October 31, Wednesday

9:00 - 11:00: Young Investigators’ Pre-symposium

**Moderators:**
- Tomonori Tsukiya (National Cerebral and Cardiovascular Center, Japan)
- Daniel Timms (BiVACOR, Inc., USA)

**PS-1 - Reduction of von Willebrand factor in Response to Shear Stress loading and Evaluation of Bleeding Risk prior to LVAD Implantation**
Ko Sakatsume (Division of Cardiovascular Surgery, Tohoku University Graduate School of Medicine, Japan)

**PS-2 - An Optimal Magnetic Coupling System for Percutaneous Ventricular Assist Devices**
Fredy Munoz (Faculty of Medicine, University of Queensland, Australia)

**PS-3 - ELEVATED VON WILLEBRAND FACTOR MULTIMERS ARE ASSOCIATED WITH LVAD THROMBOSIS**
Samson Hennessy-Strahs (Division of Cardiovascular Surgery, Hospital of The University of Pennsylvania, USA)

**PS-4 - Design of an axial blood pump with a large-gap passive levitation technology utilizing a combination of magnetic force and thrust force**
Kazuma Shoji (Department of Mechanical Engineering, School of Engineering, Tokyo Institute of Technology, Japan)

**PS-5 - Clinical Outcomes of Implantable Left Ventricular Assist Device as Bridge-to-Transplant Therapy**
Masaki Komatsu (Department of Surgery, Division of Cardiovascular Surgery, Shinshu University School of Medicine, Japan)

**PS-6 - Bond Graph Modelling of a Cardiovascular System + TAH: “A New Way to Look at Things” to Improve System Design**
Mengtang Li (Department of Mechanical Engineering, Vanderbilt University, Nashville, USA)

**PS-7 - Clinical outcome of HeartMate II in Nagoya University**
Masato Mutsuga (Department of Cardiac Surgery, Nagoya University, Graduate School of Medicine, Japan)

**PS-8 - Interleukin-6, 8 levels during ex vivo heart perfusion using Blood cardioplegia or Custodiol for heart transplant**
Zhuldyz Nurmykhametova (National Research Center for Cardiac Surgery, Astana, Kazakhstan)

**PS-9 - Quantification of DNA Damage in Heart Tissue as a Novel Prediction Tool for Therapeutic Prognosis**
Toshiyuki Ko (Department of Cardiovascular Medicine, The University of Tokyo Hospital, Japan)

**PS-10 - Validation of CFD methods for intraventricular flow fields and the prediction of intraventricular thrombosis**
Mojgan Ghodrati (Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Austria)
12:00 - 12:50 Tokyo Memorial Lecture

**Moderator**: Minoru Ono (The University of Tokyo, Japan)

TL - History and Perspective of MCS: The trail blazed and the pathway ahead
James Long (INTEGRIS Baptist Medical Center, Oklahoma City, USA)

*Sponsored by*: Abbott Medical Japan Co., Ltd.

12:55 - 13:30 Opening Ceremony

**Speakers**: Cumaraswamy Sivathasan (National heart centre, Singapore)
Minoru Ono (The University of Tokyo, Japan)

13:30 - 14:45 Helmut Ruel Young Investigator Award

**Moderators**: Geoffrey Tansley (Griffith University, Australia) Toru Masuzawa (Ibaraki University, Japan)

YIA-1 - Shear-Mediated GpIIb/IIIa-Rich Platelet Microparticle Generation: A Mechanism Validating Inability of GpIIb/IIIa Blockade to Limit MCS Thrombosis
Yana Roka-Moiia (Department of Medicine and Biomedical Engineering, Sarver Heart Center, University of Arizona, Tucson, AZ, USA)

YIA-2 - Accurate Quantitative evaluation of Aortic Insufficiency during LVAD support by thermodilution analysis
Daichi Akiyama (Department of Cardio-thoracic Surgery, The University of Tokyo Hospital, Japan / National Cerebral and Cardiovascular Center, Research Institute, Department of Artificial Organs, Japan)

