Advances in Blood Products and Biotherapies
Emerging Infectious Diseases Special Issue of TRANSFUSION

AABB is pleased to announce The Emerging Infectious Diseases special issue of TRANSFUSION is now available to AABB members. This issue was prepared by the AABB Transfusion Transmitted Diseases Committee and comprises 72 fact sheets with the latest critical information on infectious diseases for the field — the first comprehensive update since 2009.

This special edition includes 5 sections covering:
- prions
- viruses
- bacteria
- other bacteria
- protozoa/nematodes

aabb.org/wiley
6
Reconsidering Cryopreservation for HPCs
The rapid growth of cryopreservation during the pandemic offered patients a reliable option, changing the delivery of stem cell transplantation.

10
The Future of Platelets
Hospitals and blood collection facilities roll out new technologies and methods to address the shortages of platelets.

12
Building a More Inclusive Blood Donor Community
AABB and the National Heart, Lung and Blood Institute host a conversation about the latest in blood donor eligibility.

16
Blood is Blood
The blood community celebrates and reflects on a monumental year and historic change for the field.
t’s been one year since the blood community celebrated the U.S. Food and Drug Administration’s (FDA) final guidance recommending individual donor assessments (IDA) to determine blood donor eligibility. As many have noted, this helped to reduce unnecessary deferrals and welcomed many new and returning blood donors. The FDA’s guidance—based on myriad data and examples from other countries—marked a significant milestone in the history of blood donation and represented a new way forward for our community.

This achievement could not have happened without the blood community’s commitment and dedication. AABB members worked diligently for months to implement the recommendations in FDA’s final guidance. The Association recognizes your efforts and is here to continue to empower and support our community as we promote a more inclusive blood donation screening process.

Moving the Needle

This issue of AABB News highlights the monumental year in the blood community. The articles reflect the historic change in donor eligibility and discuss how blood collection facilities successfully implemented IDA protocols and prepared their donor-facing staff for important conversations.

In addition, this issue focuses on advances in blood products and biotherapies. The first feature addresses the rise of cryopreservation for hematopoietic stem cells during the COVID-19 pandemic and offers insight about how the process can benefit patients in the post-pandemic era.

Our second feature examines the future of platelets and new technologies for platelet preservation, with a focus on the question: Is increasing shelf life enough? Another article highlights blood collection during Ramadan, showcasing the holy month’s impact on blood collection efforts and how blood banks in Muslim countries adjust to optimally serve donors and patients.

Looking Ahead

It’s an exciting time in the field of transfusion medicine and biotherapies. We hope the articles in this issue remind you of the positive impact you are making in our communities and reinforce the blood community’s commitment to an equitable, diverse and inclusive environment for all.

Aaron A. R. Tobian, MD, PhD
AABB President
JOIN US FOR
2024 World Blood Donor Day
VIRTUAL 5K / 1-MILE RACE
May 14 – June 14

Walk, jog, run or roll any 5K or 1-mile route anytime between May 14 and June 14!

Be part of the World Blood Donor Day celebration as we come together to recognize all those who make life-saving gifts of blood and raise awareness of the need for safe blood and blood products.

All proceeds benefit AABB Foundation-funded research in blood and biotherapies to help advance treatments and care for patients and donors in communities worldwide.

For sponsorships and inquiries: foundation@aabb.org

SCAN TO REGISTER

THANK YOU TO OUR SPONSORS
Moritz Stolla, MD, first became fascinated with platelets during a post-doctoral research fellowship at the Cardeza Foundation for Hematologic Research at Thomas Jefferson University, Philadelphia.

“I like how versatile platelets are,” said Stolla, director of platelet transfusion research at the University of Washington. “Initially, everyone thinks of them as cell fragments, which is almost an insult. Platelets have fully functioning cell signaling machinery.”

Platelets are very delicate and must be handled with care, Stolla explained, but that is also what makes them so unique. “The focus many have with platelets is on clotting, but that has been shown to be too narrow of a definition,” Stolla said. “More and more, it is understood that platelets are not only involved in clotting but also in immune responses, cancer metastasis, and help with making new blood vessels (angiogenesis). These findings are expanding the whole field beyond just thrombosis and hemostasis.”

