



1st - 4th of December 2025

Hotel Savoyen, Vienna, Austria

PRELIMINARY
PROGRAMME

31st Annual Meeting of the International Society of Mechanical Circulatory Support

MONDAY, 1st December, 2025			TUESDAY, 2nd December, 2025		WEDNESDAY, 3rd December, 2025		THURSDAY, 4th December, 2025	
Pre-Meeting Day & Board Meeting (Registration: 07:00-13:00)			Registration: 07:00 - 18:00 Exhibition: 09:00 - 18:00		Registration: 07:00 - 17:00 Exhibition: 09:00 - 18:00		Registration: 07:00 - 12:00 Exhibition: 09:00 - 15:00	
Turin	Paris & Wien	Olympia Mancini 3A	Olympia Mancini 2 & 3		Olympia Mancini 2 & 3		Olympia Mancini 2 & 3	
07:00								
07:30			OPENING CEREMONY		Breakfast Symposium - Melectronic		Mini Oral Session #3 - Hemocompatibility and Heart/Pump Interaction	
08:00			Heart Hackathon Intro & I					
08:30								
09:00			Helmut Reul Award Session		Oral Session #3: CFD Modelling and Simulation		Oral Session #5: Clinical Applications & Patient Management	
09:30			Coffee Break & Poster Exhibition					
10:00			Symposium #1: Lost in Transition: Navigating the MCS Spectrum		Break & Poster Exhibition		Coffee Break & Poster Exhibition	
10:30	ISMCS Executive Board Meeting				Symposium #3: Durable MCS Reimagined: Prognostics, Diagnostics & Therapies Off the Beaten Track		Symposium #5: Progress and Challenges in Pediatric MCS	
11:00			Lunch Symposium - Abbott					
11:30								
12:00	Lunch Break		Oral Session #1: In-Vitro Evaluation and Preclinical Innovations I		Lunch Symposium - J&J MedTech		Lunch Symposium - Shenzhen Core Medical	
12:30								
13:00			Oral Session #1: In-Vitro Evaluation and Preclinical Innovations I		Oral Session #4: In-Vitro Evaluation and Preclinical Innovations II		Oral Session #6: MCS Engineering and Preclinical Testing	
13:30	VAD Coordinator Session #1		Mini Oral Session #1: Short- and Long-Term MCS: Clinical Management and Outcomes					
14:00			Coffee Break & Poster Session		Mini Oral Session #2 - Heart Hackathon		Break & Poster Exhibition	
14:30	ISMCS Board Meeting		Key Note Lecture: Stavros Drakos, MD, PhD		Coffee Break & Poster Session		MCS Industry Update Session	
15:00			Symposium #2: Interdisciplinary Cardiac Recovery					
15:30	VAD Coordinator Session #2		Oral Session #2: User-Centered Design and Human Factors in MCS Devices		Symposium #4: Bridging the Gap: Advances in Temporary Mechanical Circulatory Devices		CLOSING CEREMONY	
16:00								
16:30								
17:00								
17:30	Young Investigators Pre-Meeting II							
18:00					ISMCS General Assembly			
18:30								
19:00								
19:30								
20:00								
20:30			Welcome Reception - Josephinum					
21:00								
21:30								
22:00					Gala Dinner - Hotel Savoyen			

PRE-MEETING MONDAY 1ST OF DECEMBER

07:45 - 10:00
Mancini 3A

Heart Hackathon: Introduction & Session I

07:45 - 08:10	Arrival with Coffee and Tea
08:10 - 08:20	Session Introduction: Overview, Highlights, Format for the Day <i>Madhumitha Dhamodarasamy (Australia) and Shaun Gregory (Australia)</i>
08:20 - 08:40	S1.1 UC Biomed <i>University of Caterbury, New Zealand</i>
08:40 - 09:00	S1.2 UNSW Mending Broken Heart <i>University of New South Wales, Australia</i>
09:00 - 09:20	S1.3 CBU Cardiac Engineering Team <i>University of Bath, United Kingdom</i>
09:20 - 09:40	S.1.4 Mahidol CardiaTech <i>Mahidol University, Thailand</i>
09:40 - 09:50	Discussion and Q/A
09:50 - 10:10	Break: Cultural Exchange & Morning Tea

10:10 - 12:00
Mancini 3A

Heart Hackathon: Session II

10:10 - 10:30	S2.1 QUT Heartbeates <i>Queensland University of Technology, Australia</i>
10:30 - 10:50	S2.2 Team Bath Heart <i>University of Bath, United Kingdom</i>
10:50 - 11:10	S2.3 Team KtaH <i>KTH Royal Institute of Technology, Sweden</i>
11:10 - 11:30	S2.4 Heart Lab Vienna <i>University of Applied Sciences Technikum Vienna</i>

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11:30 - 11:50 S2.5 Durham Heart Team
University of Durham, United Kingdom

11:50 - 12:00 Discussion and Q/A

09:00 - 11:30 ICCAC MCS Boot Camp Paris & Wien

The pre-meeting organized by the International Consortium of Circulatory Assist Clinicians (ICCAC) offers interactive education through case scenarios, conducted in a group setting and supplemented with hands-on experience to support training objectives.

