonded to translate research into clinical practice, forming the Institute for Clinical and Translational Research (ICTR). ICTR is, in fact, a lot like my family – a dynamic and growing group of tight-knit individuals coming together in one diverse team.

Growing up, my four parents treated all my siblings as siblings, whether we shared blood or not. From them, I learned how a family's sense of belonging and unity can grow even while respecting the unique personality traits of each individual. Within the ICTR family, siblings include *infrastructure development, education and training,* and *programs*.

**In 2024, Research Institute researchers and Health System clinicians partnered with UW-Madison staff for a pilot project that promoted effective relationships between families/caregivers and health care providers.**

*Infrastructure development* is like my older brother. He's diligent and reliable. He builds relationships with people everywhere he goes and relies on these friendships to achieve goals. The infrastructure developed by ICTR is one of the founding cores of the program. It supports and builds resources which first increase capabilities, then accelerate research. This component develops data sets which allow researchers and staff to determine the existence of a patient population and assess available data prior to beginning research. Research Institute staff dedicated about 250 hours to complete 61 feasibility requests in 2024.

The middle sibling within the ICTR family is *education and training*. It provides education, career support, and study assistance. This group parallels where I fall within my own family structure – the somewhat rebellious, determined type. It offers National Institutes of Health-supported training programs, graduate and certificate programs, and a wide range of events and workshops designed to advance research careers and broaden knowledge. As the middle children, these teams often work behind the scenes, offering countless support opportunities and training events for individuals at both institutions. These events range from writing workshops covering applications, posters, and grant reviews to weekly training on tools, such as REDCap.

The youngest child of many families is usually like my own siblings: agreeable, adventurous, and free-spirited. Within ICTR this bold group is undoubtably *programs.* These teams rely on their social network to connect individuals and promote opportunities and funding, providing the essential networking needed to secure awards and help researchers to grow their careers. They help build portfolios of innovative treatments and practices with real-world impact.

Over the last 14 years the ICTR partnership has become more than a combined effort. It has grown through patience, shared experiences, communication and connections built on shared interest, to evolve into a family. This family nurtures both organizations and the growth of individuals, too. Take me, for example; I started working in research recruiting participants and I have grown to be able to use all my unique personality traits to help improve the health of communities in Wisconsin and across the nation.

*– Madalyn Palmquist is the Marshfield Clinic Research Institute ICTR program manager.*

**Feasibility Requests**

Average **two** feasibility requests/week

**145 requests** in 2024 for **61 individuals**

# *Passing the baton:*

## Center maintains continuity in transitioning to new leader

Teamwork takes many forms, all requiring people to work toward a common goal. The National Children's Center for Rural and Agricultural Health and Safety was formally established in 1997 with National Institute for Occupational Safety and Health (NIOSH) funding and Barbara Lee, Ph.D., as director. Since its inception, many individuals have conducted research studies and outreach projects using a team approach, but always under the same management structure.

Parallels to a track-and-field relay team were readily apparent this year as Dr. Lee "passed the baton" to Andrea Swenson, Ph.D., who had experience as the Center's evaluator and more recently, associate director. In executing this move, Drs. Lee and Swenson demonstrated the keys to a successful handoff: both runners staying in their lanes, matching speeds, communicating effectively and practicing.

Drs. Lee and Swenson said it was important to respect each other's values, perspectives and expertise, and they agreed on priorities for a one-year transition period. Dr. Swenson was mentored by Dr. Lee, National Farm Medicine Center Director Casper Bendixsen, Ph.D., and Assistant Manager Kathie Smith on critical processes for running a $6 million grant, including budgeting, external contracts with sub-awardees, federally-required reports, interactions with government officials, seeking guidance from consultants and dealing with personnel changes.

"The greatest part for me is having time for my own projects and being able to weigh in on Children's Center activities without the responsibility of the administrative tasks," Dr. Lee said. "And it's been so rewarding and satisfying to observe Andrea's steady growth in her leadership role."

> ***"I am privileged to have the support and mentorship of Barb and colleagues as I grow in this new role. I am excited to continue the legacy of excellence that Barb and the Children's Center's staff have established."***
>
> ***- Dr. Andrea Swenson***

As incoming director, Dr. Swenson expressed gratitude for the opportunity to continue the work and mission of the National Children's Center. As a child, she was very active working on her family's dairy farm in central Wisconsin, and her roles within the National Children's Center and National Farm Medicine Center offer the chance to further engage in agriculture and support the community.

"I am privileged to have the support and mentorship of Barb and colleagues as I grow in this new role," Dr. Swenson said. "I am excited to continue the legacy of excellence that Barb and the Children's Center's staff have established."

Succession planning can be messy. But the National Children's Center took its time, promoted from within and asked the team to participate in a strategic and proactive process. The smooth transition maintained stability and effectiveness, hallmarks of the National Children's Center for nearly three decades.

# *Many rowers, one crew*

It helps to imagine the Office of Research and Sponsored Programs like a rowing team: we are all pulling together to move the Marshfield Clinic Research Institute forward. As research flows through this office, we begin by determining each study's feasibility. Next, we help guide researchers, clinicians, summer interns and residents in study design.

To ensure projects follow human subject protections, we facilitate Institutional Review Board requests. At many steps along the way, we advise researchers on how best to proceed with grant funding opportunities both inside and outside the Research Institute and negotiating clinical trial agreements. Then, we assist with post award reporting, and in making requests to the sponsor when modifications are needed. We edit, advise on, and publish scientific manuscripts, including overseeing two in-house journals, the *Journal of Agromedicine* and *Clinical Medicine and Research*.

Even though we all have different seats on the boat, it takes a lot of coordination! Have a look at how we help with all these moving parts to keep research on a steady course.

***In 2024 there were 20 unique projects led by residents.***

## IRB in 2024

Staff spent **3,160** hours on IRB activities, equivalent to nearly **80** weeks of dedicated time.

## Grants

**190** Total Grant Submissions

**135** External Grant Submissions

- **17** MCHS
- **118** MCRI

**55** Internal Requests

- **8** MCHS
- **47** MCRI

**152** Clinical Trial Agreements Negotiated

## Clinical Medicine & Research

**100** article submissions and more than

**121,000** downloads of articles

**35** percent acceptance rate

## Journal of Agromedicine

**117,000** downloads of articles

**2.1** Impact Factor

# ‘Big-time infectious disease research’

When Marshfield Clinic Research Institute had the opportunity to compete for an ambitious, time-sensitive industry study of patients with respiratory and diarrheal illnesses – producing local results that will help guide vaccine development nationwide – we rallied to the challenge.

“Most of us have gotten sick with cough, cold or flu symptoms or a stomach bug,” said Senior Research Scientist Huong Nguyen, Ph.D. “This study is providing much-needed information on the frequency and causes of these illnesses in the community.”

Although our scientists and support staff are nationally recognized in vaccine research, laboratory testing and study operations, a heavy lift was required for this study, officially titled: “Prospective Assessment in a Community Cohort: Enteric and Respiratory pathogens (PACC-ER).”

