



19TH INTERNATIONAL SYMPOSIUM ON
BLOOD SUBSTITUTES
2024

TENTATIVE SCHEDULE
(subject to change v26 9/2/24)
* Session title or speaker is not confirmed

Thursday November 14, 2024			
3:00 pm - 7:00 pm Gaylord Hotel Check In, On-site ISBS Registration Desk – pick up conference badge & materials - Riverview Ballroom Foyer			
6:00 pm - 8:00 pm Welcome Reception - RiverView Ballroom Foyer			
Friday November 15, 2024			
8:00 am - 10:30 am Exhibitor Setup			
Welcome & Introductions			
8:30 am - 10:00 am	Jonathan Jahr, MD, PhD Professor Emeritus of Anesthesiology and Perioperative Medicine, David Geffen School of Medicine at UCLA		Allan Doctor, MD Professor of Pediatrics and Bioengineering, Director, Center of Blood Oxygen Transport and Hemostasis, University of Maryland; CSO, KaloCyte
	Oxygen Carriers Andre Palmer, PhD Professor of Chemical & Biomolecular Engineering, Ohio Eminent Scholar, The Ohio State University	Track Introductions Plasma Shibani Pati, MD, PhD Professor of Lab Medicine and Surgery, UCSF	Platelets Anirban Sen Gupta, PhD Professor of Engineering, Biomedical Engineering, Case Western Reserve University, CTO, Haima Therapeutics
10:00 am - 10:30 am Opening Session			
Blood Substitute has Led to Successes in Artificial Cell Development; Is It Now Time for It's Own Success as Blood Substitutes? Session Chair -- ISBS Honorary President, Thomas MS Chang, MD, PhD Emeritus Professor of Physiology, Medicine and Bioengineering McGill University Director, Artificial Cells and Organs Research Centre			
10:30 am - 10:50 am	Professor Changmin Yang Former Director of the Institute of Blood Transfusion, Peking Union Medical College, Chinese Academy of Medical Sciences Scientific Advisor of the International Society for Artificial Cell Blood Substitutes and Biotechnology Honorary President of Blood Substitute Branch of Chinese Biomedical Engineering Society (immediate past co-President ISBS 2019)		
10:50 am - 11:10 am	Hiromi Sakai, PhD, Professor of Chemistry, Nara Medical University, Japan (immediate past co-President ISBS 2019)		
11:10 am - 11:25 am Break & Exhibits			
11:25 am - 12:25 pm Presidential Lecture			
BioSynthetic Blood Components: Use Case and Approaches to Clinical Trial Design Philip Spinella, MD Professor of Surgery and Critical Care Medicine, Co-Director, Trauma and Transfusion Medicine Research Center, University of Pittsburgh			
12:25 pm - 1:50 pm Lunch & Exhibits			
2:00 pm - 3:30 pm	Oxygen Carriers Basic Science	Plasma Basic Science	Platelets Basic Science
	Hb and HBOC Biochemistry Chris Cooper, PhD Professor of Biochemistry, University of Essex	Plasma Derived ATIII Jessica Cardenas, PhD Associate Professor of Surgery, University of Colorado	Thrombopoiesis - Megakaryocyte and Platelet Biology Joseph Italiano, PhD Associate Professor Harvard Medical School
	Encapsulated HBOCs (Benefits and Risks) Hiromi Sakai, PhD Professor of Chemistry Nara Medical University	Regenerating the Brain and Organs in Trauma with Plasma and Plasma Derived Products Shibani Pati, MD, PhD Professor of Lab Medicine and Surgery University of California, San Francisco	Platelets in Hemostasis Wolfgang Bergmeier, PhD Professor of Biochemistry, University of North Carolina