Moderators: Janet Wu (USA), Samantha Keener (USA)

Faculty: Desiree Robson (Australia), Florian Müller (Germany), Oliver Seibert (Austria), Valerie Eberlein (Austria), Martina Socha (Austria), Katharina Homann (Germany)

Topics: HeartMate 3 (Abbott), Berlin Heart EXCOR (Berlin Heart), Impella (J&J Med-Tech), Xenios ECMO console (Fresenius Medical Care), Driveline Exit Site Best Practices

12:00 - 13:00 Lunch Break (joint for ICCAC MCS & Heart Hackathon)
Restaurant

13:00 - 14:30 Heart Hackathon: Session III Mancini 3A

13:00 - 13:20 S3.1 Team Monash Heart Hack
Monash University, Melbourne, Australia

13:20 - 13:40 S3.2 AUC Peribsen
The American University of Cairo, Egypt

13:40 - 14:00 S3.3 MAVIS
University of Medicine and Pharmacy „Grigore T. Popa“, Iasi, Romania

14:00 - 14:20 S3.4 Team Alberta Heart
University of Alberta, Alberta, USA

14:20 - 14:30 Discussion and Q/A

13:00 - 14:30

Paris & Wien

ICCAC VAD Coordinator Session 1: Long-Term Outcomes Post Durable LVAD: Perspectives Across the Globe

Moderators: Katharina Homann (Germany), Oliver Seibert (Austria)

13:00 - 13:15

Prehab-Rehab: The Benefits and Challenges of Therapy Interventions Before Implant

Janet Wu, The University of California San Francisco, USA

13:15 - 13:30

There's More to Quality of Life than Adverse Outcome Prevention: Discovering VAD Patient Expectations

Sarah E Schroeder, Bryan Heart, USA

13:30 - 13:45

Intimacy and Sexual Desire: The Importance of Guiding Safe and Healthy Sexual Relationships following VAD Implant

Florian Müller, UKS Homburg, Germany

13:45 - 14:00

Technology Anxiety and Device Dependence: Strategies to Enable Thriving Adaptation

Shishir Kore, Manchester University Hospital, United Kingdom

14:00 - 14:15

The Dreaded Germ: Exploring Novel Approaches to Preventing and Treating VAD Infections

Desiree Robson, St. Vincent's Hospital Sydney, Australia

14:15 - 14:30

Navigating the Clinical Landscape of External Outflow Graft Obstruction: How Do We Find it and What Do We Do Next

Andrew Woods, Freeman Hospital, Newcastle upon Tyne, United Kingdom

14:30 - 15:00

Coffee Break (joint for ICCAC, Heart Hackathon and ISMCS yInvestigators) Restaurant

15:00 - 16:45

Paris & Wien

ICCAC VAD Coordinator Session 2: Team-Based Approaches to Post-Durable LVAD Care: It Takes a Village

Moderators: Samantha Keener (USA), Florian Müller (Germany)

15:00 - 15:15

The Role of the LVAD Coordinator: What the Future Holds

Anne Marie Oppelaar, UMC Utrecht, The Netherlands

15:15 - 15:30

Global Perspectives on Social Support Evaluation: Do Caregivers Really Make a Difference and Should Drug Users be Implanted?

Valerie Eberlein, Medical University of Vienna, Austria

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- 15:30 - 16:00 Debate: The Use of Temporary Support pre-VAD: Friend of Foe?
PRO: Andrew Woods, Freeman Hospital, Newcastle upon Tyne, UK
CON: Sarah E Schroeder, Bryan Heart, USA
- 16:00 - 16:15 Pre-Implant Planning and Discharge Interventions: A Coordinator-Driven
Strategy for Improved Outcomes
Sylvie Baudart, The University of California San Francisco, USA
- 16:15 - 16:45 Technological Advances for MCS Therapy - A Coordinator's Dream and the
Sky's the Limit:
- 16:15 - 16:30 The VAD Coordinator Perspective
Volker Lauernroth, HDZ NRW, Bad Oeynhausen, Germany
- 16:30 - 16:45 The Engineering Perspective
Friedrich Kaufmann, Deutsches Herzzentrum der Charité (DHZC), Germany

14:30 - 18:30 ISMCS Young Investigator Symposium - supported by J&J MedTech

Mancini 3A

Moderators: Libera Fresiello (The Netherlands), Steven Jacobs (Belgium), Theodor Abart (Austria)

14:30 - 15:00 **Welcome and Coffee**
Foyer Gathering of all participants in the open Lunch Area; Network & Connect

15:00 - 16:00 **Pitch your Research - Introduction**
Mancini 3A The aim of this session is to provide a smooth, low-threshold introduction
(HH welcome) and networking opportunity for participants. The concept is a 3-minute presentation with one static slide, introducing the researcher and their main research focus.