YIA-3 - MCS program in Kazakhstan: current status and future perspectives
Assel Medressova (National Research Cardiac Surgery Center, Astana, Kazakhstan)

YIA-4 - Prevention of thrombus formation inside a magnetically levitated centrifugal blood pump using impeller vibrational excitation
Tomotaka Murashige (Department of Mechanical Engineering, School of Engineering, Tokyo Institute of Technology, Japan)

YIA-5 - Echocardiographic Particle Image Velocimetry in the Isolated Pig Heart
Philipp Aigner (Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Austria / Ludwig Boltzmann Cluster for Cardiovascular Research, Vienna, Austria)

YIA-6 - Next Generation Ultra-Compact Centrifugal Pediatric VAD Using Maglev motor with Improved Design to Enhance Energy Efficiency
Masahiro Osa (Department of Mechanical Systems Engineering, Ibaraki University, Japan)

14:45 - 15:15 Special Lecture 1

**Moderator**: Kiyotaka Fukamachi (Cleveland Clinic, USA)

SL1 - Continuous long-term health-monitoring by wearable sensors
Takao Someya (Electrical and Electronic Engineering and Information Systems, The University of Tokyo, Japan / Thin-Film Device Laboratory & Center for Emergent Matter Science (CEMS), RIKEN, Japan)
15:15 - 15:45 Special Lecture 2

Moderator: Shunei Kyo (Tokyo Metropolitan Institute of Gerontology, Japan)

SL2 - “Futurability” for Cardiology and Cardiovascular surgery
Yoshiki Sawa (Osaka University, Japan)

16:30 - 17:20 Oral 1: Hemocompatibility 1

Moderators: Thomas Schlöglhofer (Medical University of Vienna, Austria)
Osamu Maruyama (National Institute of Advanced Industrial Science and Technology (AIST), Japan)

O1-1 - High intensity transient signals (HITS) on transcranial Doppler (TCD) as an early sign of thrombosis in a rotary blood pump
Bojan Biocina (Department of Cardiac Surgery, School of Medicine, University of Zagreb, Croatia)

O1-2 - Risk analysis of stroke in the acute phase after Left Ventricular Assist Device Implantation
Takaaki Samura (Department of Cardiovascular Surgery, Osaka University Graduate School of Medicine, Osaka, Japan)

O1-3 - Rethinking the Hemolysis Test Loop: Adjusting the Design for High Pulsatility Pumps
Nicole Byram (Department of Biomedical Engineering, Lerner Research Institute, Cleveland Clinic, Cleveland, Ohio, USA)

O1-4 - On the representation of effective stress for computing hemolysis
Peng Wu (Artificial Organ Technology Lab, Bio-manufacturing Research Centre, Soochow University, Suzhou, China)

O1-5 - Hemolysis test of MU-Centrifugal Blood Pump with an Amplitude Variation for Mimic a Physiological Blood Flow
Phornphop Naiyanetr (Department of Biomedical Engineering, Faculty of Engineering, Mahidol University, Thailand)
November 1, Thursday

9:00 - 9:50 Oral 2 : Total Artificial Heart

**Moderators:** Kiyotaka Fukamachi (Cleveland Clinic, USA)  
Geoffrey Tansley (Griffith University, Australia)

O2-Keynote - Total Artificial Hearts: An Overview and Future Perspective  
Kiyotaka Fukamachi (Department of Biomedical Engineering, Lerner Research Institute, Cleveland Clinic, Cleveland, Ohio, USA)

O2-RF2 - Update on RealHeart™'s Progress Towards Chronic In Vivo Studies  
Ina Laura Pieper (R&D, Scandinavian Real Heart AB, Sweden)

O2-RF3 - Cleveland Clinic Continuous Flow Artificial Heart: Current Perspectives and Device Update  
Jamshid Karimov (Cleveland Clinic, USA)