	PolyHb with Novel Recombinant Human Catalase-SOD-Carbonic Anhydrase Jing Ning, MD, PhD Former Senior Biologist/Clinical Evaluator, Health Products and Drug Branch, Health Canada	The Therapeutic Potential of Plasma Extracellular Vesicles Philip Norris, MD Director of Laboratory Science Vitalant Research Institute/UCSF	Platelets-RBC-Fibrin Interactions in Hemostatic Clots John Weisel, PhD Professor of Cell and Developmental Biology University of Pennsylvania
	Freeze Dried RBC's Brett Janis, PhD Co-Founder and Chief Executive Officer, DestiCorp Inc	What Goes Around Comes Around: Blood and Modern Resuscitative Medicine Joseph Rappold, MD (CAPT Ret.) US Navy Professor of Surgery Maine Medical Center, Tufts University	Platelets in Immune and Inflammatory Responses Julie Rayes, PhD Associate Professor of Cardiovascular Sciences University of Birmingham
	Moderator: Andre Palmer		Moderator: Shibani Pati
3:30 pm - 3:45 pm Break & Exhibits			
3:45 pm - 5:15 pm	Oxygen Carriers Technical Formulation Approaches	Plasma Technical Formulation Approaches	Platelets Technical Formulation Approaches
	Metal-Organic Framework-Based Oxygen Carriers Leticia Hosta-Rigau, PhD Associate Professor, Health, Cell and Drug Technologies, Technical University of Denmark	Challenges in Producing a Lyophilized Plasma Product Adam Gerber, MD, PhD Scientific and Medical Director, Critical Care, Octapharma	Current SoA in Platelet Logistics at Red Cross Pampee Young, MD, PhD Chief Medical Officer, Biomedical Services American Red Cross, Nashville
	HBOC Design Using Protein Engineering Leif Bulow, PhD Professor, Pure and Applied Biochemistry Lund University, Sweden	Regulatory Challenges for Dried Blood Components Toby Silverman, MD, MPH Former Deputy Associate Director for Medical Affairs FDA, Office of Blood Research and Review	Apheresis Techniques and Platelet Product Variability. Susan Shea, PhD Assistant Professor of Surgery and Bioengineering University of Pittsburgh
	On-Demand RBCs Janice Moser, PhD Lead Biologist, Sciperio, Inc.	Pathogen Reduction for Novel Blood Product Development Alison Nair, MD Associate Professor, Pediatric Critical Care Medicine University of California, San Francisco	Platelets from Stem Cells Cedric Ghevaert, MD PhD FRCP FRCPath Senior Lecturer in Transfusion Medicine University of Cambridge
	TBD*	Technical Formulations of Plasma Anthony Pusateri, PhD Chief Scientist Leidos and Naval Medical Research Unit	Freeze-dried Platelets and Cryo Platelets Formulation Mike Fitzpatrick, PhD Chief Scientific Officer, Cellphire Therapeutics, Inc
	Moderator: Andre Palmer		Moderator: Anirban Sen Gupta
5:15 pm - 6:00 pm Reception - Poster Presentation & Exhibits			
6:00 pm - 7:30 pm Dinner on Own			
Evening Seminar: Updates on Bio-Synthetic Blood Components			
7:30 pm - 9:30 pm	Recombinant Hbs with Enhanced Oxidative Stability Brandon Reeder, PhD Senior Lecturer, University of Essex		
	Site Specific Cross-Linked Hbs Ronald Kluger, PhD Professor of Organic and Biological Chemistry, University of Toronto		
	Fractionated Polymerized Hbs Andre Palmer, PhD Professor of Chemical & Biomolecular Engineering, Ohio Eminent Scholar, The Ohio State University		
	Plasma Derived Biotherapies for Critical Illness Shibani Pati, MD, PhD Professor of Laboratory Medicine and Surgery, UCSF		
	Freeze Dried Plasma - State of the Science Anthony Pusateri, PhD Chief Scientist, Leidos and Naval Medical Research Unit		
	Moderator: Allan Doctor		



Saturday November 16, 2024			
Plenary Lectures			
8:00 am - 10:00 am	Multifunctional Bio-Synthetic Resuscitation Fluids		
	Allan Doctor, MD Professor of Pediatrics and Bioengineering, Director, Center of Blood Oxygen Transport and Hemostasis, University of Maryland, CSO, KaloCyte		