16:00 - 17:15 **Keynote Session**
Mancini 3A
(HH welcome)

16:00-16:25 Striving in Academia - the pathway(s) to success - Prof. Jutta Arens
Prof. Jutta Arens is a professor at the University of Twente, The Netherlands, specializing in oxygenators and membrane technology. In her keynote, she will share insights from her exciting career and highlight how success does not always follow a straight path.

16:25-16:50 Bridging Clinical and Academic Research - Prof. Steven Jacobs
Prof. Steven Jacobs from Belgium's largest university hospital, UZ Leuven, is a cardiac surgeon by training who successfully combines his clinical duties with translational research in the field of MCS. In his keynote, he will share how to not only balance a clinical and academic career but merge them to excel in both.

16:50-17:15 Failure as a way to Success in Industry - Dr. Roland Graefe
Dr. Roland Grafe graduated as a Mechanical Engineer from Aachen and oversaw the R&D efforts on the ReinVAD, where he faced the challenges of translating excellent research projects into the MedTech market. He is now Director of Engineering at BiVACOR Inc. and has played a key role in developing the first centrifugal TAH

17:15-17:30 Short Break - Transition of Investigators to Workshop Room
(Vienna + Paris)

17:30 - 18:30 **Workshop: Key Aspects in preclinical MCS Device development**
Paris & Wien

Preclinical evaluation and development of MCS devices is a highly complex and multifactorial process. In this workshop, experts from different methodological fields will discuss current approaches, challenges, and opportunities, as well as the role their methods will play in advancing future MCS research and innovation.

Table 1 Hemodynamics & Physiological Control
Libera Fresiello (University of Twente), Shaun Gregory (Queensland University of Technology)

Table 2 Biocompatibility & Hemocompatibility
Jutta Arens (University of Twente), Marcus Granegger (Medical University of Vienna)

Table 3 Quality of Life & Usability
Cara Wrigley (University of Queensland), Thomas Schlöglhofer (Medical University of Vienna)

Table 4 In-Vivo Testing
Steven Jacobs (UZ Leuven), Christoph Nix (J&J Medtech)

Table 5 Computational Methods (CFD, Simulation)
Roland Grafe (BiVACOR Inc.), Benjamin Torner (Medical University of Vienna)

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17:30 - 18:30

Mancini 3A

Heart Hackathon: Review and Conclusion

17:30-18:00

Review of the Heart Hackathon Workshop

Madhumitha Dhamodarasamy (Queensland University of Technology, Australia),

Tharusha Perera (Heart Hackathon Lead)

18:00-18:30

Award Session and Close

- Judges Reflections

- Sponsors Reflections

- Awards (Note: Award Winners also Announced at Gala Dinner)

18:30 - 19:30

free time, gathering for dinner (leaving for dinner 19:30 in the lobby)

DAY 1

TUESDAY 2ND OF DECEMBER

08:00 - 08:30

Mancini 2&3

Opening Ceremony

Conference President: Daniel Zimpfer (Austria)

ISMCS President: Shaun Gregory (Australia)

08:30 - 09:30

Mancini 2&3

Helmut Reul Award Session

*Moderators: Libera Fresiello (The Netherlands), Jamshid Karimov (USA),
Georg Wieselthaler (KSA)*

08:30 - 08:40

Chronic In Vivo Analysis of a Smart LVAD Inlet Cannula

Karl Bohnenberger, Penn State College of Medicine, USA

08:40 - 08:50

Hydrodynamic Impact of Flexible Blades in Left Ventricular Assist Devices

Shweta Karnik, Georgia Institute of Technology & Emory University, USA

08:50 - 09:00

Cold Atmospheric Plasma Treatment in LVAD-Associated Driveline Infections: A New Frontier in Care

Hebe Al Asadi, Medical University of Vienna, Austria

09:00 - 09:10

Pediatric High Intuitive Framework (PHIF): Usability Architecture for Pediatric Ventricular Assist Devices

Ori Baer, Cornell University, Ithaca, USA

09:10 - 09:20

Clinical Utility of the Impella 5.5 Fiber Optic Sensor for Real-Time Pressure Monitoring in Cardiogenic Shock

Lukas Ruoff, Medical University of Vienna, Austria

09:20 - 09:30 Outflow Graft-to-Root Bypass as an Alternative Strategy for Aortic Root Thrombosis After HeartMate 3
Yuki Tadokoro, National Cerebral and Cardiovascular Center, Suita, Japan

09:30 - 10:00 Coffee Break & Poster Exhibition
Foyer + Mancini 1

10:00 - 11:30 Symposium 1: Lost in Transition: Navigating the MCS Spectrum
Mancini 2&3

Moderators: Desiree Robson (Australia), Günther Laufer (Austria), Claudius Mahr (USA)

10:00 - 10:15 The First Beat: ECMO as a Bridge-When, Why, and What Next?
Roxana Moayedifar, Medical University of Vienna, Austria

10:15 - 10:30 Impella 5.5 Best Practices: The Fine Line Between Support and Optimal Unloading
Alexander Bernhardt, University Hospital Hamburg-Eppendorf, Germany

10:30 - 10:45 When Short Isn't Enough: Indicators for Transitioning to Long-Term MCS
Manreet Kanwar, University of Chicago Medicine, USA