O2-4 - Characterization of the RealHeart™ Total Artificial Heart with a Hybrid Cardiovascular Simulator  
Libera Fresiello (Department of Cardiac Surgery, KU Leuven, Leuven, Belgium)

O2-5 - Computational Fluid Dynamics Analysis of the RealHeart™ Demonstrates Low Power Consumption and Low Thrombosis Risk  
Ina Laura Pieper (R&D, Scandinavian Real Heart AB, Sweden)

9:50 - 10:40 Oral 3 : MCS on Acute Presentation

**Moderators:** Aly El Banayosy (INTEGRIS Baptist Medical Center, USA)  
Koichi Toda (Osaka University, Japan)

O3-Keynote -  
Aly El Banayosy (INTEGRIS Baptist Medical Center, USA)

O3-RF2 - Ventricular assist device therapy using MERA Monopivot Centrifugal Pumps for cardiogenic shock patients in INTERMACS profile-1  
Tatsuki Fujiwara (Department of Cardiovascular Surgery, Tokyo Medical and Dental University, Japan)

O3-RF3 - Central ECMO with LV vent for acute heart failure  
Tatsuichiro Seto (Department of Surgery, Division of Cardiovascular Surgery, Shinshu University School of Medicine, Japan)

O3-4 - Preclinical evaluation of extracorporeal ventricular assist device system for bridge-to-decision  
Tomonori Tsukiyama (Department of Artificial Organs, National Cerebral and Cardiovascular Center, Japan)

O3-5 - Early Experience of Percutaneous Left Ventricular Assist Device “Impella” in Japan  
Shohei Yoshida (Department of Cardiovascular Surgery, Osaka University Graduate School of Medicine, Japan)
10:00 - 12:00 Nurse / Coordinator Session 1

10:40 - 11:45 Oral 4: Physiological Control

*Moderators:* Francesco Moscato (Medical University of Vienna, Austria)  
Ulrich Steinseifer (Monash University, Australia)

**O4-Keynote - Physiologically adaptive control of rotary blood pumps: Conclusions from clinical studies and observations**
Heinrich Schima (Medical University of Vienna, Austria)

**O4-2 - A physiological control system for an LVAD that can accommodate interpatient and intrapatient variation**
Masoud Fetanat (Graduate School of Biomedical Engineering, UNSW, Sydney, Australia)

**O4-3 - The effects of VAD pressure sensitivity on exercise physiology: evaluation with a computational model**
Libera Fresiello (Department of Cardiac Surgery, KU Leuven, Leuven, Belgium)

**O4-4 - Automatic Flow Control Method for the Cleveland Clinic Continuous-Flow Total Artificial Heart**
Barry Dean Kuban (Department of Biomedical Engineering, Cleveland Clinic, Cleveland, Ohio, USA)

**O4-5 - In-Vitro Evaluation of a Rotary Blood Pump Management System that Balances Circulatory Volumes and Delivers Pulsatile Flow**
Eric L Wu (Innovative Cardiovascular Engineering and Technology Laboratory, Critical Care Research Group, The Prince Charles Hospital, Brisbane, Australia / School of Medicine, The University of Queensland, Brisbane, Australia)

**O4-6 - Cardiovascular Peristalsis?: Nonaxial Peristaltic Total Occlusion As a Mechanism for Blood Propulsion**
Zack D. Frankman (Department of Biomedical Engineering, The University of Arizona, Tucson, AZ, USA)

12:00 - 13:00 Luncheon Seminar 1:

*Moderator:* Minoru Ono (The University of Tokyo, Japan)

**LS1 - EVAHEART TIP-LESS**
New Generation of LVAD Cannula  
Tadashi Motomura (EVAHEART, Inc., USA)

*Sponsored by:* Sun Medical Technology Research Corp.