Game on!

“It seemed as if we could not ramp up staffing fast enough,” said Project Manager Roxy Eibergen, Center for Clinical Epidemiology and Population Health. “We reached out across all centers for research coordinators to help with recruiting and screening, even those who don’t typically recruit. Our lab has really stepped up and so have our friends in the Marshfield Clinic Health System, which enables us to compete for these very large research studies.”

Primary care departments shared recruiting materials in their offices. Physicians and nurses encouraged enrollment. The phlebotomists have been amazing, coming in after hours to draw blood from participants, Eibergen said. The Marshfield Clinic Colby-Abbotsford Center team made space for participant visits when the need arose to see Spanish-speaking recruits in Colby, closer to where they live.

“From top down it’s been a can-do attitude,” Eibergen said. “It’s been awesome.”

“This is big-time infectious disease research,” said Associate Research Scientist Joshua Petrie, Ph.D. “It’s a wonderful opportunity for Marshfield-area residents to participate in science that is community-focused. It’s quite rare for a large research study like this to take place in a rural Midwestern setting.”

The study kicked off with 18,000 invitation letters sent to Marshfield-area residents. Recruiting was supplemented by social media outreach and materials placed in patient-seeing areas. The study will enroll and follow about 1,500 people of all ages for up to two years. The goal is to understand how often people get infected, learn more about the type of illness people in different age groups have, and the best ways to prevent them. Researchers test nose swabs and stool samples to identify the germs that may be causing illnesses. Blood and saliva samples are tested to learn about immune responses.

“Looking for 1,500 participants of all age groups is always going to be a challenge,” said Research Coordinator Kelly Scheffen. “But we got a head start thanks to the community that we’ve developed through years of research. Meeting all the new people interested in this study, and some returning faces from previous studies, has been great.”

# *REDCap: Adding value to the research team*

To be named MVP on a team with more than 7,600 collaborating institutions worldwide is amazing. Marshfield Clinic Research Institute is fortunate to have two "most valuable players."

Meet Leila Deering and Chris Kadolph, leaders within the global REDCap community. REDCap (Research Electronic Data Capture) is a web-based application used for clinical research and to create databases. REDCap is secure and ideal for handling data collected with surveys and forms. REDCap software has generated over 2.2 million projects from over 3.4 million users in 159 countries.

Each year, the REDCap Consortium acknowledges a consortium member who embodies excellence in providing support to its ever-growing, international group of REDCap administrators.

Deering, an applications analyst specialist, and Kadolph, a software development technical lead, provide solutions that not only address the specific needs of Marshfield Clinic Health System but also offer shareable, customizable tools for others around the world.

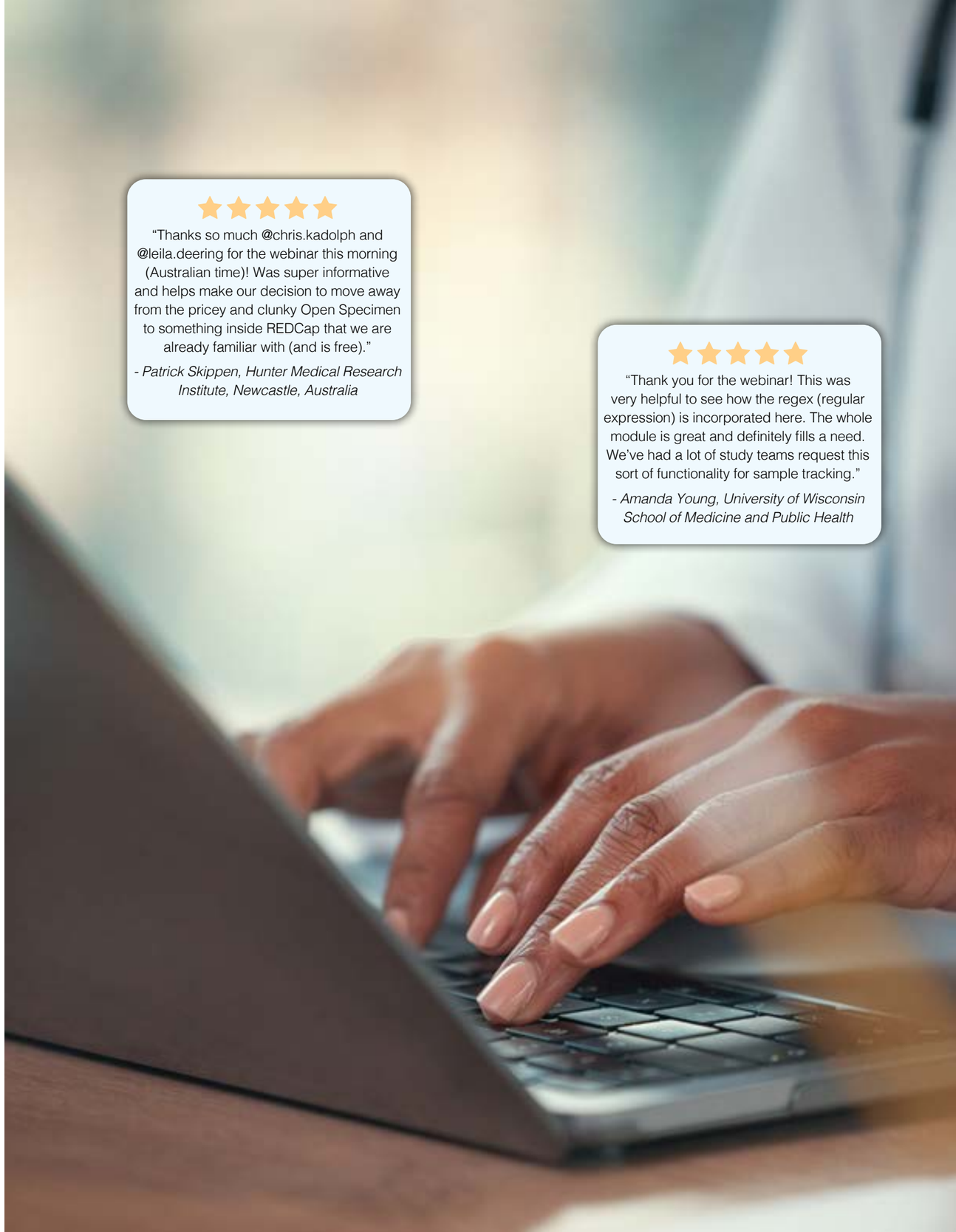
"Leila and Chris have the ability to innovate and create solutions that weren't previously thought possible in REDCap," said Lynda Kubacki-Meyer, director of information technology development and infrastructure for the Research Institute. "They are critical partners to our study teams, and our study teams are critical partners to understanding needed enhancements. Without the level of automation, efficiency, and cost savings our REDCap team can offer, it would be difficult, if not impossible, to manage high-enrolling recruitment studies within our Institute. I am extremely proud to work so closely with these focused and dedicated individuals."