10:45 - 11:00 Long-Term MCS: Choosing the Right Device and the Right Moment
Claudius Mahr, Medical City Healthcare, Dallas, USA

11:00 - 11:15 Escalating or De-escalating: How and When to Pivot Therapy
Antonio Loforte, University of Turin, Italy

11:15 - 11:30 From Crisis to Control: Building an MCS Algorithm That Works
Jasmin Hanke, Hannover Medical School, Germany

11:30 - 12:30 Lunch Symposium sponsored by Abbott
Mancini 2&3 **From Evidence to Impact: Advancing Care Through Clinical Research**

Moderators: Julia Riebandt (Austria), Alexander Bernhardt (Germany)

11:30 - 11:45 Hemocompatibility and HeartMate 3: The ARIES Paradigm Shift
Alexander Bernhardt, University Hospital Hamburg-Eppendorf, Germany

11:45 - 12:00 TEAM-HF: Transforming Advanced Heart Failure Management Through Early Intervention
Linda van Laake, UMC Utrecht, The Netherlands

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12:00 - 12:15 From Exit Site to Outcome: The ASPIRE Perspective on Driveline Care
Thomas Schlöglhofer, Medical University of Vienna, Austria

12:15 - 12:30 LVAD Therapy Redefined: Achieving Net Survival Gains in Heart Failure
tbd (tbd)

12:30 - 14:00 **Oral Session 1: In-Vitro Evaluation and Preclinical Innovations I** Mancini 2&3

*Moderators: Isabell Esslinger (Germany), Heinrich Schima (Austria),
Toru Masuzawa (Japan)*

12:30 - 12:45 A Control-Free, Large-Gap, Thrust-Based Impeller Levitation in a Ventricular Assist Device
Wataru Hijikata, Institute of Science Tokyo, Japan

12:45 - 13:00 Static and Dynamic Performance Evaluation of the Axial-Gap Maglev Motor for Centrifugal LVAD
Nobuyuki Kurita, Baylor College of Medicine, Texas Children's Hospital, Houston, USA

13:00 - 13:15 An Interlaboratory Study for the In Vitro Investigation of the Hemodynamic Performance of LVAD Technology
Libera Fresiello, University of Twente, The Netherlands

13:15 - 13:30 A Novel Sensor for Catheter-Free, Real-Time Left Ventricular Function Monitoring: Results from a Pilot Study in Swine
Max Habermusch, Medical University of Vienna, Austria

13:30 - 13:45 Novel Technique of Indocyanine Green Fluorescence Imaging in Extracorporeal Membrane Oxygenation
Tatsuki Fujiwara, Institute of Science Tokyo, Japan

13:45 - 14:00 A Co-Pulse Synchronized Aortic Pressure Generation Method in Resting Mode of Ex Vivo Heart Perfusion
Daisuke Sakota, National Institute of AIST, Tsukuba, Japan

14:00 - 15:00 **Mini Oral Session 1: Short- and Long-Term MCS: Clinical Management and Outcomes** Mancini 2&3

*Moderators: Sarah Schroeder (USA), Steven Jacobs (Belgium),
Martin Bernardi (Austria)*

14:00 - 14:06 Evaluation of Hemolysis and Its Impact on Renal Dysfunction During Impella CP Support Using Plasma-Free Hemoglobin
Taiji Inamori, Saiseikai Kumamoto Hospital, Kumamoto, Japan

- 14:07 - 14:13 Percutaneous Microaxial Temporary Ventricular Assist Device Support for a Failing Systemic Right Ventricle: Single Institutional Experience
Jiyong Moon, The University of Texas at Austin, USA
- 14:14 - 14:20 Prognostication in Cardiogenic Shock: The Role of EHR Data and Micro-Axial Flow Pump Analytics
Thomas Schlöglhofer, Medical University of Vienna, Austria
- 14:21 - 14:27 Impact of Combined Use of VA-ECMO and Impella (ECPELLA) on Short-Term Mortality in Patients with Cardiogenic Shock Receiving VA-ECMO - A Single Center Retrospective Cohort Study Using Propensity Score Matching
So Hirata, Saiseikai Kumamoto Hospital, Kumamoto, Japan
- 14:28 - 14:34 RP Flex Utilization for Right Ventricular Support and Cardiogenic Shock: Single Center Experience
Ioana Dumitru, Tampa General Hospital, USA
- 14:35 - 14:41 Left Ventricular Assist Device Outflow Graft Pulsed Wave Doppler as a Tool to Derive Flow Waveforms
Ricardo Deveza, St. Vincent's Hospital Sydney, Australia
- 14:42 - 14:48 Modeling Hemodynamic Stability in LVAD Patients: A Machine Learning Framework Combining Clinical and Pump-Derived Data in the ICU
Antonio Mosca, Medical University of Vienna, Austria
- 14:49 - 14:55 Towards Caregiver-Free Home Management of LVAD Therapy: A Clinical Study of ICT-Based Home LVAD Care Supported by Community Healthcare
Shunsuke Saito, The University of Osaka, Japan