13:00 - 14:05 Oral 5: Engineering 1

*Moderators:* Heinrich Schima (Medical University of Vienna, Austria)  
Shaun Gregory (Monash University, Australia)

**O5-Keynote - Usability of MCS-Systems: Methods and obstacles for its optimization**
Heinrich Schima (Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Austria)

**O5-2 - Effects of discharge angle and cross-sectional area of the impeller flow path on the hemocompatibility of a centrifugal blood pump**
Masahiro Nishida (National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan)

**O5-3 - 3D Intraventricular Flow Patterns During LVAD Support**
* - A Flow Field Analysis By Means Of High Speed Stereo-PIV - *
Henning Kroll (Berlin Heart GmbH, Research and Development, Berlin, Germany)
O5-4 - “There Are Loops, And Then There Are Loops”: Loop Design and Constituent Components Introduce Artifacts Impacting Overall System Thrombogenicity
Mengtang Li (Department of Mechanical Engineering, Vanderbilt University, USA)

O5-5 - Development of an intelligent blood pump with a self-detecting function of thrombus
Wataru Hijikata (Department of Mechanical Engineering, Tokyo Institute of Technology, Japan)

O5-6 - Experimental evaluation of a thrust bearing gap in a hydrodynamically levitated centrifugal blood pump for reduction of hemolysis
Ryo Kosaka (National Institute of Advanced Industrial Science and Technology (AIST), Japan)

14:05 - 14:35 Special Lecture 3
Moderator: Yoshiyuki Taenaka (National Cerebral and Cardiovascular Center, Japan)
SL3 - Trend of Mechanical Circulatory Support in Japan
Takashi Yamane (PhD, Emeritus Researcher, AIST (National Institute of Advanced Industrial Science and Technology), Japan)

15:00 - 16:05 Oral 6 : Clinical Application
Moderators: Georg Wieselthaler (University of California, San Francisco, USA)
Goro Matsumiya (Chiba University Graduate School of Medicine, Japan)

O6-Keynote -
Georg Wieselthaler (University of California, San Francisco, USA)

O6-2 - Clinical Outcome of Left Ventricular Assist Device for Arrhythmogenic Right Ventricular Cardiomyopathy
Sachito Minegishi (Department of Cardiac Surgery, University of Tokyo, Japan)

O6-3 - Acute in-vivo evaluation of a suture-less inflow cannula for rapid LVAD implantation
Kristy May Garrick (School of Engineering and Built Environment, Griffith University, Gold Coast, Qld, Australia / The Innovative Cardiovascular Engineering and Technology Laboratory, Critical Care Research Group, The Prince Charles Hospital, Chermside, Qld, Australia)

O6-4 - HeartMate II implantation with lower mini-sternotomy reduced postoperative bleeding and ventilatory support
Koichi Toda (Department of Cardiovascular Surgery, Osaka University, Japan)

O6-5 - Unloading strategies to optimize reverse remodeling
Bart Meyns (Department Cardiac Surgery, UZLeuven, Belgium)

O6-6 - Genetic basis of cardiomyopathy and the genotypes involved in prognosis and left ventricular reverse remodeling
Seitaro Nomura (Department of Cardiovascular Medicine, The University of Tokyo, Japan / Genome Science Division, Research Center for Advanced Science and Technology, The University of Tokyo, Japan)
16:05 - 16:35 Special Lecture 4

Moderator: James Long (INTEGRIS Baptist Medical Center, Oklahoma City, USA)

SL4 - MCS Hemocompatibility 2018: “It’s More than Just the Pump”
Flow, Shear, Design, System Implantation, Drugs and All That
Marvin J. Slepian (Departments of Medicine, Biomedical Engineering and Material Sciences and Engineering, Sarver Heart Center, University of Arizona, Tucson, Arizona USA)

16:00 - 18:00 Nurse / Coordinator Session 2
November 2, Friday

8:00 - 9:00 Oral 7 : Engineering 2

Moderators: Takashi Yamane (National Institute of Advanced Industrial Science and Technology (AIST), Japan)
               Christoph Nix (ABIOMED Europe GmbH, Germany)

