



19TH INTERNATIONAL SYMPOSIUM ON
BLOOD SUBSTITUTES
2024

TENTATIVE SCHEDULE
 (subject to change v18 7/25/24)
 * Session title or speaker is not confirmed

Thursday November 14, 2024			
Hotel Check In, On-site ISBS Registration Desk – pick up conference badge & materials			
Welcome Reception			
Friday November 15, 2024			
Exhibitor Setup			
Welcome & Introductions			
8:00 am - 10:30 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	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
Track Introductions			
Opening Session			
Session Chair, Professor Chengmin 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) ISBS Honorary President, Thomas MS Chang, MD, PhD Emeritus Professor of Physiology, Medicine and Bioengineering McGill University Director, Artificial Cells and Organs Research Centre Immediate Past President ISBS 2019, Hiromi Sakai, PhD, Professor of Chemistry, Nara Medical University, Japan			
Break & Exhibits			
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			
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	Platelets in Hemostasis: Physiology and Biochemistry Wolfgang Bergmeier, PhD Professor of Biochemistry, University of North Carolina
	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 Beyond Hemostasis: Inflammation and Immune Functions Julie Rayes, PhD Associate Professor of Cardiovascular Sciences University of Birmingham
	PolyHb with Novel Recombinant Human Catalase-SOD-Carbonic Anhydrase* Gang Chen, PhD* Associate Professor, Zunyi Medical University Manager, Proheme Biotechnology Inc, China	TBD*	TBD*
	Moderator: Andre Palmer	Moderator: Shibani Pati	Moderator: Anirban Sen Gupta
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 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	Platelets from Stem Cells: State-of-the-Art Cedric Ghevaert, MD PhD FRCP FRCPATH Senior Lecturer in Transfusion Medicine University of Cambridge
	HBOC Design Using Protein Engineering Leif Bulow 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	Cold Platelets: License to Chill* Andre Cap, MD, PhD* Former Director, US Army Institute for Surgical Research
	Stem Cell-Derived 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	Freeze-dried Platelets Mike Fitzpatrick, PhD Chief Scientific Officer, Cellphire Therapeutics, Inc
	Moderator: Andre Palmer	Moderator: Shibani Pati	Moderator: Cedric Ghevaert
Reception - Poster Presentation & Exhibits			
Dinner on Own			
7:30 pm - 9:30 pm	Evening Seminar: Updates on Bio-Synthetic Blood Components		
	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 Lab Medicine and Surgery, UCSF		
	Freeze Dried Plasma - State of the Science Anthony Pusateri, PhD Chief Scientist, Leidos and Naval Medical Research Unit Moderator: Ronald Kluger		