15:00 - 15:30 Coffee Break & Poster Exhibition
Foyer + Mancini 1

15:30 - 17:30 **Key Note Lecture and Symposium 2: Interdisciplinary Cardiac Recovery**
Mancini 2&3

*Moderators: Manreet Kanwar (USA), Stavros Drakos (USA),
Marcus Granegger (Austria)*

- 15:30 - 16:00 Advancing the Science of Myocardial Recovery with Mechanical Circulatory Support
Keynote
Stavros Drakos, Utah Medical Center, Utah, USA
- 16:00 - 16:15 Recovery Pathways: Decommissioning vs. Explantation Strategies
Scott Silvestry, University of Arizona College of Medicine, USA

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- 16:15 - 16:30 The Role of the Right Ventricle in Cardiac Recovery with LVADs
Michael Bonios, Onassis Cardiac Surgery Center, Athens, Greece
- 16:30 - 16:45 Monitoring of Cardiac Function during LVAD support
Christopher Hayward, St. Vincent's Hospital Sydney, Australia
- 16:45 - 17:00 Promoting Cardiac Recovery by Optimizing Cardiac Mechanics with MCS
Marcus Granegger, Medical University of Vienna, Austria
- 17:00 - 17:15 Predictors of Myocardial Recovery and Device Explantation in Children
Supported with Berlin Heart EXCOR
Valerii Iaprintsev, The Royal Children's Hospital, Melbourne, Australia
- 17:15 - 17:30 Panel Discussion

17:30 - 18:30
Mancini 2&3

Oral Session 2: User-Centered Design and Human Factors in MCS Devices

*Moderators: Julia Riebandt (Austria), Akira Shiose (Japan),
Scott Silvestry (USA)*

- 17:30 - 17:45 Co-Designing Critical MCS Device Communication in Emergency Departments
Leon Fitzpatrick, Queensland University of Technology, Australia
- 17:45 - 18:00 Usability of the BiVACOR Total Artificial Heart Peripherals for Outpatients:
Insights from a Simulation Study
Katharina Missoni, Medical University of Vienna, Austria
- 18:00 - 18:15 Feature Selection for Mechanical Circulatory Support Devices: Required vs.
Desirable Elements of Platform Technology Design
IFan Yen, magAssist, Suzhou, China
- 18:15 - 18:30 A Portable, Comprehensive ECMO Insertion Pack Kit for Intra-Hospital and
Mobile Cannulation
Salim Olia, University of Pennsylvania, Philadelphia, USA

20:00 - 22:30
Josephinum

Welcome Reception

Historical building and Medical History Museum Vienna Tour in the Heart of Vienna.
Located at: Währinger Straße 25 · 1090 Wien

DAY 2 WEDNESDAY 3RD OF DECEMBER

07:30-08:30 Breakfast Symposium by Medtronic: Staying Alive: Best Practices on Managing HVAD Patients for the Long-Haul
Mancini 2&3

Moderators: Sylvie Baudart (USA), Christopher Hayward (Australia), Thomas Schlöglhofer (Austria)

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|---------------|---|
| 07:30 - 07:45 | Prevention and management of driveline infections to maintain continuity of HVAD outpatient care
<i>Florian Müller, UKS Homburg, Germany</i> |
| 07:45 - 08:00 | Maintaining optimal pump parameters in HVAD patients over time
<i>Oliver Seibert, Medical University of Vienna, Austria</i> |
| 08:00 - 08:15 | Staying Fit! Why physical activity matters in long-term HVAD patients
<i>Desiree Robson, St. Vincent's Hospital Sydney, Australia</i> |
| 08:15 - 08:30 | Myocardial Recovery in HVAD patients
<i>Andrew Woods, Freeman Hospital, Newcastle upon Tyne, United Kingdom</i> |

08:30 - 10:00 Oral Session 3: CFD Modelling and Simulation
Mancini 2&3

Moderators: Tomohiro Nishinaka (Japan), Christoph Nix (Germany), Francesco Moscato (Austria)

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|---------------|--|
| 08:30 - 08:45 | Blood Trauma of Blood Pumps Under Realistic Hemodynamic Conditions
<i>Rosmarie Schöfbeck, Medical University of Vienna, Austria</i> |
| 08:45 - 09:00 | Image-Based Models for Left Heart Flow Morphodynamics in Hypertrophic Obstructive Cardiomyopathy
<i>Abdelrahman Sultan, The American University in Cairo, Aswan Heart Center, Egypt</i> |
| 09:00 - 09:15 | A Numerical Framework for Virtual Trials in Pediatric Heart Failure: A Proof-of-Concept Study
<i>Pauline Luger, Medical University of Vienna, Austria</i> |
| 09:15 - 09:30 | Computational Prediction of Hemolysis Incorporating Physiological Models of the Red Blood Cell Membrane
<i>Nico Dirkes, RWTH Aachen University, Germany</i> |

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09:30 - 09:45 Towards the Design and Testing of an Impeller for a Novel Intra-Aortic Left Ventricular Assist Device
Luke Myhill, University of Bath, United Kingdom