O7-Keynote - Dynamic movement of the magnetically levitated impeller during pulsatile operation
Toru Masuzawa (Ibaraki University, Japan)

O7-RF2 - Tissue integration of a novel ventricular assist device cannula using advanced manufacturing
Nicole Bartnikowski (The Innovative Cardiovascular Engineering and Technology Laboratory, Critical Care Research Group, The Prince Charles Hospital, Chermside, Qld, Australia / School of Chemistry, Physics and Mechanical Engineering, Queensland University of Technology, Brisbane, Australia)

O7-RF3 - Electrical Fields Modulate Endothelialization of Mechanical Circulatory Support Interfaces - An Electroceutical Strategy for Enhanced Hemocompatibility
Kaitlyn Rose Ammann (Department of Biomedical Engineering, The University of Arizona, Tucson, AZ, USA)

O7-4 - Development of a Micro Optical Thrombus Sensor for Multi-Point and Real-Time Monitoring in Mechanical Circulatory Support Devices
Nobutomo Morita (Advanced Manufacturing Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Tosu, Japan)

O7-5 - Novel flow rate estimation method of a centrifugal blood pump using passive stabilization dynamics of magnetically levitated impeller
Shuya Shida (Graduate School of Science and Engineering, Ibaraki University, Japan)

O7-6 - The Effect of Transient Flow in Mechanical Circulatory Support
Ryan Stanfield (The University of Utah, USA / VADovations, Inc, USA)

9:00 - 10:00 Oral 8 : ECMO/ECLS

Moderators: Aly El Banayosy (INTEGRIS Baptist Medical Center, USA)
               Eisuke Tatsumi (National Cerebral and Cardiovascular Center, Japan)

O8-Keynote - Bridging to lung transplantation: Current status and challenges
Masaki Anraku (Department of Thoracic Surgery, The University of Tokyo Hospital, Japan)

O8-RF2 - Physiological responses of the circulation during ECLS A training simulator.
Marcel CM Rutten (Department of Biomedical Engineering, TU Eindhoven, The Netherlands)

O8-RF3 - Evaluation of Microcirculation in Patients on Extracorporeal Membrane Oxygenation (proECMO Study): Pilot Study in 5 Patients
Takuma Miyamoto (Cleveland Clinic, Cleveland, OH, USA)

O8-4 - Long-term in vivo testing of extracorporeal membrane oxygenation via the pulmonary artery to the left atrium as a bridge to lung transplantation
Kento J. Fukumoto (Department of Thoracic Surgery, The University of Tokyo, Japan)
O8-5 - A model of the pathological circulation under ECLS support
Marcel CM Rutten (Department of Biomedical Engineering, TU Eindhoven, The Netherlands)

O8-6 - Development Of A Compact ECMO System Consisting Of A Centrifugal Pump With Hydrodynamic Bearings And Long-term Evaluation In Animal Experiments
Nobumasa Katagiri (Department of Artificial Organs, National Cerebral and Cardiovascular Center Research Institute, Japan)

10:00 - 11:00 Oral 9 : Pediatric Ventricular Assist Device

Moderators: Toru Masuzawa (Ibaraki University, Japan)
Geoffrey Tansley (Griffith University, Australia)

O9-Keynote - Pediatric Ventricular Assist Device
Antonio Amodeo (Pediatric Hospital Bambino Gesù, Rome, Italy)

O9-2 - Current status of temporally ventricular assist device support for acute fulminant myocarditis in pediatric patients
Tomomitsu Kanaya (Department of Cardiovascular Surgery, Osaka University Graduated School of Medicine, Japan)

O9-3 - von Willebrand Factor activity:antigen ratio is a poor surrogate for multimer analysis in the detection of acquired VWS among children on ECLS devices
Shiu-Ki Rocky Hui (Department of Pathology & Immunology / Department of Pediatrics / Baylor College of Medicine / Texas Children's Hospital, USA)

O9-4 - Total Artificial Heart for Pediatric Population: Cleveland Clinic Device Update
Jamshid Karimov (Cleveland Clinic, USA)