For more than eight years, Deering, Kadolph and the Office of Research Computing and Analytics (ORCA) REDCap team have developed and maintained solutions for both research and administrative projects. Since 2020, ORCA has worked closely with the Integrated Research and Development Laboratory. ORCA's most recent project with the lab – a module supporting gastrointestinal (GI) assay testing – is part of a four-module series designed for large, multi-site studies focused on specimen testing. This comes on the heels of the ORCA Specimen Tracking module, developed in 2021 and widely adopted within the REDCap Consortium for its versatility in tracking biospecimens. Since then, the Jackson Laboratory in Bar Harbor, Maine, partnered with Deering and Kadolph to enhance the module.

"The ORCA Specimen Tracking module is a game-changer for labs using REDCap, offering an affordable, no-cost solution that can be easily customized to meet a wide range of tracking needs," Kubacki-Meyer said.

Looking ahead, we are proud to announce that Marshfield Clinic Research Institute will host REDCapCon 2025, a conference for REDCap administrators, Sept. 14-17. This global event will offer opportunities for networking, learning, and sharing best practices, bringing together attendees from across the world to central Wisconsin.

***There are a total of 2,257 REDCap projects active within the Research Institute.***



# *Engaging community members in tickborne disease research*

Someone walking down a dark hallway in the Integrated Research and Development Laboratory might feel their blood run cold, as if they were being watched. The creepy feeling and rumors about people lurking in the shadows has a logical explanation, though. These are not surplus tackling dummies from the local high school, rather, our Tick Inventory via Citizen Science (TICS) team has been storing mannequins in the lab as part of our successful tick-collection collaboration.

The TICS team is composed of Marshfield Clinic Research Institute staff, support from Marshfield Clinic Health System – and citizen scientists! This year, we asked members of the public to send us ticks found on themselves or their pets using handy collection kits. We distributed these kits through outreach events that included the tick-check mannequins, which help participants practice looking where the tiny arachnids may hide on the body.

The response to our call for ticks was astounding – we received nearly 6,000 specimens, from urban and rural Wisconsin, adding them to the laboratory freezer for safe storage. Many people participated because they are concerned about tickborne disease, particularly Lyme disease. Our TICS team is concerned, too. Lyme in particular is incredibly difficult for clinicians to diagnosis without the characteristic bulls-eye rash, which may sometimes appear only briefly or faintly. Research Institute researchers are working to improve Lyme tests for clinical laboratories, and we are a trial site for a Lyme vaccine. We've joined a national network of hospitals and clinics to improve Lyme surveillance based on health records.

Some may wonder, how does a freezer full of ticks help drive research? First, by identifying geographic and seasonal trends, plus detecting rare species like the newly arrived Lone star tick, then the TICS team can use our specimens to sequence DNA from the ticks and their microbiomes. We think that the tick microbiome may influence how well a tick can carry and transmit disease. Learning more about their microbiome may drive new treatments to fight these diseases.

The success of TICS depends on the collaboration of our fantastic team, which could include you! We are already planning the next year of tick collection (including hands-on training with our tick-detection mannequins). Request your kit or ask about our outreach events by emailing tics@marshfieldclinic.org. Our team looks forward to teaming up with you!

***Wisconsin has one of the highest rates of Lyme disease in the nation, according to the CDC, and more than 300,000 cases are diagnosed each year across the U.S.***

# *Trauma:*

## An analytic approach to heroic work

Studies suggest that it takes 17 years for research evidence to reach clinical practice. To serve our patients better, Marshfield Clinic's interdisciplinary team in trauma care works hard to shorten this period between scientific discovery and implemented care. Some of our 2024 improvements might be likened to the movie *Moneyball*, where an analytics approach helps a baseball team's general manager optimize team performance. Our data analytics help build innovation in health care services.

How does it work? One of the team's major 2024 accomplishments was developing a centralized Trauma Data Repository. The Trauma Data Repository represents the strength of Marshfield Clinic Health System's collaborations between diverse team members like programmers, leadership, physicians, and scientists. Usually, technical reporting hinders the use of clinical experience for research purposes. Our team overcame this barrier by creating a standardized database with analytic software able to pull from all eight MCHS trauma registries. The trauma team designed and pulled source data, which was then transformed and visualized by the Office of Research Computing and Analytics. The Trauma Data Repository helps us consider different patient factors together. For example, geospatial mapping data from the National Farm Medicine Center helps us determine how geographic factors impact trauma care. Such complex teamwork improves trauma and acute care surgery for rural patients. More broadly, the Trauma Data Repository's summaries, intuitive charts, and robust search options give us a glimpse at the many factors which can affect patient care. These visuals may not pop up like the fancy graphics on a modern sports broadcast, but they do help our researchers visualize the statistics about trauma care. Through peer review, researchers hold one another accountable to ensure the best care delivery. This means presenting research for the scrutiny of experts at conferences as well, and we delivered six national-level presentations this year. Research needs to be shared to be implemented.

***In 2024 there were a total of 13 Trauma Research Projects and 2 Resident Research Trauma Projects that were overseen by Dr. Rhodes and the Trauma team.***


Unlike the *Moneyball* approach which gets granular with individual contributions, trauma research lends itself toward a team analysis. To develop the best research, clinicians need support. Pairing up with other professionals can help them bridge the gap between practice and discovery. Particularly in trauma care, where every second counts, research drives care that works at a heroic pace.

Trauma Research Scientist Heather Rhodes, Ph.D., embodies our System's commitment to collaborative improvement. Dr. Rhodes has created an interactional research process wherein she pairs with front-line clinicians to drive investigations leading to better patient care. Such collaboration aligns with the standards provided by the American College of Surgeons Committee on Trauma, which regulates trauma centers. It is a stepwise program that does not overwhelm a busy clinic schedule and easily adapts to research projects across many disciplines. Ultimately, the structure of this research process guides clinical investigators to close research-to-practice gaps and improve care.

# *Learning from, and caring for, our military and veteran community*

More than 315,000 veterans of the U.S. Armed Forces call Wisconsin home, representing about 7.2% of the state's population. Military family life is often characterized by mobilizations/deployments, separation and increased risk for injury or death of the service member. Compared to their urban counterparts, rural veterans face disparities related to mental and physical health and unique barriers to health care access including geographic distances and limited availability of clinical specialties.

At Marshfield Clinic Health System (MCHS) and Marshfield Clinic Research Institute, we're dedicated to providing a welcoming environment and exceptional care to these veterans, military members and their families.

"We're setting a standard for what it means to truly support the military community," said veteran Bryan Weichelt, Ph.D., lead researcher on military and veterans' issues at the Research Institute. "Through collaboration between our Veterans Business Resource Group, clinical teams and research leaders, the Health System is building a robust foundation for veterans' health care initiatives."