09:45 - 10:00 PulmonART: A Novel Cardiac Support Device for Right Heart Failure
Elif Oran, Coventry University, United Kingdom

10:00 - 10:30 **Break & Poster Exhibition**
Foyer + Mancini 1

10:30 - 12:00 **Symposium 3: Durable MCS Reimagined: Prognostics, Diagnostics & Therapies Off the Beaten Track**
Mancini 2&3

Moderators: Linda van Laake (The Netherlands), Arjang Ruhparwar (Germany), Antonio Loforte (Italy)

10:30 - 10:45 Living Myocardial Slices: Walking The Path Towards Standardization
Linda van Laake, UMC Utrecht, The Netherlands

10:45 - 11:00 The Repair Revolution: Synergizing MCS with Regenerative Medicine
Shigeru Miyagawa, Osaka University, Japan

11:00 - 11:15 Artificial Intelligence-Driven Innovation in Health Care and MCS
Marvin Slepian, University of Arizona, USA

11:15 - 11:30 Exercise Response Phenotype Clustering in LVAD Patients Undergoing Cardiopulmonary Exercise Testing
Rengin Sabaoğlu, UMC Utrecht, The Netherlands
(ISMCS 2024 Young Researcher Scholarship Winner)

11:30 - 11:45 Cardio-Microcurrent Therapy for HFrEF: Findings from the C-MIC II Open-Label Randomized Controlled Trial
Eduardo Rame, Thomas Jefferson University, USA

11:45 - 12:00 MISSION-reBEAT Results: First-in-Human Clinical Investigation of the reBEAT Pulsatile, Biventricular MCS System Avoiding Blood Contact in Patients With Advanced Heart Failure
Christian H. Møller, Rigshospitalet, Copenhagen University, Denmark

12:00 - 13:00

Mancini 2&3

Lunch Symposium sponsored by J&J MedTech

Therapy pathways and treatment options with Impella® heart pump

Moderators: tba

12:00 - 12:15

Heart Recovery and Weaning Strategies with Impella

Roxana Moayedifar, Medical University of Vienna, Austria

12:15 - 12:30

ICU Management and Escalation-Strategies

Sascha Ott, German Heart Center of the Charité (DHZC), Germany

12:30 - 12:45

DanGer Shock and Longterm Follow-Up of Patients

Jacob E. Møller, Rigshospitalet, Copenhagen University, Denmark

12:45 - 13:00

Panel Discussion

13:00 - 14:30

Mancini 2&3

Oral Session 4: In-Vitro Evaluation and Preclinical Innovations II

*Moderators: Ina Laura Perkins (Sweden), Eduardo Rame (USA),
Kiyotaka Fukamachi (Japan)*

13:00 - 13:15

Anticoagulants for Clot Prevention Under Static Whole Blood Conditions In Vitro: Heparin Is Not Superior to Direct Thrombin Inhibitor

Jun Teruya, Baylor College of Medicine, Houston, USA

13:15 - 13:30

Enhanced Endothelization and Hemocompatibility of Additively Manufactured Titanium Surface Architecture

Lingxiao Zeng, Monash University, Melbourne, Australia

13:30 - 13:45

Experimental Framework to Assess Impact of Pump Design on Haemocompatibility

Aldo Jose Suria Roldan, Medical University of Vienna, Austria

13:45 - 14:00

Pump Speed Modulation of Magnetically Levitated Pediatric Ventricular Assist Device

Yuki Nagasawa, Ibaraki University, Hitachi, Japan

14:00 - 14:15

Near-Expert-Level ECG Delineation in 7 ms: A Compact xLSTM-based Model for Edge Deployment

David Lung, Medical University of Vienna, Austria

14:15 - 14:30

Estimation of Patient Hemodynamics in a Magnetically Levitated Total Artificial Heart

Nicholas Greatrex, BiVACOR, Huntington Beach, USA

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14:30 - 15:30

Mancini 2&3

Mini Oral Session 2 - Heart Hackathon

Moderators: Po-Lin Hsu (China), Madhumitha Dhamodarasamy (Australia), Shaun Gregory (Australia)

14:30 - 14:36

Investigating Valve And Sinus Geometry In Polymeric Valves for a Total Artificial Heart

Joshua Keenan, University of Bath, United Kingdom

14:37 - 14:43

In-Silico Verification of Anatomical Fitment for a Total Artificial Heart using V-Patients Software

Benjamin Iliev, CBUCE, USA

14:44 - 14:50

Computational Fluid Dynamics: Effects of Channel Impeller Width of the Double Bladeless Total Artificial Heart (DBL-TAH)

Chatchayapa Prayadrat, Mahidol University, Thailand

14:51 - 14:57

Design and Evaluation of an Emerging Lightweight, Core-Less Motor Topology and its Application in a Non-Centrifugal Device

Luke Hehir, Monash University, Australia

14:58 - 15:04

Surface Modification of Titanium Alloy by Anodisation to Improve Hemo compatibility

Natalie Widjaja, Sydney School of Mechanical Engineering, Australia

15:05 - 15:11

UV-Vis Spectrophotometric Analysis of Leachates From Materials Used in a Total Artificial Heart

