



19<sup>TH</sup> INTERNATIONAL SYMPOSIUM ON  
**BLOOD SUBSTITUTES**  
**2024**

TENTATIVE SCHEDULE  
(subject to change v19 7/29/24)  
\* Session title or speaker is not confirmed

<b>Thursday November 14, 2024</b>			
<b>Hotel Check In, On-site ISBS Registration Desk – pick up conference badge &amp; materials</b>			
<b>Welcome Reception</b>			
<b>Friday November 15, 2024</b>			
<b>8:00 am - 10:30 am</b>			
<b>Exhibitor Setup</b>			
<b>Welcome &amp; Introductions</b>			
<b>8:30 am - 10:00 am</b>	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
	<b>Oxygen Carriers</b> Andre Palmer, PhD Professor of Chemical & Biomolecular Engineering, Ohio Eminent Scholar, The Ohio State University	<b>Plasma</b> Shibani Pati, MD, PhD Professor of Lab Medicine and Surgery, UCSF	<b>Platelets</b> Anirban Sen Gupta, PhD Professor of Engineering, Biomedical Engineering, Case Western Reserve University, CTO, Haima Therapeutics
<b>Opening Session</b>			
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			
<b>11:00 am - 11:15 am</b>			
<b>Break &amp; Exhibits</b>			
<b>Presidential Lecture</b>			
<b>BioSynthetic Blood Components: Use Case and Approaches to Clinical Trial Design</b>			
Philip Spinella, MD Professor of Surgery and Critical Care Medicine, Co-Director, Trauma and Transfusion Medicine Research Center, University of Pittsburgh			
<b>12:15 pm - 1:45 pm</b>			
<b>Lunch &amp; Exhibits</b>			
<b>2:00 pm - 3:30 pm</b>	<b>Oxygen Carriers   Basic Science</b>	<b>Plasma   Basic Science</b>	<b>Platelets   Basic Science</b>
	<b>Hb and HBOC Biochemistry</b> Chris Cooper, PhD Professor of Biochemistry, University of Essex	<b>Plasma Derived ATIII</b> Jessica Cardenas, PhD Associate Professor of Surgery, University of Colorado	<b>Platelets in Hemostasis: Physiology and Biochemistry</b> Wolfgang Bergmeier, PhD Professor of Biochemistry, University of North Carolina
	<b>Encapsulated HBOCs (Benefits and Risks)</b> Hiromi Sakai, PhD Professor of Chemistry Nara Medical University	<b>Regenerating the Brain and Organs in Trauma with Plasma and Plasma Derived Products</b> Shibani Pati, MD, PhD Professor of Lab Medicine and Surgery University of California, San Francisco	<b>Platelets Beyond Hemostasis: Inflammation and Immune Functions</b> Julie Rayes, PhD Associate Professor of Cardiovascular Sciences University of Birmingham
	<b>PolyHb with Novel Recombinant Human Catalase-SOD-Carbonic Anhydrase*</b> Gang Chen, PhD* Associate Professor, Zunyi Medical University Manager, Proheme Biotechnology Inc, China	<b>TBD*</b> speaker invited waiting for response	<b>TBD*</b> speaker invited waiting for response