To better diagnose and treat military and veterans, staff and physicians at Marshfield Clinic are now asking patients about military status. Capturing this data within the electronic health record ensures health care providers have critical information related to veterans' unique health care needs. The electronic health record initiative is led by Casper Bendixsen, Ph.D., and military veterans Corey Cronrath, D.O., and Jesse Richardson.

**The electronic health record initiative makes Marshfield one of the few health systems in the country equipped to examine health data in light of someone's work and military history.**

Dr. Weichelt praised the timely innovation, "given recent federal legislative actions such as the PACT Act and its impact on veterans' eligibility and access to health care." This includes the Department of Veterans Affairs (VA)-funded Community Care program, he continued, "which veterans can receive at MCHS, once enrolled."

Dr. Cronrath said that, as both a physician and a veteran, "I have been privileged to witness the dedication and sacrifice of our service members firsthand. They face myriad dangers both at home and abroad. Some of these exposures lead to immediate health issues, while others manifest over time. It's crucial for us, as the health care team, to understand these challenges. By understanding and being aware of the risks and hazards they have faced, we can better support them through the services available within and outside of the Health System."

Another impactful development in 2024 was securing the Vet-Coor contract through the VA Office of Rural Health. Led locally by Dr. Weichelt, the team has initiated a four-year contract (approximately $750,000 in total), which has expanded opportunities for both patient care and research.

"This is a really exciting time to be learning from and really helping veterans across our service area," Dr. Weichelt said.

# Legacies dedicated to research

***Donors with planned giving are essential team members to the future of medicine***

Each year, Marshfield Clinic Health System Foundation learns of generous donors who have chosen to make a legacy gift which makes an impact beyond their lifetime. Many of these planned gifts are designated to benefit research, as donors see the value of investing in the future of medical innovation and they want to play their part.

Marshfield Clinic Research Institute has benefitted from past significant legacy gifts, including from Frank R. and Betty J. Koller as well as Richard Kohl. Several legacy gifts were also realized for research in 2024, including:

**Jackie Lindner, Greenwood, WI –** Jackie Lindner was a lifelong resident of Greenwood who lived to be 92 years old. She supported Marshfield Clinic Health System for 21 years, making annual contributions to support causes like medical research. Jackie was never married and lived a life of service, very involved in St. Mary's Parish. She included Marshfield Clinic Health System in her estate and we received a gift of nearly $12,000 after her passing to support medical research.

**Ralph and Diane Mueller, Marshfield, WI –** The Muellers were dedicated residents of Marshfield who lived a life of philanthropy. Ralph worked for Marshfield Clinic Development and Diane was very involved in community activities. Ralph passed in 2020 and Diane in 2023. A gift designation was left in their estate to support the National Farm Medicine Center and the Marshfield Clinic Research Institute more broadly.

**Elizabeth A. Crary Fund, Ann Arbor, MI –** Elizabeth A. Crary established a fund through the Ann Arbor Area Community Foundation in 2010; upon her death, to honor her late brother Thomas H. Crary. Thomas was treated at Marshfield Clinic by Dr. William Hocking and Elizabeth was so happy with Thomas' care that she established this fund upon her death. This year's donation of $56,435.46 went to our area of greatest need. Since the first disbursement to the Marshfield Clinic, Elizabeth has supported our mission with over $580,000 in gifts, primarily in cancer research and cancer patient care funds.

**Estate of Carl E. Linder, Arkdale, WI –** Carl started his relationship with the Marshfield Clinic through his wife, Francis. She was a grateful patient, and both agreed to include Marshfield Clinic in their estate. We are so grateful for their many years of giving and grateful for the gift of $10,000 in his estate. Carl has supported research and the area of greatest need through the years.

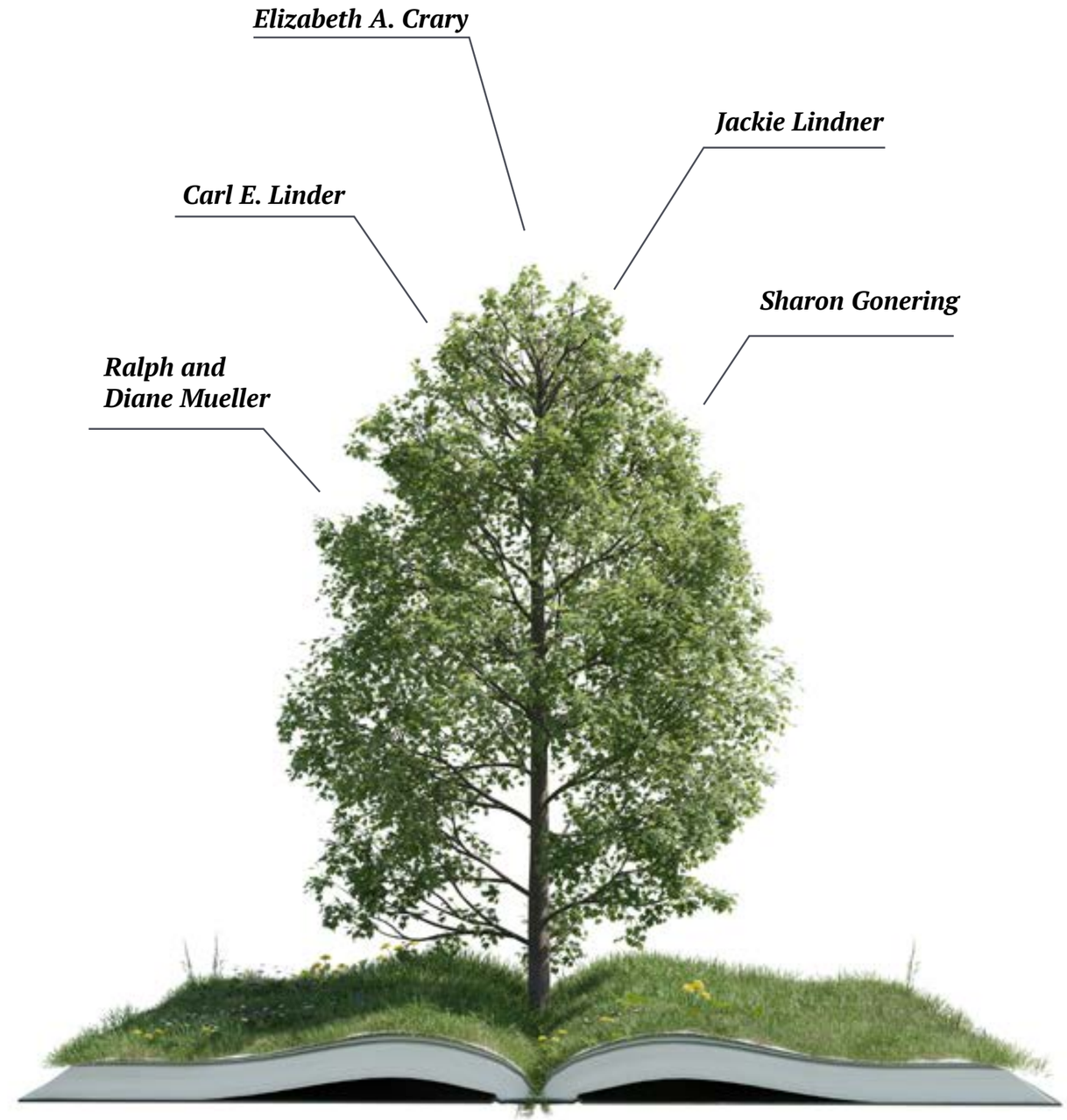
**Estate of Sharon Gonering, Marshfield, WI –** From a simple one-time gift of $5 in 2000 to a legacy gift of $10,000 in her will, we are grateful that she was impacted so long ago to be generous upon her passing.

