BRIghtLights
Shining a light on research and discovery

December, 2024
Vol. 7, Issue 4

versiti™
Blood Research Institute

Celebrate the season of giving

Kelley McCaskill
Vice President of Philanthropy

We enter this holiday season with tremendous gratitude for each of you and for our colleagues at Versiti Blood Research Institute. Your support of their work through your philanthropic gifts and your presence at Versiti events throughout the year advances blood research in significant ways.

In May, we hosted our second annual Women Rocking Research event, where attendees learned about the cutting-edge work being done by Dr. Nataly Cruz-Rodriguez and Dr. Ze Zheng.

In September, we broke ground for the Versiti Blood Research Institute building expansion. This state-of-the-art, 79,000 square-foot addition will nearly double VBRI's research capacity, add approximately 100 new jobs, and generate an estimated $19 million in additional tax revenue for the state of Wisconsin over 30 years. Expanding our building will promote the discovery of novel, more effective and less toxic therapies for a broad range of conditions that affect millions, positively impacting the health of residents across the state, nation and around the world.

On the heels of the groundbreaking, we hosted the Versiti Imagine Gala, which raises funds for research. We celebrated former Versiti Blood Research Institute Chief Scientific Officer Dr. Gil White, who received Versiti's highest honor, the Virginia Brooks Jefferson Award. We also celebrated Mary Ferguson with our Imagine Award, given to patients who are living and thriving with a blood disease. Congratulations to both!

October closed with our second annual Versiti Vampire Ball. More than 150 people dressed in their best Halloween costumes joined us at the Wisconsin Club for an evening of spooky fun and fundraising. We are grateful to all who chose to support Versiti in 2024!

Happy Holidays,

Kelley McCaskill

Vice President of Philanthropy

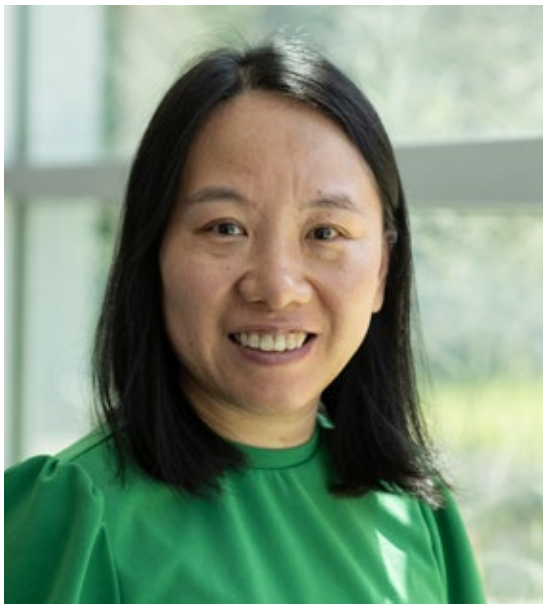
Using AI to better predict, diagnose and treat cancer

Bioinformatics data will help investigators understand what causes cancer to develop and how to treat it.

Twenty-five years ago, artificial intelligence (AI) was the stuff of science fiction. Today, AI is part of everyday life and scientists are harnessing it to gain deeper insights into human diseases and improve patient care.

AI refers to technologies that allow computers to perform tasks that typically require human intelligence. A key component of AI is machine learning, where computers learn to make predictions or decisions based on data. A more advanced form of this is deep learning, which mimics the structure of the human brain to solve even more complex problems.

Versiti Blood Research Institute (VBRI) Associate Investigator and Director of Bioinformatics Tongjun Gu, PhD, is an expert in modern AI. Her goal is to use AI to analyze different types of biological data and understand how they work together in diseases like cancer. "The main idea is to develop better algorithms to study how diseases develop and to improve early cancer detection," she said.



Tongjun Gu, PhD

Dr. Gu specializes in applying AI to bioinformatics, a field that combines biology, statistics and computer science to interpret complex biological data. Before joining VBRI, she developed a deep learning-based AI algorithm to integrate multiple types of biological data—known as omics data—which helped researchers better understand how solid tumors form. "For solid tumors, the goal was early detection, making treatments more effective," she said. "We focused on identifying biomarkers to distinguish between early- and late-stage cancer and used that information to guide treatment."