	Overview of HBOC Toxic Effects and Some Molecular Control Solutions		
	Abdu I Alayash, PhD, DSc Chief, Laboratory of Biochemistry and Vascular Biology, OBRR, FDA/CBER		
10:00 am - 10:15 am	Personalized Assessment of Hemostatic Deficits to Guide Precision Transfusion		
	Mitchell Cohen, MD Professor and Associate Vice Chair of Basic and Translational Research, University of Colorado		
	Moderator: Jonathan Jahr		
Break & Exhibits			
10:15 am - 12:15 pm	Oral Abstracts Artificial Oxygen Carriers/ HBOC		Oral Abstracts Plasma, Hemostasis, Transfusion Medicine
	• (Selected) Oral Abstracts		• (Selected) Oral Abstracts
	Moderators: Janice Moser and Stephen Rogers		Moderators: Cedric Ghevaert and Alison Nair
Lunch & Exhibits			
1:45 pm - 3:15 pm	Oxygen Carriers Translational Science	Plasma Translational Science	Platelets Translational Science
	Microvascular Response to HBOCs	Plasma Transfusion in TBI	SynthoPlate-Platelet Inspired Design and Evaluation
	Pedro Cabrales, PhD Professor of Bioengineering University of California, San Diego	Martin A. Schreiber, MD FACS FCCM COL, MC, USAF Adjunct Professor of Surgery Uniformed Services University of the Health Sciences	Christa Pawlowski, PhD Co-Founder, Chief Operating Officer Haima Therapeutics
	Safety Biomarkers for Exploratory Toxicology Studies	Regenerative Properties of Plasma in Burns	Platelet Mimicry for Biomechanical Function
	Felice D'Agnillo, PhD Principal Investigator, Office of Blood Research & Review (OBRR), Center for Biological Evaluation and Research (CBER)	Jeff Schupp, MD Professor of Surgery, Plastic Surgery, Biochemistry, Cellular & Molecular Biology, Georgetown University	Ashley Brown, PhD Associate Professor of Biomedical Engineering, NC State/UNC Chapel Hill, Co-Founder Selsym Biotech
	Animal Models for Preclinical HBOC Down Selection	Plasma Derived Pathogen Reduced Cryoprecipitate in Trauma	mRNA Engineered Platelets
Paul Buehler, PharmD, PhD Professor of Pathology & Pediatrics, Principle Investigator, Center for Blood Oxygen Transport and Hemostasis University of Maryland	Rosemary Kozar, MD, PhD Professor of Surgery, Co-Director, Surgery, Trauma and Anesthesiology Research Center, University of Maryland	Mitch Dyer, MD Principal Investigator Versiti / Medical College of Wisconsin	
speaker invited waiting for response			
One Health: Testing of Plasma Products and Blood Products in Animal Models to Facilitate Approval			
Heather Pidcock, MD, PhD Chief Medical Research Officer, OVP Joint Faculty, Dept. Clinical Sciences, CVMS Colorado State University			
Regenerating Injured Brains with Platelet-Derived Biologics			
Sibani Pati, MD, PhD Professor of Laboratory Medicine and Surgery, UCSF			
Moderator: Paul Buehler			
Moderator: Jeff Schupp			
Moderator: Julie Rayes			
3:15 pm - 3:30 pm Break & Exhibits			
3:30 pm - 5:00 pm	Oxygen Carriers Potency	Plasma Potency	Platelets Potency
	In Vitro Models of HBOC Potency	Regulatory Aspects of Developing Novel Plasma and Platelets Products: Thoughts on Potency Measures	Instrumentation and Assays for Platelet Measurement
	Stephen Rogers, PhD Assistant Professor of Pediatrics, Center for Blood Oxygen Transport and Hemostasis, University of Maryland	Toby Silverman, MD, MPH Former Deputy Associate Director for Medical Affairs FDA Office of Blood Research and Review	John Hwa, MD, PhD Professor of Cardiovascular Medicine Co-Director Yale Cooperative Center of Excellence in Hematology, CT