	<b>Moderator: Andre Palmer</b>	<b>Moderator: Shibani Pati</b>	<b>Moderator: Anirban Sen Gupta</b>
<b>3:30 pm - 3:45 pm</b>			
<b>Break &amp; Exhibits</b>			
<b>3:45 pm - 5:15 pm</b>	<b>Oxygen Carriers   Technical Formulation Approaches</b>	<b>Plasma   Technical Formulation Approaches</b>	<b>Platelets   Technical Formulation Approaches</b>
	<b>Metal-Organic Framework-Based Oxygen Carriers</b> Leticia Hosta-Rigau Associate Professor, Health, Cell and Drug Technologies, Technical University of Denmark	<b>Challenges in Producing a Lyophilized Plasma Product</b> Adam Gerber, MD, PhD Scientific and Medical Director, Critical Care, Octapharma	<b>Platelets from Stem Cells: State-of-the-Art</b> Cedric Ghevaert, MD PhD FRCP FRCPATH Senior Lecturer in Transfusion Medicine University of Cambridge
	<b>HBOC Design Using Protein Engineering</b> Leif Bulow Professor, Pure and Applied Biochemistry Lund University, Sweden	<b>Regulatory Challenges for Dried Blood Components</b> Toby Silverman, MD, MPH Former Deputy Associate Director for Medical Affairs FDA Office of Blood Research and Review	<b>Cold Platelets: License to Chill*</b> Andre Cap, MD, PhD* Former Director, US Army Institute for Surgical Research
	<b>Stem Cell-Derived RBCs*</b> Janice Moser, PhD Lead Biologist, Sciperio, Inc.	<b>Pathogen Reduction for Novel Blood Product Development</b> Alison Nair, MD Associate Professor, Pediatric Critical Care Medicine University of California, San Francisco	<b>Freeze-dried Platelets</b> Mike Fitzpatrick, PhD Chief Scientific Officer, Cellphire Therapeutics, Inc
	<b>Moderator: Andre Palmer</b>	<b>Moderator: Shibani Pati</b>	<b>Moderator: Cedric Ghevaert</b>
<b>5:15 am - 6:00 pm</b>			
<b>Reception - Poster Presentation &amp; Exhibits</b>			
<b>6:00 pm - 7:30 pm</b>			
<b>Dinner on Own</b>			
<b>7:30 pm - 9:30 pm</b>	<b>Evening Seminar: Updates on Bio-Synthetic Blood Components</b>		
	<b>Recombinant Hbs with Enhanced Oxidative Stability</b> Brandon Reeder, PhD Senior Lecturer, University of Essex		
	<b>Site Specific Cross-Linked Hbs</b> Ronald Kluger, PhD Professor of Organic and Biological Chemistry, University of Toronto		
	<b>Fractionated Polymerized Hbs</b> Andre Palmer, PhD Professor of Chemical & Biomolecular Engineering, Ohio Eminent Scholar, The Ohio State University		
	<b>Plasma Derived Biotherapies for Critical Illness</b> Shibani Pati, MD, PhD Professor of Lab Medicine and Surgery, UCSF		
	<b>Freeze Dried Plasma - State of the Science</b> Anthony Pusateri, PhD Chief Scientist, Leidos and Naval Medical Research Unit		
	<b>Moderator: Ronald Kluger</b>		



