



A Message from Vice President of Philanthropy Kelley McCaskill

This time of year, we often pause to give thanks for our blessings and celebrate with family and friends. For many people, the holidays will look different this year; however, I remain optimistic about the future as we work toward a COVID-19 vaccine and a return to normal life.

Today, I am thankful for you. For your financial support of Versiti Blood Research Institute, your blood donations and, for some of you, your lifesaving convalescent plasma donations. Each of you has helped improve the lives of people in our communities, and that is a gift. Your generosity provides resources for researchers at Versiti, whose sole focus is to discover better treatments and cures for diseases like cancer, multiple sclerosis and more.

This year, several investigators turned their attention to the search for a cure for COVID-19, and I was reminded that



their ability to be flexible is what creates forward progress in science. Your gifts enable that flexibility.

As we head into the holiday season, know that everyone at Versiti Blood Research Institute is grateful for you. Here's to a happy and healthy 2021!

Kelley McCaskill
Vice President of Philanthropy
Versiti Blood Research Institute Foundation

Innovations in Research

Exploring the causes of heparin-induced thrombocytopenia

Oftentimes, to prevent clots or treat them after they develop, patients are treated with the blood thinner heparin, an effective and relatively low-cost medication that controls coagulation. But an estimated 30-50% of patients who take heparin can develop antibodies to the drug, with some experiencing adverse reactions that could lead to irreversible damage or loss of life.

Some of these patients develop heparin-induced thrombocytopenia (HIT), a reaction that occurs when an individual develops an antibody response that causes their platelet count to drop and, paradoxically, blood to

coagulate. Patients with HIT are typically taken off heparin immediately and are prescribed other anticoagulants. But these alternative medications are more costly and can sometimes cause patients to experience even worse side effects. Versiti Blood Research Institute Investigator **Renren Wen, PhD**, is digging deeper into HIT to understand what causes it and why, with a goal of finding better treatment options.



Community Beacon of Hope: Darlene Wolf

Spotlighting organizations and individuals in our community who go above and beyond in their support of Versiti Blood Research Institute.

The late Darlene Wolf was a dedicated blood donor. She began donating when her youngest son was diagnosed with cancer at 15 years old; she saw her son's need for blood and wanted to give back—to replenish the blood supply.

Darlene and her husband Jerry retired in 1999 and moved to Hiles, WI. However, their two children still lived in Wauwatosa and Milwaukee, so when Darlene was due to donate blood, she made a trip of it, donating at Versiti Blood Center of Wisconsin's West Bend donor center before



heading south to visit her kids.

Over the course of her life, Darlene donated 126 pints of whole blood. Her last donation was in February 2020 before she passed away in September. Friends came together after her passing and donated funds to Versiti Blood Research Institute in her honor. We are grateful for the lives she saved through her generosity and are happy to honor her life and recognize her commitment as a Community Beacon of Hope.

Understanding the role of sugars in the immune system

Glycobiology, the research field focused on understanding glycans (also known as carbohydrates or sugars), is an integral but misunderstood area. "The often overlooked glycans are one of the five building blocks of life," said Versiti Blood Research Institute Senior Investigator **Karin Hoffmeister, MD**. "They are central to life—to human disease and health."



Glycans play a critical role in the human body's immune system by communicating with immune cells to keep us healthy. But when a virus or bacteria enters the body, it invades the body's cells and disguises itself among our glycans, becoming indistinguishable to the immune system. This means that the immune system no longer recognizes these cells as foreign and doesn't fight against them.

These foreign cells are smart; they figure out ways to hijack glycans and continuously manipulate immune responses for their own advantage, enabling them to

survive and spread throughout the body, causing disease. Their ease of adaptation and their complex signatures have made studying glycans an overwhelming task for many researchers—but one that is no less important.

Dr. Hoffmeister, director of the Translational GlycOmics Center K12 Program, a national career development program sponsored by the National Heart, Lung and Blood

Institute (NHLBI), is a leading expert in glycan research and is working hard to define their structures and identify if some glycans are specific to various disease states. With this knowledge, she and her peers will be better positioned to study how harmful viruses, cancer cells and other diseases continuously adapt and trick our bodies into thinking they belong. "The ultimate goal is to find better diagnostics and treatments," she said.

You Can Make a Difference

To make a gift or learn more, contact: **Versiti Blood Research Institute Foundation Office at 414-937-6799**

Planned Giving: Versiti Legacy Society

The Versiti Legacy Society celebrates our most dedicated and generous supporters who invest in supporting our research and improving patient health and outcomes. By making a planned gift to the Versiti Legacy Society, you will help Versiti Blood Research Institute continue to invest in innovation and discovery through research.

Versiti Legacy Society accepts gifts from a will or trust, beneficiary designations, life insurance, appreciated securities and real estate, personal property, and even the gift of your home. To learn more, visit versiti.org/legacysociety.



Precision medicine: Versiti researchers raising the bar for individualized patient care

Commonly referred to, but often underdefined, the idea of precision medicine is to match each patient with the best treatment for his or her illness. However, some alternative treatments are not widely available. Investigators at Versiti Blood Research Institute are making strides in blood health research to understand what causes various diseases to develop and, more importantly, how patients can be better diagnosed and treated based on their individual symptoms and health needs.

Associate Investigator **Sid Rao, MD, PhD**, studies cancer cells and how they mutate differently in individual patients. He says that his research is “driven by the concept that if we can find a specific mutation that causes cancer, we can give each patient a specific drug.”

Investigator **Lynn Malec, MD, MSc**, focuses on patients with bleeding disorders like hemophilia. She is interested

in learning how next-gen sequencing could be used to treat patients with bleeding disorders.

Associate Investigator **Nan Zhu, PhD**, also researches the genetics behind leukemia. “Our research aims to identify therapeutic targets in acute myeloid leukemias with a specific genetic underpinning,” she said.

Investigator **Weiguo Cui, MD, PhD**, studies T cells, which are components of the immune system that have the potential to be used to fight diseases. “We intend to harness the power of one’s own immune system to fight cancer,” he said.

Versiti Blood Research Institute’s critical mass of researchers creates a unique environment of collaboration, which helps accelerate the pace of discovery.



Sid Rao, MD, PhD



Lynn Malec, MD, MSc



Nan Zhu, PhD



Weiguo Cui, MD, PhD



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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.