By choosing to make a planned gift, donors support the causes they care about and positively impact our research teams. Individuals can decide if they would like to help children with cancer; families going through tough times due to a medical situation; scientific teams searching for new ways to diagnose, treat, and prevent disease through medical research; or students learning the practice of medicine so they can provide care for future generations.

There are many ways to make a legacy gift, including:

- A bequest through a will or trust
- Beneficiary designation on a bank account or certificate of deposit
- Beneficiary designation on life insurance
- Beneficiary designation on retirement plan assets
- Gift of real estate with retained life estate

Those who decide to make a planned gift to benefit Marshfield Clinic Health System's mission will become members of the Foundation's Doege Legacy Society. To learn more about legacy gift options, visit marshfieldclinic.org/giving/legacy or contact Carmen Quednow, planned giving officer, at quednow.carmen@marshfieldclinic.org.



# Highlights

## *Center for Precision Medicine Research*

### Predicting breast cancer with microRNA signature

Srinivasulu Sathipati, Ph.D., and his team developed a method called BSig to help predict breast cancer diagnosis. BSig is an evolutionary learning-based method that identifies a microRNA signature that accurately predicts breast cancer diagnosis. It works by integrating miRNA expression profile data from both breast cancer patients and healthy individuals. With this feature, BSig users can take unidentified samples and make miRNA expression profiles samples out of them. BSig then provides a prediction score for each input miRNA profile, ranging from 0 to 1. Lower scores indicate less likelihood of the disease. Because diagnosticians can interact with the tool, it's useful in real-world scenarios. Dr. Sathipati thanks Rohit Sharma, M.D., Nikhila Aimalla, M.D., Patrick Allaire, Ph.D., Scott Hebbring, Ph.D., Sanjay Shukla, Ph.D., and Luke Moat for their invaluable suggestions, comments and contributions to this study.

### Dr. Shukla named Sebold fellowship honoree

Center director Sanjay K. Shukla, Ph.D., was named the recipient of the 2024 Gwen D. Sebold Fellowship. The fellowship recognizes an outstanding medical researcher. A financial award and memorial plaque were presented by D. David "Dewey" Sebold in memory of his sister, Gwen, who joined Marshfield Clinic as a medical stenographer in 1955 and passed away in July 1974. "I am truly honored and humbled to receive the prestigious Sebold award," Dr. Shukla said. "Impactful research is a team-based enterprise, and I have been fortunate to build teams with so many talented colleagues and collaborators to advance the science of medicine in a small way. I want to thank past and present MCHS and MCRI leaders for valuing and supporting research."

## *Fritz Wenzel Center for Clinical Research*

### Guarding against another heart attack or stroke

Cardiac Electrophysiologist Param Sharma, M.D., began enrolling participants for the Librexia ACS Study. This study looks at adults who've had a heart attack within the last seven days and are at risk of having another heart attack or stroke, or of developing blood clots. About 1 in 5 people who have a heart attack will experience a second one within five years. Some medications given after a heart attack, while important to take, may increase the risk of bleeding, so the Librexia ACS Study is looking to see if the study medication may provide a new treatment option that may help decrease the chance of having another heart attack, blood clots, or stroke without causing a significant increase in bleeding. The team includes sub-investigators Jacob Obholz, D.O., and Cory Wuerch, M.D. Megan Johnson and Terry Foss are the lead research coordinators.

## *Cancer Care & Research Center*

### New regional cancer center opens in Iron Mountain

The Research Institute and Cancer Care & Research Center have partnered with Marshfield Medical Center-Dickinson as part of a new 8,600-square-foot cancer care center. This center will bring together chemotherapy infusion, radiation oncology, and oncology clinical care under one roof, offering the highest level of service to patients and families undergoing treatment. By combining cancer care with research, we're providing comprehensive cancer care. "Comprehensive" means the latest equipment, healing spaces, clinical trials, access to nationally-recognized research studies, survivorship programs and support services to rural communities. With the help of many individuals — Oncology Research Nurse Deb Davis, the Dickinson Cancer Center clinical team, CCRC and everyone in between — four clinical trials were active and available to patients as of January 2025.

### Cancer control in Nigeria

While Marshfield Clinic Health System is widely regarded across the United States for its role in oncology research, that level of expertise also is a tool for helping oncologists across the world. Oncology Service Line Medical Director Adedayo Onitilo, M.D., Ph.D., returns annually to Nigeria to share his knowledge and experience to make oncology care and research more collaborative in his home country. Dr. Onitilo was a featured speaker this year on the role of clinical trials at the Association of Radiation & Clinical Oncologists in Nigeria (ACON) 7th Annual General Meeting and Scientific Conference held at the University of Ibadan. The theme of the conference was Cancer Control in Nigeria: Actions For Impact. Dr. Onitilo's seminars and presentations focused on the theme of scaling up oncology clinical trials in Nigeria. Marshfield Clinic Health System served as a model for his presentation, as he discussed a wide range of clinical trial topics including trial design, best practices, patient selection, informed consent, operations, regulatory compliance and trial case studies.

## *Center for Clinical Epidemiology & Population Health*

### Updates to CDC respiratory guidance

CCEPH researchers made key contributions to a Centers for Disease Control and Prevention-led study. CDC introduced simplified respiratory virus guidance based, in part, on data that CCEPH collected as a member of the Respiratory Virus Transmission Network (RVTN), a case-ascertained household transmission study that monitored daily COVID-19 test results and symptoms in households. Research Institute staff enrolled 99 households for this study. The new guidance simplifies recommendations for managing respiratory illnesses like COVID-19. Data from RVTN provide important insights into how respiratory viruses like COVID-19 spread and estimate how likely people were to transmit COVID-19 under both the previous and updated guidance.