Morgan Reed, University of Bath, United Kingdom

15:12 - 15:18

Heart Hackathon HeartLab Vienna

Leo Ballabani, University of Applied Science Technikum Vienna, Austria

15:19 - 15:25

Assessing Hemolysis in a Pulsatile Heart Pump Loop

Kathleen Nehrbass, CBU Cardiac Engineering, USA

15:30 - 16:00

Foyer + Mancini 1

Coffee Break & Poster Exhibition

16:00 - 17:30
Mancini 2&3

Symposium 4: Bridging the Gap: Advances in Temporary Mechanical Circulatory Devices

Moderators: Tomonori Tsukiya (Japan), Peter Schellongowski (Austria), Robert Dowling (USA)

- | | |
|---------------|---|
| 16:00 - 16:15 | Temporary Mechanical Circulatory Support in the Acute Setting:
A Contemporary Device Landscape
<i>Jamshid Karimov, Cardiovascular Innovation and Research, Cleveland, USA</i> |
| 16:15 - 16:30 | Emerging Excellence: Extracorporeal Mechanical Circulatory Support in China - A National Update
<i>Shu Chen, Wuhan Hospital, China</i> |
| 16:30 - 16:45 | Microaxial-Flow Technology for High-Risk Percutaneous Coronary Intervention
<i>Po-Lin Hsu, Artificial Organ Technology Lab, Soochow University, China</i> |
| 16:45 - 17:00 | J-PVAD Registry Insights: Evolving Trends in Impella Support Across Japan
<i>Koichi Toda, Dokkyo University Saitama Medical Center, Japan</i> |
| 17:00 - 17:15 | Future Directions of ECMO: An Engineering Perspective
<i>Jutta Arens, University of Twente, The Netherlands</i> |
| 17:15 - 17:30 | Future Directions of ECMO: A Clinical Perspective
<i>Lars Mikael Broman, Karolinska Institute, Sweden</i> |

18:00 - 19:00
Mancini 2&3

ISMCS General Assembly

20:00 - 23:00
Restaurant

Gala Dinner
Gala Dinner & Award Session

DAY 3 THURSDAY 4TH OF DECEMBER

07:30-08:30
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Mini Oral Session 3: Hemocompatibility and Heart/Pump Interaction

Moderators: tbd (tbd), Benjamin Torner (Austria), Sebastian Jansen (Germany)

- | | |
|---------------|--|
| 07:30 - 07:36 | A Novel Compliant Aortic Phantom Fabrication Method for Cardiovascular Device Testing
<i>Connor Coughlan-Ward, Monash University, Melbourne, Australia</i> |
| 07:37 - 07:43 | Perfusion Performance Evaluation of a Maglev Centrifugal Pediatric VAD in Mock Circulation Loop
<i>Masahiro Osa, Ibaraki University, Hitachi, Japan</i> |
| 07:44 - 07:50 | A Miniaturized Rotary Blood Pump Adapted for Fontan Use in an Animal Model
<i>Ryan Stanfield, University of Utah, Salt Lake City, USA</i> |
| 07:51 - 07:57 | Comparison of CFD and 4D Flow MRI Results in a Total Artificial Heart
<i>Minu Bahrami, University of Bath, United Kingdom</i> |
| 07:58 - 08:04 | Quantitative Scoping Review of Mechanical Circulatory Support Devices Virtual Fitting: Unmet Needs and Proposed Solutions
<i>Lorenzo Civilla, Medical University of Vienna, Austria</i> |
| 08:05 - 08:11 | The EMPEROR Total Artificial Heart: A Next-Generation, Fully-Implantable SynCardia Total Artificial Heart
<i>Duffy Elmer, SynCardia Systems, Tucson, USA</i> |
| 08:12 - 08:18 | Initial Experience with a Novel Large-Animal Model of Ventricular Volume Overload
<i>Philipp Aigner, Medical University of Vienna, Austria</i> |
| 08:19 - 08:25 | Drainage Cannula Choice Impacts Risk of Complications During VA ECMO: An In Silico Analysis
<i>Avishka Wickramarachchi, Queensland University of Technology, Australia</i> |

08:30 - 10:00
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Oral Session 5 - Clinical Applications & Patient Management

Moderators: Roxana Moayedifar (Austria), Koichi Toda (Japan), Marvin Slepian (USA)

- 08:30 - 08:45 Associated Factors for Successful Cardiac Recovery with Berlin Heart Excor in Pediatric Patients with Dilated Cardiomyopathy
Motoki Komori, The University of Osaka, Japan
- 08:45 - 09:00 Early Aortic Root Thrombosis After LVAD Implantation: Risk Factor Analysis
Kota Suzuki, National Cerebral and Cardiovascular Center, Suita, Japan
- 09:00 - 09:15 First-In-Human Implantation of a Next-Generation Membrane-Based LVAD
Christopher Hayward, St Vincent's Hospital, Sydney, Australia
- 09:15 - 09:30 Detection of Native Heart Contractility and Breathing Through Magnetic Bearing Systems
Nicholas Greatrex, BiVACOR, Huntington Beach, USA
- 09:30 - 09:45 Standardizing Inflow Cannula Angle Measurements On Chest X-Ray For LVAD Patients Using Ai-Guided Posture Correction
János Imre Barabás, Semmelweis University, Budapest, Hungary
- 09:45 - 10:00 The Effect of Orthostatic Transitions on LVAD Pump Flow and the Association with Peak VO_2
Maaïke Wösten, UMC Utrecht, The Netherlands