O9-5 - Implantable ventricular assist device for patients younger than 18 years
Kan Nawata (Department of Cardiac Surgery, The University of Tokyo, Japan)

11:00 - 11:50 Oral 10 : Clinical Experience/simulation

Moderators: Bart Meyns (UZ Leuven, Belgium)
Kenji Yamazaki (Hokkaido Cardiovascular Hospital, Japan)

O10-1 - Successful Heart Transplant after Sixteen-hour ex-vivo donor heart perfusion during long distance transportation
Zhuldyz Nurmykhametova (National Research Center for Cardiac Surgery, Astana, Kazakhstan)

O10-2 - Sarcopenia as a predictor of mortality in Japanese patients undergoing left ventricular assist device implantation
Masaki Tsuji (Department of Cardiovascular Medicine, Graduate School of Medicine, The University of Tokyo, Japan)

O10-3 - Long-term outcome of HVAD left ventricular assist device- single center experience in Japan
Yuji Sakashita (Department of Cardiovascular Surgery, Osaka University Graduate School of Medicine, Japan)
O10-4 - Is it possible to insert the cannula into the left ventricle from outside of the human body for the VAD implant?
Tomoyuki Yambe (Tohoku University, Japan)

O10-5 - Aorta - V AD Outflow Graft Anastomosis Angle Significantly Impacts MCS Prothrombosis - in vitro Validation of in silico DTE Predictions
Ryan Walk (Department of Biomedical Engineering, The University of Arizona, Tucson, AZ, USA)

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12:00 - 13:00 Luncheon Seminar 2:
**Moderator:** Minoru Ono (The University of Tokyo, Japan)

LS2-: Mechanical Circulatory Support in pediatric “low weight” patients
Antonio Amodeo (Bambino Gesù, Infant and Pediatric Hospital)
*Sponsored by:* Century Medical. Inc.

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13:00 - 14:05 Oral 11: Hemocompatibility 2

**Moderators:** Marvin Slepian (The University of Arizona, USA)
Tomoyuki Yambe (Tohoku University, Japan)

O11-Keynote - Development of a clinically-relevant thrombogenicity testing method of an inflow cannula at the interface with left ventricle: Contribution to the approval of titanium-mesh in flow cannula of EVAHEART without clinical trial
Kiyotaka Iwasaki (Cooperative Major in Advanced Biomedical Sciences, Tokyo Women’s Medical University Waseda University Joint Graduate School, Waseda University, Japan / Department of Bioscience and Biomedical Engineering, Waseda University, Japan)

O11-2 - CONTINUOUS-FLOW LVAD SUPPORT ALTERS MULTIPLE ANGIOGENIC SIGNALING PEPTIDES
Samson Hennessy-Strahs (Division of Cardiovascular Surgery, Hospital of The University of Pennsylvania, USA)

O11-3 - Optimal Hemodynamics during Left Ventricular Assist Device Support are Associated with Reduced Hemocompatibility-Related Adverse Events
Teruhiko Imamura (University of Chicago Medicine, USA)

O11-4 - The effect of synchronous rotary LVAD support: from the perspective of flow induced intraventricular thrombosis
Sam Liao (Innovative Cardiovascular Engineering and Technology Lab (ICETLAB), The Prince Charles Hospital, Chermside, Australia / Institute of Health and Biomedical Innovation (IHBI), Queensland University of Technology (QUT), Kelvin Grove, Australia / Department of Cardiovascular Engineering, Institute of Applied Medical Engineering, Helmholtz Institute, RWTH Aachen University, Aachen, Germany)

O11-5 - Endothelial Cell Inflammatory Activation Enhances the Prothrombotic State of Shear-Activated Platelets: Mechanistic Implications for VAD Thrombosis?
Filippo Consolo (Anesthesia and Cardiothoracic Intensive Care - Advanced Heart Failure and Mechanical Circulatory Support Program, San Raffaele Scientific Institute, Milan, Italy / Universita Vita Salute San Raffaele, Milano, Italy)
14:05 - 14:55 Oral 12: Patient Management