### National Cancer Institute conducts site visit for Connect study

Representatives from the National Cancer Institute's (NCI) Division of Cancer Epidemiology and Genetics conducted a site visit for the Connect for Cancer Prevention Study in May. Connect is NCI's new long-term cancer prevention cohort study, and Marshfield Clinic Health System is one of just 10 participating health systems. The visitors toured Connect study facilities and observed the conduct of a study participant's biospecimen collection, sample processing and shipping preparation at Weston and Marshfield. They met with local study leads, Health System and Research Institute leaders and NCI visitors to discuss current operations and future project plans. The visit was capped by a Grand Rounds presentation by NCI's principal investigator for Connect, Nicolas Wentzensen, M.D., Ph.D., and Marshfield Connect PI Robert Greenlee, Ph.D. The NCI team, whose site visit was coordinated by Connect Study Manager Tammy Ellis, was particularly impressed with the level of engagement and support for the research teams. Over the next several years, we'll aim to recruit 7,600 patients between ages 40 and 65 with no history of cancer from across the Marshfield Clinic Health System service area. In September, representatives of the Marshfield team attended the Connect for Cancer Annual Meeting at the National Cancer Institute.


### New director named

Jeffrey VanWormer, Ph.D., has accepted the director position for the Center for Clinical Epidemiology and Population Health (CCEPH). A research scientist at the Research Institute since 2011, VanWormer served in the role as interim director for nearly a year. Dr. VanWormer joined the Research Institute after completing his doctoral degree at the University of Minnesota. He has a strong and sustained track record of scientific productivity, and his work has significantly contributed to the understanding of primary prevention of cardiometabolic disease, community risk factor surveillance, and agricultural injury and illness surveillance methods. "Under the prior direction of Dr. Ed Belongia and the tireless work of many great scientists and staff, CCEPH has become a national leader in population health and clinical outcomes research," Dr. VanWormer said. "I am humbled and honored to help carry on that track record of successful, consequential epidemiologic research well into the future."

Among his many other contributions to science, Dr. VanWormer has been leading the Summer Research Internship Program (SRIP) program, mentoring students from across the nation who came to the Research Institute to build their research skills.

### inSPIRE study launched

Respiratory illnesses (e.g., cold or flu) and gastrointestinal (GI) illnesses (e.g., stomach flu or diarrhea) are among the most common reasons for people to need medical care. Many different germs can causes these illnesses, including viruses, bacteria, and parasites. This research study set out to find how often different germs cause respiratory and GI illnesses and learn the symptoms and severity of these illnesses. The study's official name is "Surveillance Platform for Acute Illness: Respiratory and Enteric Pathogens (inSPIRE)." Over the next two years, inspire will invite people to take part in the study when they receive medical care for respiratory or GI illnesses from Marshfield Clinic Health System emergency departments, hospitals and clinics. Study participants will complete surveys and have nose and throat swabs collected (for a respiratory illness) or give a stool sample (for a GI illness). Samples will be tested to identify the germs that may be causing the illnesses. The study, which is led by Joshua Petrie, Ph.D., and Huong Nguyen, Ph.D., may help develop better ways to prevent and treat respiratory and GI illnesses.


## *National Farm Medicine Center*

### Dr. Weichelt receives Miller Endowment

Bryan Weichelt, Ph.D., was selected as recipient of the Steve J. Miller Distinguished Physician/Scientist Endowment. This endowment, established to support research in rural and agricultural health and safety, will aid Dr. Weichelt's ongoing efforts to improve the health and well-being of farmers, workers, children, and military veterans. Dr. Weichelt is also a fellow with the National Rural Health Association. The endowment was made possible through a generous gift from Marbeth Spreyer in memory of her father, Steve J. Miller, a Marshfield cheese wholesaler.

### Agricultural Rescue Training

The National Farm Medicine Center, in partnership with Pittsville Fire Company and other regional fire departments, hosted three days of first responder training, October 24-26. Training was held at Heiman Holsteins and Heeg Farms in Chili, WI. Day one featured a Rural Firefighters Delivering Agricultural Safety and Health course where 12 trainees from five states received hands-on experience and instruction in agricultural emergency preparedness, hazard assessment and mitigation, farm first aid, and agricultural community outreach. Day two featured an ag rescue train-the-trainer event, enabling 24 attendees to take the training back to their communities. Ag Rescue Training took place on Friday evening and all day Saturday. 78 trainees representing 38 different rural fire departments experienced large animal rescue, grain bin entrapment and fire response, tractor rollover, implement extrication, and both vertical and horizontal confined space rescue. This event helped the team eclipse their goal of training 500 rescuers in five years. Ag Rescue Training was a fund-the-need in the 2018 Auction of Champions,  thanks to the generosity of the donors.

### Rural Firefighters Delivering Agricultural Safety and Health (RF-DASH)

Farm Medicine partnered with Navajo farmers and New Mexico State University Extension to provide first responders and farmers with practical, lifesaving knowledge about reacting to emergencies on farms. The "Rural Firefighters Delivering Agricultural Safety and Health" (RF-DASH) project team, led by Casper Bendixsen, Ph.D., and Jakob Hanschu, traveled to northwestern New Mexico, near Shiprock, for a March 30 training. It was held at the request of a Diné Navajo farmer and community activist, Zachariah Ben. Zachariah and his wife Mary farm and operate Bidii Baby Foods and are working to reduce risk for farmers, law enforcement and fire/EMS in the region. The training was attended by tribal farmers and security personnel, San Juan County fire/EMS and farmers, and New Mexico State University Extension Services.



The training was hosted at NMSU Extension's Growing Forward Farm. Trainers and staff also included Chief Jerry Minor from Pittsville Fire Company, and two trainers from Utah.


### Skin cancer screening

Farm Medicine, with philanthropic support from the Auction of Champions, partnered with Marshfield Clinic Dermatology to provide skin cancer screening at the Wisconsin Potato and Vegetable Growers Association conference in Stevens Point. The best part of the day was hearing stories from grateful patients! One man said he participated in the screening at this very conference seven years ago, which led to diagnosis of a rare form of skin cancer that he has successfully managed ever since. The February event screened 76 people and continued a tradition of screening at farmer-focused events that dates to the 1990s. Since 2011, Farm Medicine has facilitated skin cancer screening at 12 events across Wisconsin, examining approximately 2,400 people, finding more than 200 presumed cancers and generating more than 700 referrals for additional examination of suspicious moles or patches of skin.

## *Integrated Research and Development Laboratory*

### Lab leads testing for investigation into nation's largest blastomycosis outbreak

The Research Institute's laboratory tested nearly 500 environmental samples during the multi-state, multi-agency investigation into the largest known blastomycosis outbreak in the United States. This 2022-23 outbreak sickened workers at an Escanaba, Mich., paper mill and resulted in one death. Results were published in late 2024 by the Centers for Disease Control and Prevention (CDC) in its Morbidity and Mortality Weekly Report. The outbreak started when a cluster of unusual pneumonia cases was reported to the local health department. Blastomycosis is a rare infectious disease caused by inhalation of *Blastomyces* fungal spores from the environment. *Blastomyces* is found in moist soil or decaying wood and leaves, often near rivers and lakes. A survey of 645 mill workers showed that overall, an estimated 20% of workers at the paper mill tested positive for blastomycosis. "Blastomycosis is difficult to diagnose because its symptoms often mimic other respiratory illnesses, like pneumonia, making it hard to distinguish clinically," said Jennifer Meece, Ph.D., executive director of Marshfield Clinic Research Institute. "Diagnosis requires seeing the fungus in tissue samples through a culture or microscope." Meece and her team were asked to join the investigation based on their experience researching public health outbreaks.

