

## Message from Versiti President and CEO Chris Miskel

2024 promises to be an exciting year for the Versiti Blood Research Institute (VBRI). Our world-renowned scientists continue to make great strides in their work, impacting patient care not only locally but around the world. I was personally energized by a Stanford University study released in October that found that seven current Versiti colleagues, as well as five additional emeritus Versiti colleagues, are in the top 2% of most-cited scientists in the world! It validates what we have always known: Our institute has exceptional people that drive our international reputation for excellence in advancing the field of blood research.

We have elevated our focus on storytelling about the caliber of our work. The breadth and depth of scientific knowledge in our unique Versiti “House of Hematology” deserves to be better understood. Public awareness of the fact that this international expertise in all things blood is, and always has been, powered by humble Milwaukee beginnings might – just might – inspire our next generation

of community champions and advocates for our research mission.

Currently, we are focused on recruiting new scientists to VBRI, including a leader for our innovative immunology group. We will also continue fundraising for the VBRI building expansion, which will create additional laboratory space, areas for collaboration, and state-of-the-art equipment that will help attract and retain talented scientists while propelling their groundbreaking research.

Thank you for supporting our work and igniting the spark that inspires us to be a beacon of hope for patients around the world.



Chris Miskel, President and CEO

## 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.

### Community Beacon of Hope: Cheri McGrath, blood donation advocate

Versiti was sad to learn of the passing of Cheri McGrath, a regular blood donor at the Downtown Milwaukee donor center. Cheri became blind at several months of age due to receiving too much oxygen as a preemie. Despite this handicap, Cheri led a full life and was actively involved in various community organizations, including Versiti. Cheri, thank you for being a beacon of hope to your community. You will be missed.



# Innovations in Research

## Versiti Blood Research Institute to develop hematology biorepository

Versiti Blood Research Institute (VBRI) is on the cutting edge of research discoveries that improve patient diagnosis and treatment. As part of its commitment to innovation, VBRI’s Sandeep Vanamala, MVSc, PCLP-IBM, is developing a hematology biorepository that will serve as a campus-wide resource and powerful tool for advancing collaboration and interdisciplinary research at the Milwaukee Regional Medical Center campus.

A biorepository, or biobank, serves as a centralized facility that systematically collects, stores and manages biospecimens and associated data. With its potential to unlock a wealth of valuable information, a biorepository represents a crucial investment in the future of healthcare and holds the promise of transforming our understanding and treatment of disease.

Biorepositories provide researchers with access to diverse, well-characterized biological samples that enable researchers to identify specific genetic variations associated with diseases, predict treatment responses, and design targeted interventions that are tailored to the specific needs of each patient. By harnessing the power of this personalized approach, healthcare providers can improve patient outcomes and minimize adverse events, ushering in a new era of more effective, efficient medical care.



Sandeep Vanamala, MVSc, PCLP-IBM

## Adelaide Yost

Adelaide has von Willebrand disease, an inherited bleeding disorder. At age 5, she experienced multiple spontaneous bleeds and received blood transfusions that helped save her life. Three years later, she began attending Camp Klotty Pine, a summer camp for children with bleeding and clotting disorders. It was there that Adelaide learned to self-infuse the factor products that her blood lacks.

“She’s a pro; she just jumps right in. She’s in complete control over the infusions,” says her mother, Katie.

As Adelaide has gotten older, she has experienced excessive bleeding that cannot be managed by prophylactic treatments alone. The team at Versiti Comprehensive Center for Bleeding Disorders (CCBD) has worked with Adelaide and her family to explore new treatment approaches.

“Working with the team and doctors, getting appointments, trying different things, following up, checking in—it’s been reassuring to know that if something isn’t working, CCBD supports us and helps us understand the next steps,” Katie says.



# Innovations in Research

## Expanding the therapeutic potential of platelets

Platelets have long been used to treat patients with severe bleeding, cancer, sepsis and more. Because of their multifunctional roles in a variety of diseases, researchers are interested in learning more about how they function and how to engineer them to create new cellular therapies for patients. But despite their potential, currently no effective methods exist for genetically modifying platelets to express specific therapeutic proteins.

Nucleic acids lie at the center of the issue. Nucleic acids are sort of the libraries of cells, housing the information that helps them become more intelligent. When cells read this information, they create RNA, which acts as a messenger and instructs cells how they should function. However, researchers have had a difficult time introducing genetically modified nucleic acids to platelets in order to treat diseases.

New research from Versiti Blood Research Institute Senior Investigator Christian Kastrup, PhD, explores the use of lipid nanoparticles (LNPs) to deliver messenger RNA (mRNA) to platelets in order to introduce the synthesis



Christian Kastrup, PhD  
Senior Investigator

of new proteins to fight disease. In a recent publication in the journal Science Advances, Dr. Kastrup and his team described an approach that uses platelet-optimized LNPs containing mRNA to enable protein expression.

To accomplish this, they tested a library of mRNA-LNP and synthesized proteins that did not require, nor correlate with, platelet activation. They found that transfected platelets, or platelets that were introduced to the new proteins, were well-tolerated in in-vivo models of bleeding, retaining their normal functionality and accumulating to stop bleeding.

This knowledge and success with genetically engineered platelets will help researchers like Dr. Kastrup expand their therapeutic potential.

## Versiti Blood Research Institute investigators recognized by Stanford University

Recently, several current and emeritus investigators were recognized among the top 2% of most-cited scientists worldwide. Citations, which appear in academic papers, are references to earlier research. The frequency with which a researcher’s work is cited in other peer-reviewed publications is a crucial metric for assessing their research impact and standing in the academic community. Congratulations to the team!

**Brian Curtis, PhD, D(ABMLI), MT(ASCP), SBB**  
Senior Director, Diagnostic Hematology, Senior Investigator

**Michael Deininger, MD, PhD**  
Mike and Cathy White Endowed Chair, EVP, Chief Scientific Officer

**Bonnie Dittel, PhD**  
Dr. Gilbert C. White II Endowed Faculty Chair, Senior Investigator

**Karin Hoffmeister, MD**  
Hauske Family Endowed Chair in Glycobiology, Deputy Director, Senior Investigator

**Alan Mast, MD, PhD**  
Walter Schroeder Endowed Chair for Blood Research, Senior Investigator, Program Leader

**Peter Newman, PhD**  
Jacquelyn Fredrick Endowed Chair for Foundational Research, Senior Investigator

**Roy Silverstein, MD**  
Senior Investigator