	HBOC Impact Upon Vasoactive Effectors, Rheology and Blood Flow	Measuring Dynamic Changes in Fibrinolysis During Blood Product Resuscitation	Trauma-Induced Platelet Dysfunction
	Dany Kim-Shapiro, PhD Professor and Chairman, Department of Physics, Wake Forest University	Hunter Moore, MD Transplant Surgeon AdventHealth Transplantant Institution at Porter Hospital, Denver	Paul Villiamy, MD Senior Clinical Lecturer Trauma Sciences, Blizard Institute, Queen Mary University of London
	Blinded RCT of HBOC's Biopure	Plasma versus Factor Concentrates	Platelets in TBI
Jerrold Levy, MD Professor of Anesthesiology and Critical Care Professor of Surgery (Cardiothoracic) Duke University School of Medicine Vice Chair, Scientific Subcommittees of the ISTH	Beth Shaz, MD Professor and Deputy Director of Marcus Center for Cellular Cures Duke University	Michael Goodman, MD Professor of Surgery, University of Cincinnati	
TBD*			
speaker invited waiting for response			
TBD*			
Shibani to notify shortly			
Cold Platelets - Potency and Clinical Correlation			
Phil Spinella, MD Professor of Surgery and Critical Care Medicine, Co-Director, Trauma and Transfusion Medicine Research Center, University of Pittsburgh			
Moderator: Stephen Rogers			
Moderator: Rosemary Kozar			
Moderator: Susan Shea			
5:00 pm - 6:15 pm Reception - Poster Presentation & Exhibits			
6:15 pm - 7:30 pm Dinner on Own			
Evening Seminar: Novel Engineering for Bio / Synthetic Blood Components			
7:30 pm - 9:30 pm	Perfluorocarbon Oxygen Carriers - State of the Science		
	Katja Bettina Ferenz, PhD Professor of Physiology, University Duisburg-Essen		
	Non-hemoglobin Engineered Protein Oxygen Carriers		
	Jonathan Winger, PhD CEO and co-founder, Omnix Inc		
	Biochemically Encoded Wetware for Context Responsive Oxygen Carriers		
	Allan Doctor, MD Professor of Pediatrics and Bioengineering, Director, Center of Blood Oxygen Transport and Hemostasis, University of Maryland, CSO, KaloCyte		
Polymerized Albumin to Stabilize Colloid Oncotic Pressure and Functional Capillary Density During Resuscitation			
Andre Palmer, PhD Professor of Chemical & Biomolecular Engineering, Ohio Eminent Scholar, The Ohio State University			
Functionalizing Platelet Mimetics for Targeted Activities			
Anirban Sen Gupta, PhD Professor of Engineering, Biomedical Engineering, Case Western Reserve University, CTO, Haima Therapeutics			
Moderator: Leif Bulow			



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Sunday November 17, 2024			
7:45 am - 8:45 am	Sunrise Seminar: Octapharma Industry Spotlight		
9:00 am - 10:00 am	Plenary Lecture		
	Microcirculatory Physiology of Bio-Synthetic Blood Components Pedro Cabrales, PhD Professor of Bioengineering, University of California, San Diego		
	Microcirculation Forum Panelists: Bjorn Song, Felice D'Agnillo, Brandon Reeder, Ashley Brown, Michael Goodman		
	Moderator: Allan Doctor		
10:00 am - 10:15 am	Break & Exhibits		
10:15 am - 12:15 pm	Oral Abstracts Artificial Oxygen Carriers/HBOC	Oral Abstracts Plasma, Hemostasis, Transfusion Medicine	
	(Selected) Oral Abstracts Moderators: Andre Palmer and Dany Kim Shapiro	(Selected) Oral Abstracts Moderators: Anirban Sen Gupta	
12:15 pm - 1:30 pm	Lunch & Exhibits		
1:30 pm - 3:45 pm	Bio-Synthetic Blood Components in Active Human Trials		