## *Office of Research Compliance*

### Maintaining high legal, ethical standards in research

The Office of Research Compliance hosted a live, online educational event in September for all Research Institute staff. "Foreign Influence, Research Security, and Federal Expectations: Important Considerations for Researchers and Institutions," was presented by Allen A. DiPalma, M.B.A., director, Office of Research Security and Trade Compliance, University of Pittsburgh. Hosting expert speakers is one way to ensure that scientists and staff have the information necessary to maintain the highest legal and ethical standards in research.

## *Office of Research Computing and Analytics*

### Supporting the grants management lifecycle

Significant enhancements to the Office of Research Computing and Analytics Administrative Systems resulted in streamlined workflows, cost savings, and improved data quality and data capture for downstream reporting. Partnership with the Office of Research and Sponsored Programs and Finance staff, as well as an established Steering Committee to set and approve priorities, enabled ORCA to develop a full suite of administrative applications to support the grants management lifecycle.

### 300-plus programs converted for new platform

The Research Analytics team continued to support the analytical needs, common data models, and enrollment activities for a multitude of new and existing high-enrolling, complex, and revenue generating studies. These studies may require near real-time enrollment at point of care, electronic consenting, lab collection/tracking/resulting, initiation and tracking of study incentives, and advanced analytical analysis. A transition to a new Enterprise Data Warehouse platform resulted in significant, time sensitive collaboration and shared learning with the Analytics Center of Excellence as over 300 programs were converted for compatibility with the new platform.

### Training for cybersecurity threats

The Research Institute participated in its first cybersecurity tabletop exercise, organized in partnership with Security and Emergency Management. This exercise brought to light the operational policies and decisions necessary to identify critical systems and alternative workflows in the event of a cyber incident. Following the exercise, the Research Institute's collective teams are better prepared to respond to such an incident.

## *Office of Research and Sponsored Programs*

### Celebrating 50 years of Summer Research Internship Program

The Summer Research Internship Program (SRIP) provides a real-world experience for undergraduate and graduate students considering a career involving research. Summer projects are tailored to each student's skill level and are related to ongoing research at the Marshfield Clinic Health System. The program enables students to put their education into practice as they work side-by-side with expert scientists and clinician-researchers in their fields. The program celebrated 50 years on Aug. 7 in Froehlke Auditorium as six interns presented their work. In some cases, the summer research projects serve as the capstone project or thesis if required for the student's degree program. Philanthropy provides most of the funding of SRIP. "We are incredibly grateful for the organizations and individuals who continue to support the Summer Research Internship Program," said Jeffrey VanWormer, Ph.D., program director. "Thanks to our amazing supporters, this program is able to continue to provide a unique learning experience for students, as well as to advance the research

being conducted at Marshfield Clinic Research Institute."

*From left: Cameron Lee, Shravani Gummaraju, Anna Isberg, Jason Xu, Susmitha Bommini and Bright Asante.*

### Joint Research Day

The Research Institute hosted Joint Research Day, June 28, with the Institute for Clinical and Translational Research (ICTR), a partnership with University of Wisconsin and six of its schools/colleges. The partnership was created to build capacity in translational science. It trains the next generation of biomedical and behavioral scientists, provides investigators and clinicians with critical resources including digital technology and data science, and creates novel solutions to disseminate innovations that improve healthcare practice. UW and the Research Institute have made tangible gains towards improving public health, and the presentations generated both formal and informal discussions among participants afterwards. "Today is where those two things meet — where research meets up with the healthcare system to try and improve the health of patients and the communities we both serve," said Jeffrey VanWormer, Ph.D., who also is director of MCRI's Center for Clinical Epidemiology & Population Health. "It's all about finding good projects with good people who can take them to the finish line. We will only see more of that when we do events like this."

### Writing workshops

The Research Institute partnered with the University of Wisconsin Institute for Clinical and Translational Research to offer a manuscript writing series titled, "Draft, Submit, Revise." In May, Marshfield hosted the third of three in-person writing workshops. Science writers David Puthoff, Ph.D., Office of Research and Sponsored Programs, teamed with Jen Merems, Ph.D., University of Wisconsin-Madison, to deliver scientific writing best practices. With topics ranging from passive voice to argumentation, attendees analyzed short writing samples and discussed the applicability of these topics to their own work. ICTR and ORSP plan to continue the series in 2025.

## *Journals*

### *Clinical Medicine & Research* achieves milestones

Marshfield Clinic's journal, *Clinical Medicine & Research,* received nearly 100 article submissions and recorded greater than 121,000 downloads of article PDFs from its website in 2024, the most since the journal debuted in 2003. Manuscripts are rigorously peer reviewed with only 35% accepted for publication. Of the articles published during 2024, an article evaluating the accuracy of artificial intelligence algorithms to diagnose aortic stenosis authored by several MCHS physician researchers was the third-most read in history! This article, written by Apurva Popat, M.D., Sweta Yadav, M.D., Param Sharma, M.D., and Shereif Rezkalla, M.D. was read more than 500 times in 3 months of publication. *Clinical Medicine & Research* continues a long tradition of journal publication by Marshfield Clinic dating back to early 1900s and remains one of only a few indexed medical research journals owned and published by private health systems. Articles published by *Clinical Medicine & Research* are cited in top journals, such as New England Journal of Medicine, Proceedings of the National Academy of Sciences, British Medical Journal, Canadian Medical Association Journal and Cancer Research, to name just a few. Editing of *Clinical Medicine & Research* is lead by Chief Editor Adedayo A. Onitilo, M.D., and Associate Editor Rohit Sharma, M.D. (both from the Marshfield Clinic Health System), Associate Editor Jamiu Busari, M.D., Ph.D. (from the Maastricht University in The Netherlands), and Senior Editor Sherry Salzman Scott (from the Marshfield Clinic Research Institute). To learn more about *Clinical Medicine & Research*, or read the latest issue, visit the journal's web site at: www.clinmedres.org

### Journal of Agromedicine

The *Journal of Agromedicine* has been edited since 2004 by scientists and staff of the National Farm Medicine Center. The journal, published quarterly by Taylor & Francis, is the world's leading source of peer-reviewed information about research, practice and policy related to the health and safety of people working in agriculture. Its audience includes rural health care providers, agricultural health and safety practitioners, academic researchers, government agencies, policy makers and others. The journal achieved 116,586 article downloads in 2024, its most ever. It has an Impact Factor of 2.1. The journal's core editorial team consists of Editor-in-Chief Matthew Keifer, M.D., M.P.H., Senior Associate Editor Barbara Lee, Ph.D., Managing Editor Scott Heiberger and Editorial Specialist Marie Fleisner. The team relies on an international panel of nearly 40 associate editors to guide papers through peer review and advise on journal strategy. The journal typically publishes one special issue per year on a key topic. The second issue of 2024 was dedicated to agricultural injury surveillance, highlighting advancements in surveillance science, with a wide-ranging topical and international scope. For more information on *Journal of Agromedicine,* visit www.tandfonline.com/journals/wagr20.