Saturday November 16, 2024			
8:00 am - 10:00 am	<p align="center">Plenary Lectures</p> <p align="center">Multifunctional Bio-Synthetic Resuscitation Fluids</p> <p align="center">Allan Doctor, MD Professor of Pediatrics and Bioengineering, Director, Center of Blood Oxygen Transport and Hemostasis, University of Maryland; CSO, KaloCyte</p> <p align="center">Overview of HBOC Toxic Effects and Some Molecular Control Solutions</p> <p align="center">Abdu I Alayash, PhD, DSc Chief, Laboratory of Biochemistry and Vascular Biology, OBRR, FDA/CBER</p> <p align="center">Personalized Assessment of Hemostatic Deficits to Guide Precision Transfusion</p> <p align="center">Mitchell Cohen, MD Professor and Associate Vice Chair of Basic and Translational Research, University of Colorado</p> <p align="center">Moderator: Jonathan Jahr</p>		
	<p align="center">Break & Exhibits</p>		
10:15 am - 12:15 pm	<p align="center">Oral Abstracts Oxygen Carriers</p> <p align="center">• (Selected) Oral Abstracts</p> <p align="center">Moderators: Janice Moser and Stephen Rogers</p>		<p align="center">Oral Abstracts Hemostatic Agents</p> <p align="center">• (Selected) Oral Abstracts</p> <p align="center">Moderators: Cedric Ghevaert and Alison Nair</p>
	<p align="center">12:15 pm - 1:45 pm Lunch & Exhibits</p>		
1:45 pm - 3:15 pm	<p align="center">Oxygen Carriers Translational Science</p> <p align="center">Microvascular Response to HBOCs</p> <p align="center">Pedro Cabrales, PhD, Professor of Bioengineering, UCSD Professor of Bioengineering, University of California, San Diego</p>	<p align="center">Plasma Translational Science</p> <p align="center">Plasma Transfusion in TBI: Pre-Clinical to Clinical Science</p> <p align="center">Hasan Alam, MD Professor and Chair, Department of Surgery, Northwestern University</p>	<p align="center">Platelets Translational Science</p> <p align="center">Functional Assessment of Cold Platelets</p> <p align="center">Susan Shea, PhD Assistant Professor of Surgery and Bioengineering, University of Pittsburgh</p>
	<p align="center">Safety Biomarkers for Exploratory Toxicology Studies</p> <p align="center">Felice D'Agnillo, PhD Principal Investigator, Office of Blood Research & Review (OBRR), Center for Biologics Evaluation and Research (CBER)</p>	<p align="center">Regenerative Properties of Plasma in Burns</p> <p align="center">Jeff Schupp, MD Professor of Surgery, Plastic Surgery, Biochemistry, Cellular & Molecular Biology, Georgetown University</p>	<p align="center">Artificial Platelets: History and Current Status</p> <p align="center">Anirban Sen Gupta, PhD Professor of Biomedical Engineering, Case Western Reserve University; CTO Haima Therapeutics</p>
	<p align="center">Animal Models for Preclinical HBOC Down Selection</p> <p align="center">Paul Buehler, PharmD, PhD Professor of Pathology & Pediatrics, Principle Investigator, Center for Blood Oxygen Transport and Hemostasis, University of Maryland</p>	<p align="center">Plasma Derived Pathogen Reduced Cryoprecipitate in Trauma</p> <p align="center">Rosemary Kozar, MD, PhD Professor of Surgery, Co-Director, Surgery, Trauma and Anesthesiology Research Center, University of Maryland</p>	<p align="center">Mechanobiology of Platelets: Mimicry, Preclinical Evaluation and Clinical Implications</p> <p align="center">Ashley Brown, PhD Associate Professor of Biomedical Engineering, NC State/UNC Chapel Hill; CoFounder Selsym Biotech</p>
	Moderator: Paul Buehler	Moderator: Jeff Schupp	Moderator: Susan Shea
	<p align="center">3:15 pm - 3:30 pm Break & Exhibits</p>		
3:30 pm - 5:00 pm	<p align="center">Oxygen Carriers Potency</p> <p align="center">In Vitro Models of HBOC Potency</p> <p align="center">Stephen Rogers, PhD Assistant Professor of Pediatrics, Center for Blood Oxygen Transport and Hemostasis, University of Maryland</p>	<p align="center">Plasma Potency</p> <p align="center">Regulatory Aspects of Developing Novel Plasma and Platelets Products: Thoughts on Potency Measures</p> <p align="center">Toby Silverman, MD, MPH Former Deputy Associate Director for Medical Affairs, FDA Office of Blood Research and Review</p>	<p align="center">Platelets Potency</p> <p align="center">TBD*</p> <p align="center">Nicole Juffermans, MD, PhD* Professor of Immunology and Intensive Care Medicine, Erasmus University</p>
	<p align="center">HBOC Impact Upon Vasoactive Effectors, Rheology and Blood Flow</p> <p align="center">Dany Kim-Shapiro, PhD Professor and Chairman, Department of Physics, Wake Forest University</p>	<p align="center">Challenges of Defining and Interpreting Hemostatic Potency Measures*</p> <p align="center">Chris Sillman, MD, PhD* Professor of Hematology and Surgery, University of Colorado</p>	<p align="center">Trauma-Induced Platelet Dysfunction</p> <p align="center">Paul Vulliamy, MD Senior Clinical Lecturer Trauma Sciences, Bizard Institute, Queen Mary University of London</p>
	<p align="center">TBD*</p> <p align="center">Professor Chao Chen* Vice principle and Professor Northwest University, Director, National Engineering Research Center for Miniaturized Detection Systems, College of Life Science, Northwest University, Xi'an, Shaanxi, China</p>	<p align="center">TBD*</p> <p align="center">Joseph Rappold, MD* Professor of Surgery, Maine Medical Center, Tufts University</p>	<p align="center">Platelets in TBI</p> <p align="center">Michael Goodman, MD Professor of Surgery, University of Cincinnati</p>
	Moderator: Stephen Rogers	Moderator: Rosemary Kozar	Moderator: Nicole Juffermans
<p align="center">5:00 pm - 6:15 pm Reception - Poster Presentation & Exhibits</p>			
<p align="center">6:15 pm - 7:30 pm Dinner on Own</p>			
7:30 pm - 9:30 pm	<p align="center">Evening Seminar: Novel Engineering for Bio / Synthetic Blood Components</p> <p align="center">Perfluorocarbon Oxygen Carriers - State of the Science</p> <p align="center">Katja Bettina Ferenz, PhD Professor of Physiology, University Duisburg-Essen</p> <p align="center">Non-hemoglobin Engineered Protein Oxygen Carriers</p> <p align="center">Jonathan Winger, PhD CEO and co-founder at Omniox Inc</p> <p align="center">Biochemically Encoded Wetware for Context Responsive Oxygen Carriers</p> <p align="center">Allan Doctor, MD Professor of Pediatrics and Bioengineering, Director, Center of Blood Oxygen Transport and Hemostasis, University of Maryland; CSO, KaloCyte</p> <p align="center">Polymerized Albumin to Stabilize Colloid Oncotic Pressure and Functional Capillary Density During Resuscitation</p> <p align="center">Andre Palmer, PhD Professor of Chemical & Biomolecular Engineering, Ohio Eminent Scholar, The Ohio State University</p> <p align="center">Functionalizing Platelet Mimetics for Targeted Activities</p> <p align="center">Anirban Sen Gupta, PhD Professor of Engineering, Biomedical Engineering, Case Western Reserve University, CTO, Haima Therapeutics</p> <p align="center">Moderator: Leif Bulow</p>		
	<p align="center">7:30 pm - 9:30 pm</p>		