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



Sunday November 17, 2024			
<b>Sunrise Seminar: Industry Spotlight</b>			
7:30 am - 8:15 am	<b>Plenary Lecture</b>		
8:30 am - 9:30 am	<b>Microcirculatory Physiology of Bio-Synthetic Blood Components</b> Pedro Cabrales, PhD Professor of Bioengineering, UCSD <b>Microcirculation Forum</b> Panelists: Bjorn Song, Felice D'Agnillo, Brandon Reeder, Ashley Brown, Michael Goodman <b>Moderator: Allan Doctor</b>		
<b>Break &amp; Exhibits</b>			
10:00 am - 10:15 am	Oral Abstracts   Artificial Oxygen Carriers/HBOC		Oral Abstracts   Plasma, Hemostasis, Transfusion Medicine
10:15 am - 12:15 am	• (Selected) Oral Abstracts		• (Selected) Oral Abstracts
<b>Moderators: Andre Palmer and Dany Kim Shapiro</b>		<b>Moderators : Anirban Sen Gupta and Hasan Alam</b>	
<b>Lunch &amp; Exhibits</b>			
12:15 pm - 1:30 pm	<b>Bio-Synthetic Blood Components in Active Human Trials</b> <b>Framing: Lessons Learned and Future Directions</b> Jonathan Jahr, MD, PhD Professor Emeritus of Anesthesiology and Perioperative Medicine, David Geffen School of Medicine at UCLA <b>HbV</b> Hiromi Sakai, PhD Professor of Chemistry, Nara Medical University, Japan <b>Dry Plasma</b> Jose Cancelas, MD, PhD Professor of Medicine, Harvard University; Director Cell Manufacturing, Dana Farber Cancer Institute <b>Plasma Derived Products (Lyophilized: PCCs, Cryo, Fibrinogen)</b> Joseph Rappold, MD Professor of Surgery, Maine Medical Center / Tufts University <b>Thrombosomes</b> Mike Fitzpatrick, PhD Chief Scientific Officer, Cellphire Therapeutics, Inc <b>Panel Discussion - Moderators: Toby Silverman and Andre Cap*</b>		
<b>Break &amp; Exhibits</b>			
3:30 pm - 3:45 pm	<b>Oxygen Carriers   Cardiac Effects &amp; Solutions</b>	<b>Oxygen Carriers   Ex Vivo Organ Support</b>	<b>Hemostatic Therapeutics   Clinical Efficacy</b>
3:45 pm - 6:15 pm	<b>TBD*</b> Thomas MS Chang, MD, PhD Emeritus Professor of Physiology, Medicine and Bioengineering Director, Artificial Cells and Organs Research Centre, McGill University	<b>Hemarina For Organ Preservation</b> Franck Zal, PhD CEO, Hemarina	<b>Whole Blood vs Components</b> Martin Schreiber, MD Professor of Surgery & Chief of Trauma, Critical Care & Acute Care Surgery, Oregon Health & Science University (OHSU)
	<b>TBD*</b> Tim Estep, PhD President, Chart Biotech Consulting LLC, Former VP Hemoglobin Therapeutics, Baxter	<b>High Molecular Weight PolyHb For Lung Perfusion</b> Bryan Whitson, MD, PhD Professor of Surgery, Ohio State University	<b>Plasma and Plasma Derived Products in Liver Transplantation</b> Seth Karp, MD Professor and Chair, Department of Surgery, Vanderbilt University
	<b>TBD*</b> Peter Keipert, PhD President, KEIPERT Corp. Consulting, formerly VP Clinical Development, Sangart	<b>PFCs For Kidney and Heart Perfusion</b> Katja Bettina Ferenz, PhD Professor of Physiology, University Duisburg-Essen	<b>Clinical Trial Design for Blood Products in Trauma (TROOP &amp; TAP)</b> Jan Jansen, MBBS, PhD Professor of Surgery, Director, Center for Injury Science, University of Alabama
	<b>TBD*</b> Felice d'Agnillo, PhD Principal Investigator, Office of Blood Research & Review (OBRR), Center for Biologics Evaluation and Research (CBER)	<b>TBD*</b> speaker invited waiting for response	<b>Prehospital Plasma and Whole Blood for Trauma</b> Jason Sperry, MD, MPH Professor of Surgery and Critical Care, University of Pittsburgh
	<b>Panel Discussion</b>	<b>Panel Discussion</b>	<b>Panel Discussion</b>
	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
	<b>Moderators: Thomas Chang, Tim Estep</b>	<b>Moderator: Franck Zal</b>	<b>Moderator: Martin Schreiber</b>
<b>Reception</b>			
<b>6:15 pm - 7:00 pm</b>			
<b>7:00 pm - 9:30 pm</b>			
<b>Banquet Dinner &amp; Award Ceremony (Introduction of ISBS 2026 Presidents)</b>			
Monday November 18, 2024			
<b>Federal Sponsorship of Biosynthetic Blood Product Development</b>			
8:30 am - 10:30 am	NIH/NHLBI	DoD	BARDA
	<b>Government Stakeholder Forum</b> NIH, NSF, DOD/DARPA, BARDA, USAMMDA, MTEC <b>Moderator: Ken Bertram</b>		
<b>Break</b>			
<b>Regulatory Update (FDA/CBER)</b>			
11:00 am - 12:00 am	Victor Baum, MD Medical Officer, Division of Blood Components and Devices, Office of Blood Research and Review (OBRR), CBER, FDA		
<b>Regulatory Forum</b>			
12:00 pm - 1:00 pm	Panelists: Andre Cap, Toby Silverman, Abdu Ayalash, Franck Zal, Paul Buehler, Adam Gerber, Felice d'Agnillo, Victor Baum <b>Moderator: Jonathan Jahr</b>		
1:00 pm - 1:30 pm	<b>Closing Remarks: Allan Doctor and Jonathan Jahr</b>		