*Foundation*

**Dan and Linda Neve of Cruise for a Cause presented a $175,000 check** to Marshfield Clinic Research Institute. The funds resulted from their tireless efforts running the Cruise for a Cause annual fundraiser. During his check presentation in December, Dan gave all the credit and his gratitude to the MCRI team, stating that "delivering hope should be in each of your job descriptions, because I truly believe that is what you do. You give others hope with the jobs that you all do. You gave Linda and I hope 14 years ago. You gave hope to Linda's two sisters who lost their fights with breast cancer, and you give hope to her youngest sister who is undergoing chemo treatments as she begins her journey with breast cancer."


**148 golfers teed off at the 25th Golf for Research,** presented by Boldt and Solarus. Thanks to our amazing golfers, sponsors, and donors, this year's event raised over $73,000 to help provide essential resources to researchers as they continue to find better ways to screen, diagnose and treat cancer.

**CHS Foundation committed to a one-year, $200,000 grant to benefit the RF-DASH** (Rural Firefighters Delivering Agricultural Safety and Health) program through the National Farm Medicine Center.

**Numerous volunteer fundraisers were held in 2024 to support local research initiatives, including cancer research, heart research** and more. We are thankful to the generous community members who give their time and talents to help fundraise for our research programs.

**The 2024 Auction of Champions:** An Italian Auction raised $309,000 for the National Farm Medicine Center and its agricultural initiatives dedicated to keeping farmers happy, healthy and safe! Bravo to Miron Construction Co., our Champion Sponsor, for their ongoing commitment to Auction of Champions. Over 260 attendees joined for a special "night in Italy" and enjoyed locally sourced raffles, curated auction packages, delicious drinks and plates. Many thanks to our sponsors, auction item donors and market animal donors for your support of an Italian Auction and continued support of the National Farm Medicine Center.


# *Giving back*

Throughout the year, Marshfield Clinic Research Institute scientists and staff collect much-needed items for the communities in which they work.

"We especially enjoy partnering with our local community organizations to ensure that every child has, at minimum, the basics to stay warm and help them gain confidence," said Krystal Boese, assistant manager, Integrated Research and Development Lab. "These collection events are so very rewarding."

**2024 initiatives included:**

**Best First Day:** Conducted in conjunction with Soup or Socks, the initiative provided clothing to schoolaged children to help support their confidence as they approached the upcoming school year.

**Keep Kids Warm:** Marshfield Area Community Foundation. Collected warm outdoor gear for the winter.

**Best Snow Day:** Soup or Socks. Collected warm pajamas and outdoor gear for the winter.

**Cattails Place:** Collected food, hygiene and household items for adult patients and their caregivers receiving cancer care at MCHS Marshfield facility and staying at Cattails, due to not being from the area.

**Soup or Socks Food and Household Essentials Drive:** In honor of Employee Appreciation Day, we thought it'd be great to also show appreciation for our community! We teamed together to collect essentials for the SOS pantry.

**Supplies 4 Success and Fresh Start for Kids:** Partnered with Marshfield Area United Way to collect backpacks, school supplies and hygiene items for kids returning to school.

**Donation Numbers**

- 661 food items
- 349 essential clothing items
- 70 warm clothing items
- 147 household/hygiene items
- 80 school supplies
- $955 monetary donations

# By the numbers

**Total Open Trials/Protocols with IRB: 550**
- New Studies: 47
- Modifications: 1,536
- Annual Reviews: 217
- Reportable New Information/Unanticipated Problems: 0
- Ceded to External IRB: 41

**Total Participants Enrolled: 6,816**
- Clinical Trial Enrollments: 377
- Research Recruitments: 6,439

**Grant and Contract Dollars: 132 Awards and Agreements totaling $49,943,216.18**

**External Grants & Contracts: 75 Awards totaling $21,852,456.21**
- 10 Health System Grant and Contract Awards totaling $1,616,750.60
- 65 Research Institute Grant and Contract Awards totaling $20,235,705.61

**Industry Sponsored Clinical Trial Agreements: 68 Agreements totaling up to $24,043,411.98**
- 36 Agreements led by Health System Clinicians totaling up to $4,006,846.01
- 32 Agreements led by Research Institute Investigators totaling up to $20,036,565.97

**Internally Funded Awards: 64 totaling $4,047,347.99**
- 22 Health System awards totaling $218,620.79
- 42 Research Institute awards totaling $3,828,727.20

**Research Active Personnel: 694**

**Marshfield Clinic Research Institute: 251**
- 32 MD and PhD Scientists
- 207 Support Staff
- 6 Research Interns

**Marshfield Clinic Health System: 443**
- 143 MD, DDS, PharmD, and PhD Investigators
- 36 Resident Physicians
- 264 Support Staff

**Research Institute Publications: 120**
- Original Research: 101
- Review: 4
- Case Report: 10
- Published Abstracts: 3
- Book Chapter: 1
- Case Series: 1



# Our mission, vision and values

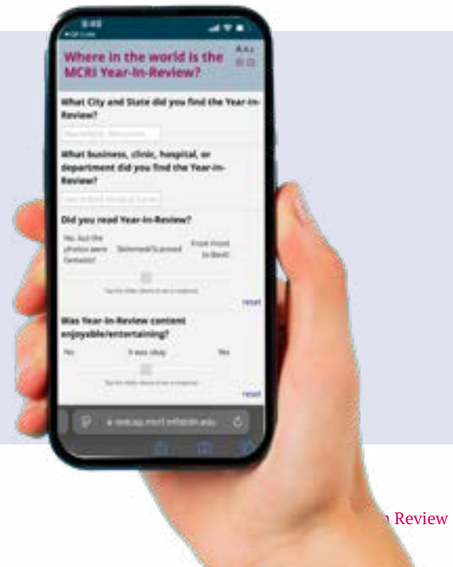
## Mission
We enrich lives through discovery, translation and application of scientific knowledge that improves health and well-being.

## Vision
We will innovate and define the future of health care for generations. Our research will be the source of innovation for the future of disease and injury prevention and integrated health care locally and globally.

## Values
- **Discovery:** Will be the foundation of the overall activities of the research group.
- **Translation:** A major effort will be made to apply our discoveries in the health care setting.
- **Dissemination:** Results of work done will be distributed broadly on a timely basis.
- **Teamwork:** Will be a hallmark of the research group.
- **Excellence:** Will be the standard for all research and program activities.
- **Collaboration:** Partnerships both internal and external will be sought and encouraged.

Help us better understand the communities our stories have reached, by scanning the QR code to complete a brief survey.

https://redcap.link/MCRI.YIR



Marshfield Clinic
Health System

19043-008