**Moderators:** Cumaraswamy Sivathasan (National Heart Center, Singapore)  
Yoshikatsu Saiki (Tohoku University Graduate School of Medicine, Japan)

**O12-Keynote - Anticoagulation Quality and Frequency of INR Testing in LVAD Patients: A Correlation to Hemocompatibility Related Adverse Events and Outcomes**
Thomas Schlöglhofer (Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Austria / Ludwig Boltzmann Cluster for Cardiovascular Research, Vienna, Austria / Department of Cardiac Surgery, Medical University of Vienna, Austria)

**O12-RF2 - Multidisciplinary approach for right heart failure after left ventricular assist device implantation in a patient with restrictive cardiomyopathy**
Hitoshi Inafuku (Department of Thoracic and Cardiovascular Surgery, University of the Ryukyus, Japan)

**O12-RF3 - MAIN PREDICTORS OF RIGHT VENTRICULAR FAILURE IN PATIENTS WITH LEFT VENTRICULAR ASSIST DEVICE: SINGLE CENTER EXPERIENCE**
Saltanat Andossova (National Research Cardiac Surgery Center, Astana, Kazakhstan)

**O12-4 - Microfluidic Technology for the Development of a Point-Of-Care Diagnostic Device of Prothrombotic Platelet Function**
Filippo Consolo (Anesthesia and Cardiothoracic Intensive Care - Advanced Heart Failure and Mechanical Circulatory Program, San Raffaele Scientific Institute, Milano, Italy / Universita Vita Salute San Raffaele, Milano, Italy)

**O12-5 - Driveline fracture in patients supported with HeartMate II left ventricular assist device**
Shogo Shimada (Department of Cardiac Surgery, The University of Tokyo, Japan)

15:20 - 16:10 Oral 13: Monitoring

**Moderators:** Bojan Biocina (University of Zagreb, Croatia)  
Daniel Timms (BiVACOR, Inc., USA)

**O13-1 - The utility of thromboelastometry to monitor bivalirudin anticoagulation in children on extracorporeal circulatory support devices**
Jun Teruya (Division of Transfusion Medicine & Coagulation, Texas Children's Hospital, Baylor College of Medicine, USA)

**O13-2 - Evaluation of Hemodynamics of Aortic Insufficiency under LVAD Support**
Kei IIZUKA (Department of Cardiovascular Surgery, Tokyo Women’s Medical University, Japan)

**O13-3 - Imaging the contraction of mechanically supported *ex vivo* beating hearts**
Louis Fixsen (Department of Biomedical Engineering, Eindhoven University of Technology, The Netherlands)

**O13-4 - Mid-term Evaluation of Hemodynamics and Exercise Tolerance after Jarvik 2000 Left Ventricular Assist Device Implantation.**
Togo Iwahana (Department of Cardiovascular Medicine, Chiba University Hospital, Japan)
O13-5 - In Vitro Validation of Flowestimators for the HVAD and the HMIII
Martin Maw (Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Austria / Department of Cardiac Surgery, Medical University of Vienna, Austria / Ludwig-Boltzmann-Cluster for Cardiovascular Research, Vienna, Austria)

16:10 - 17:15 Oral 14 : Engineering 3
Moderators: Georg Wieselthaler (University of California, San Francisco, USA) 
Tomonori Tsukiya (National Cerebral and Cardiovascular Center, Japan)

O14-Keynote - An Update on the OpenHeart Project - Towards the development of an
Open-Source Online Research Platform to Improve Research Outcomes within the
International Society for Mechanical Circulatory Support
Jo Pauls (School of Medicine, The University of Queensland, Australia / Innovative Cardiovascular Engineering and Technology Laboratory (ICETLAB), Critical Care Research Group, The Prince Charles Hospital, Brisbane, Australia)