	Framing: Lessons Learned and Future Directions Jonathan Jahr, MD, PhD Professor Emeritus of Anesthesiology and Perioperative Medicine, David Geffen School of Medicine at UCLA		
	HBV Hiromi Sakai, PhD Professor of Chemistry, Nara Medical University, Japan		
	Dry Plasma Jose Cancelas, MD, PhD Member of the Faculty of Medicine, Harvard Medical School; Director Cell Manufacturing, Dana Farber Cancer Institute		
	Sanguinate Clinical Trials Ron Jubin, PhD Vice President R&D, Prolong Pharmaceuticals		
	Plasma Derived Products (Lyophilized: PCCs, Cryo, Fibrinogen) Joseph Rappold, MD Professor of Surgery, Maine Medical Center / Tufts University		
	Thrombosomes Mike Fitzpatrick, PhD Chief Scientific Officer, Cellphire Therapeutics, Inc		
	Panel Discussion - Moderators: Toby Silverman and Phil Spinella		
3:45 pm - 4:00 pm	Break & Exhibits		
4:00 pm - 6:30 pm	Oxygen Carriers Cardiac Effects & Solutions There Are Different Types of HBOCs, Some Have No Adverse Cardiac Effects Thomas MS Chang, MD, PhD Emeritus Professor of Physiology, Medicine and Bioengineering Director, Artificial Cells and Organs Research Centre, McGill University	Oxygen Carriers Ex Vivo Organ Support Hemarina For Organ Preservation Franck Zal, PhD CEO, Hemarina	Hemostatic Therapeutics Clinical Efficacy Whole Blood vs Components Martin Schreiber, MD Professor of Surgery & Chief of Trauma, Critical Care & Acute Care Surgery, Oregon Health & Science University (OHSU)
	Hemoglobin Based Oxygen Carriers, Oxidative Stress & Myocardial Infarction Tim Estep, PhD President, Chart Biotech Consulting LLC; Former VP Hemoglobin Therapeutics, Baxter	High Molecular Weight PolyHb For Lung Perfusion Bryan Whitson, MD, PhD Professor of Surgery, Ohio State University	Plasma and Plasma Derived Products in Liver Transplantation Seth Karp, MD Professor and Chair, Department of Surgery, Vanderbilt University
	TBD*	PFCs For Kidney and Heart Perfusion Kajsa Bettina Ferenz, PhD Professor of Physiology, University Duisburg-Essen	Clinical Trial Design for Blood Products in Trauma (TROOP & TAP) Jan Jansen, MBBS, PhD Professor of Surgery, Director, Center for Injury Science, University of Alabama
	TBD*	TBD*	Prehospital Plasma and Whole Blood for Trauma Jason Sperry, MD, MPH Professor of Surgery and Critical Care, University of Pittsburgh
	Panel Discussion Felice d'Agnillo, Abdu Ayalash, Paul Buehler, Toby Silverman, Jonathan Jahr, Andre Palmer, Allan Doctor	Panel Discussion Franck Zal, Bryan Whitson, Katha Ferenz	Panel Discussion Seth Karp, Jan Jensen, Jason Sperry, Phil Spinella
	Moderators: Thomas Chang, Tim Estep	Moderator: Franck Zal	Moderator: Martin Schreiber
	6:30 pm - 7:00 pm	Reception	
7:00 pm - 9:30 pm	Banquet Dinner & Award Ceremony (Introduction of ISBS 2026 Presidents)		
Monday November 18, 2024			
8:30 am - 10:30 am	Federal Sponsorship of Biosynthetic Blood Product Development NIH/NHLBI: Andrei Kindzelski, MD, PhD DoD MTEC: Lauren Palestrini, PhD BARDA DARPA: JP Chretien, MD, PhD		
	Government Stakeholder Forum NIH, NSF, DOD/DARPA, BARDA, USAMMDA, MTEC		
	Moderator: Ken Bertram		
10:30 am - 11:00 am	Break		
11:00 am - 12:00 am	Regulatory Update (FDA/CBER) Victor Baum, MD Medical Officer, Division of Blood Components and Devices, Office of Blood Research and Review (OBRR), CBER, FDA		
	Regulatory Forum Panelists: Toby Silverman, Abdu Ayalash, Franck Zal, Paul Buehler, Adam Gerber, Felice d'Agnillo, Victor Baum		
12:00 pm - 1:00 pm	Moderator: Jonathan Jahr		
1:00 pm - 1:30 pm	Closing Remarks: Allan Doctor and Jonathan Jahr		