Stolla’s post-doctoral fellowship opened his eyes to the potential of platelets and sparked his interest in pathology, which combined his love for research and laboratory work with clinical applications.

Cold Storage

In 2018, Stolla received an AABB Foundation Early-Career Scientific Research Grant for his project, “Cold-stored Platelets for the Reversal of Dual Antiplatelet Therapy.” The proposed project would compare current standard of care use of room temperature-stored platelets with cold-stored platelets.

“Cold storage of platelets was abandoned in the 1960s and 1970s, when it was thought that platelets would almost exclusively go to patients with cancer, in whom you want platelets to circulate as long as possible,” Stolla explained. “We know now that about 50% of platelets go to bleeding patients where it is more important that platelet function is preserved.”

Cold storage could help avoid issues related to room temperature storage such as shorter storage duration and bacterial growth risk. The grant led to a crossover trial conducted in healthy participants on antiplatelet therapy who were randomly assigned to receive room-temperature or cold-stored platelets. Stolla and colleagues took platelets out of the participants by apheresis and rendered the endogenous platelet population dysfunctional with aspirin or clopidogrel. They then transfused the stored platelets back into the volunteers and compared platelet function before and after transfusion.

The project showed that cold-stored platelets were largely equivalent to room temperature-stored platelets in reversing the effect of antiplatelet therapy. “We also found there was a slight disadvantage for the cold platelets with certain agonists,” Stolla said. “We followed up with some mouse work and found that one collagen receptor is not as well preserved in cold platelets as room-temperature platelets.”

New Questions

As always with science, Stolla said, one discovery leads to multiple new questions, and the AABB Foundation grant ultimately led to several follow-up projects, recently published in Blood.

Stolla is working not only on the basic science behind cold-stored platelets but translational research as well. He is currently running a pilot trial with cold-stored platelets in plasma that will compare room-temperature platelets against cold-stored platelets in patients who are undergoing cardiac surgery and cardiopulmonary bypass. The endpoint is blood product use and chest tube outputs.
“We can distinguish the transfused platelet population from the endogenous platelet population using HLA markers and can therefore distinguish the function of the transfused platelets,” Stolla said.

Since receiving his Foundation grant, Stolla also received the 2022 AABB Foundation Award for Innovative Research, which recognizes a scientist whose original research resulted in an important contribution to the body of scientific knowledge in transfusion medicine or biotherapies. Since the completion of his grant in 2019, Stolla has co-authored 20 scientific papers, of which he is the first or senior author on 14.

“The Foundation grant was a great pathway for me to get funding and establish myself as an independent investigator in the platelet transfusion biology field,” Stolla said.

Stolla has also worked to give back to the AABB Foundation and to AABB. He is an ad hoc reviewer for the AABB journal *Transfusion* and has served on the AABB Foundation Proposal Review Committee since 2020.

“When I review grant proposals, I am looking for novel research ideas that are also feasible,” Stolla said. “I want to help promote the next generation of scientists interested in transfusion medicine-oriented questions.”

SUPPORT THE AABB FOUNDATION

The AABB Foundation early-career scientific research and education grants are a milestone for many investigators in transfusion medicine and biotherapies, often validating their research scope as their career trajectory is just taking shape. This funding inspires innovation in the field for years to come.

**Make your donation today** to help support early-career scholars and the AABB Foundation’s mission of fueling innovative research! Future medical breakthroughs improving patient and donor care depend on it. Visit aabb.org/foundation to donate.

VISIT THE AABB STORE

Find all the products and services to expand your knowledge and advance your career in one place.

The redesigned, easily navigable AABB Store includes an improved search feature that allows you to find content by product type and topic. Visit today to discover the latest highly-acclaimed publications, ecasts, and courses that AABB offers.

[Visit AABB.org/Store](http://aabb.org/store)