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Sunday November 17, 2024			
7:30 am - 8:15 am	Sunrise Seminar: Industry Spotlight		
8:30 am - 9:30 am	Plenary Lecture Microcirculatory Physiology of Bio-Synthetic Blood Components Pedro Cabrales, PhD Professor of Bioengineering, UCSD 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 am	Oral Abstracts Oxygen Carriers		Oral Abstracts Hemostatic Agents
	• (Selected) Oral Abstracts		• (Selected) Oral Abstracts
	Moderators: Andre Palmer and Dany Kim Shapiro		Moderators : Anirban Sen Gupta and Hasan Alam
12:15 pm - 1:30 pm	Lunch & Exhibits		
1:30 pm - 3:30 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 Professor of Medicine, Harvard University; Director Cell Manufacturing, Dana Farber Cancer Institute 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 Andre Cap*		
3:30 pm - 3:45 pm	Break & Exhibits		
3:45 pm - 6:15 pm	Oxygen Carriers Cardiac Effects	Oxygen Carriers Ex Vivo Organ Support	Hemostatic Therapeutics Clinical Efficacy
	TBD* Thomas MS Chang, MD, PhD Emeritus Professor of Physiology, Medicine and Bioengineering Director, Artificial Cells and Organs Research Centre, McGill University	Hemarina For Organ Preservation Franck Zal, PhD CEO, Hemanaria	Whole Blood vs Components Martin Schreiber, MD Professor of Surgery & Chief of Trauma, Critical Care & Acute Care Surgery, Oregon Health & Science University (OHSU)
	TBD* 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* Peter Keipert, PhD Senior Director, Integrated Solutions Strategy former VP Clinical Development, Sangart	PFCs For Kidney and Heart Perfusion Katja 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* Felice d'Agnillo, PhD Principal Investigator, Office of Blood Research & Review (OBRR), Center for Biologics Evaluation and Research (CBER)	TBD*	Prehospital Plasma and Whole Blood for Trauma Jason Sperry, MD, MPH Professor of Surgery and Critical Care, University of Pittsburgh
	Panel Discussion	Panel Discussion	Panel Discussion
	Felice d'Agnillo, Abdu Ayalash, Paul Buehler, Toby Silverman, Jonathan Jahr, Andre Palmer, Allan Doctor	Franck Zal, Bryan Whitson, Katha Ferenz	Seth Karp, Jan Jensen, Jason Sperry, Phil Spinella
Moderators: Thomas Chang, Tim Estep	Moderator: Franck Zal	Moderator: Martin Schreiber	
6:15 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	DoD	BARDA
	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		
12:00 pm - 1:00 pm	Regulatory Forum Panelists: Andre Cap, Toby Silverman, Abdu Ayalash, Franck Zal, Paul Buehler, Adam Gerber, Felice d'Agnillo, Victor Baum Moderator: Jonathan Jahr		
1:00 pm - 1:30 pm	Closing Remarks: Allan Doctor and Jonathan Jahr		