10:00 - 10:30
Foyer + Mancini 1

Coffee Break & Poster Exhibition

10:30 - 12:00
Mancini 2&3

Symposium 5: Progress and Challenges in Pediatric MCS

Moderators: Katrin Lunze (Germany), Iki Adachi (USA), Daniel Zimpfer (Austria)

- 10:30 - 10:45 Tailoring Surgical Strategies for Small Ventricles and Complex Congenital Malformations
Iki Adachi, Baylor College of Medicine, USA
- 10:45 - 11:00 Networked for Impact: How ACTION Is Transforming Pediatric Heart Failure and MCS Outcomes
Angela Lorts, Cincinnati Children's Hospital Medical Center, USA

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- 11:00 - 11:15 **PediPella: Redefining Pediatric Mechanical Circulatory Support for the Smallest Hearts**
Bart Meyns, UZ Leuven, Belgium
- 11:15 - 11:30 **Engineering the Future: Recent Progress on the NeoVAD**
Katharine Fraser, University of Bath, United Kingdom
- 11:30 - 11:45 **PediaFlow™ Miniature MagLev Pediatric VAD: Path to Early Feasibility in Humans**
James Antaki, Cornell University, USA
- 11:45 - 12:00 **Shaping the Future of Pediatric-Scaled Continuous-Flow Total Artificial Heart Technology**
Kiyotaka Fukamachi, Kyushu University Graduate School of Medicine, Japan

12:00 - 13:00 **Lunch Symposium sponsored by Shenzhen Core Medical**

Mancini 2&3

Moderators: tbd, tbd

- 12:00 - 12:15 tbd
tbd (tbd)
- 12:15 - 12:30 tbd
tbd (tbd)
- 12:30 - 12:45 tbd
tbd (tbd)
- 12:45 - 13:00 tbd
tbd (tbd)

13:00 - 14:30 **Oral Session 6: MCS Engineering and Preclinical Testing**

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Moderators: Nobuyuki Kurita (USA), Salim Olia (USA), Philipp Aigner (Austria)

- 13:00 - 13:15 **Reducing Power Consumption of Magnetic Levitation Motor by Zero-Power Control for Implantable Pediatric Ventricular Assist Devices**
Ryoichiro Sato, Ibaraki University, Hitachi, Japan
- 13:15 - 13:30 **Innovative Left Atrial Unloading Device: Engineering and Preclinical Testing**
Ali Azadani, University of Denver, USA

13:30 - 13:45	Hemodynamic Performance of the VIGOR sVAD in a HFpEF Mock Circulation Loop <i>Ming-Yao Chan, Royal Papworth Hospital NHS Foundation Trust, United Kingdom</i>
13:45 - 14:00	Comparison of Platelet Adhesion on Different Hard Material Coatings and Bonding Agents for Ventricular Assist Devices in a Flow Chamber <i>Isabell Esslinger, German Heart Center of the Charité, Berlin, Germany</i>
14:00 - 14:15	Development of a Stented Inlet for Left Ventricular Assist Devices <i>Shweta Karnik, Georgia Institute of Technology & Emory University, USA</i>
14:15 - 14:30	Limited Effect of Blade Profile Shape and Thickness on Hydraulic Performance and Hemocompatibility in Rotodynamic Blood Pumps <i>Benjamin Torner, Medical University of Vienna, Austria</i>

14:30 - 15:00 **Break & Poster Exhibition**
Foyer + Mancini 1

15:00 - 16:30 **MCS Industry Update Session**
Mancini 2&3

*Moderators: Katharine Fraser (United Kingdom), tba (tba),
Daniel Zimpfer (Austria)*

15:00 - 15:07	Abbott <i>Paul Newman (USA)</i>
15:08 - 15:15	J&J MedTech <i>tbd</i>
15:16 - 15:23	Shenzhen Core Medical <i>tbd</i>
15:24 - 15:31	BrioHealth Solutions <i>tbd</i>
15:32 - 15:39	Bravida Medical <i>tbd</i>
15:40 - 15:47	ActiCare Health <i>tbd</i>
15:48 - 15:55	magAssist <i>Po-Lin Hsu (China)</i>

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15:56 - 16:03 Adtech Healthcare
Mary McGovern (United Kingdom)

16:04 - 16:11 CorWave
Louis de Lillers (France)

16:12 - 16:19 Fresenius Medical Care
tbd

16:20 - 16:27 mps Microsystems
tbd

16:30 - 17:00 **Closing Ceremony & Farewell**
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Conference President: Daniel Zimpfer (Austria)
ISMCS 2026 Executive Chair: Po-Lin Hsu (China)