At VBRI, Dr. Gu aims to apply similar AI approaches to study acute myeloid leukemia (AML), the most common type of leukemia in adults. "I have collected large sets of data to identify different subtypes of AML to predict who is at a high risk for developing the disease," she said. "My goal is to combine patient information—like demographics, environmental factors and omics data—to predict their risk levels."

Dr. Gu believes AI will allow scientists to analyze larger data sets, produce more accurate results and create a more comprehensive understanding of cancer. "With AI, we can integrate different types of data into a model to build a bigger picture of how cancer works," she said. "This technology gives us the power to conduct research more effectively and provide more precise analysis."

To achieve this, Dr. Gu is working on an advanced AI model that integrates various profiles of omics data, starting with epigenetic factors. "The long-term goal is to understand the interactions in omics data and get a full picture of cancer development," she said. "We're looking for hidden pathways and epigenetic factors that may be driving the disease, which could lead to new treatments."

2024 Vampire Ball: A Scary-Good Time!

Thanks to everyone who made the 2024 Versiti Vampire Ball a spook-tacular success! This event wouldn't be possible without the support of the VBRI Junior Advisory Board, a group of socially conscious professionals from various organizations across the Milwaukee area, who give their time and talents to supporting our lifesaving research. See you in 2025—if you dare!

Thank you, sponsors!

Aurora Health Care; Cream City Mortgage; Crivello, Nichols & Hall; Direct Supply; Foley & Lardner; Gruber Law Offices; Zizzo Group

2024 Imagine Gala

Thank you to everyone who attended the 2024 Imagine Gala! Your support means the world to us, and you helped us raise $315,861 to help propel our lifesaving research. Thanks also to our sponsors, who helped to make this event possible. We're grateful for all that you do.

Virginia Brooks Jefferson Award: Gilbert C. White II, MD

The Virginia Brooks Jefferson Award is given in recognition of an individual, group, corporation or foundation whose outstanding volunteer leadership supports Versiti's mission to advance patient care by providing lifesaving solutions grounded in unparalleled medical expertise. This year's winner is Gilbert C. White II, MD, who joined VBRI in 2004, serving as senior investigator, Richard H. and Sara E. Aster Chair for Medical Research, and executive vice president and chief scientific officer. During his tenure, VBRI expanded its number of investigators, postdoctoral fellows and graduate students; increased its research space; and more than tripled income from intellectual property. Dr. White was also committed to supporting the next generation of scientists, mentoring more than 60 students, fellows and investigators before retiring in 2019.

Imagine Award: Mary Ferguson

The Imagine Award is given to a recipient who has persevered and displayed hope and gratitude through a difficult and challenging blood disease.

This year's recipient is Mary Ferguson, who was diagnosed with antiphospholipid antibody syndrome (APS), a clotting disorder that is often associated with lupus. Mary has been under the care of Versiti Comprehensive Center for Bleeding Disorders since 2019, when she found herself in the midst of a catastrophic APS flare. Thankfully, Versiti's Lisa Baumann Kreuziger, MD, MS, was the hematologist on call and recommended a lifesaving course of treatment for Mary, who is now doing well.

Thank you, sponsors!

- Presenting Sponsor: CSL Behring
- Hero Sponsors: Axion Risk Management Strategies, Cathy & Mike White
- Champion Sponsors: Baird, CIBC, Sanofi
- Ambassador Sponsors: Anthem, Brewers Community Foundation, Foley & Lardner, Fresenius Kabi, Froedtert and Medical College of Wisconsin, HGA, Marquette Associates, Mary and Jim Lill, Mortenson, Network Health, Northwestern Mutual, WellSky, Werfen
- Advocate Sponsors: Anne Hamilton & Fred Geilfuss, Liberty Mutual Insurance, Grant Thornton

Local high schoolers tour VBRI

On Monday, Oct. 28, we were excited to welcome 22 students from Riverside High School and Washington High School to tour VBRI and learn more about our lifesaving research. Throughout the day, students met with laboratory staff, postdoctoral fellows and representatives from donor services to learn more about VBRI and what it takes to pursue a career in scientific research.

versiti™
Blood Research Institute

8733 W Watertown Plank Road,
PO Box 26576, Milwaukee, WI 53226

BRIghtLights

BRIghtLights is a quarterly newsletter published by the Versiti Blood Research Institute Foundation.
Interested in learning more? Please contact the Foundation office: 414-937-6799.