O14-2 - Development of a percutaneously deployable axial flow blood pump placed at
aortic valve position: early prototype and its performance
Eiji Okamoto (Sapporo Liberal Arts Center, Tokai University, Japan)

O14-3 - Evaluation of a Novel Short-Term Intraventricular Balloon Pump to Support
Heart Failure Patients - an In Vitro Study
Alice Catherine Boone (School of Engineering and Built Environment, Griffith University, Queensland, Australia / Innovative Cardiovascular Engineering and Technology Laboratory, Critical Care Research Group, The Prince Charles Hospital, Brisbane, Australia)

O14-4 - Effect of atrial inflow conditions on ventricular flow pattern during mechanical circulatory support
Mojgan Ghodrati (Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Austria)

O14-5 - A study on optimal pump design of a catheter-based intravascular rotary blood pump for assisting selective renal blood circulation
Hirohito Sumikura (Division of Electronic Engineering, Department of Science and Engineering, School of Science and Engineering, Tokyo Denki University, Saitama, Japan)

17:15 - 18:30 Device Update
Moderators: Cumaraswamy Sivathasan (National heart centre, Singapore) 
Geoffrey Tansley (Griffith University, Australia)

Abbott
ABIOMED, Inc.
Berlin Heart GmbH
CH Biomedical, Inc.
Evaheart, inc.
JARVIK HEART, INC.
Medtronic

18:30 - 18:40 Closing Ceremony
Poster Session

10/31 15:45 - 16:30 1A

**Moderators:** Daniel Timms (BiVACOR Inc., USA)  
Takashi Isoyama (The University of Tokyo, Japan)

**P1A-1 - The Application of AMESim and Simulink United Simulation Technology in VAD Test Equipment Design**  
Chenqi Zhu (RocketHeart Technology Co. Ltd, Tianjin, China)

**P1A-2 - The mechanical impact on blood of high and low flow rates in extracorporeal membrane oxygenation**  
Chris Hoi Houng Chan (Critical Care Research Group, The Prince Charles Hospital, Australia / Griffith University, Australia / University of Queensland, Australia / ICETLAB, Australia)

**P1A-3 - Virtual Mock Loop Study Comparing LVAD and BVAD Assistance for Systolic Heart Failure Conditions**  
Jamshid Karimov (Cleveland Clinic, USA)

**P1A-4 - Evaluation of Heartmate 3 Centrifugal Pump Performance for Right Ventricular Support in Virtual Model**  
Jamshid Karimov (Cleveland Clinic, USA)

**P1A-5 - Species Differences in fibrin metabolism for preclinical animal study for cardiovascular device**  
Toshihide Mizuno (Department of Artificial Organs, National Cerebral and Cardiovascular Center, Institute, Japan)

**P1A-6 - In vitro quantitative evaluation of platelet activation under shear stress**  
Akiko Oota-Ishigaki (National Institute of Advanced Industrial Science and Technology, Japan)

**P1A-7 - Is the ratios of VWF:RCo to VWF:Ag useful for the diagnosis of AVWS associated with LVAD ?**  
Tsuyoshi Doman (Department of Molecular and Cellular Biology, Institute of Development, Aging and Cancer, Tohoku University, Sendai, Japan)

10/31 15:45 - 16:30 1B

**Moderators:** Akira Shiose (Kyushu University, Japan)  
Takashi Nishimura (Tokyo Metropolitan Geriatric Hospital, Japan)

**P1B-1 - Extracorporeal Membrane Oxygenation program in Kazakhstan**  
Zhuldyz Nurmykhameitova (National Research Center for Cardiac Surgery, Astana, Kazakhstan)

**P1B-2 - Mechanical circulatory support for fulminant myocarditis**  
Takashi Shuto (Department of Cardiovascular Surgery, Oita University, Japan)

**P1B-3 - Relationship of vitamin D to profound cardiogenic shock in patients resuscitated from sudden cardiac arrest**  
Jin Wi (Division of Cardiology, Department of Internal Medicine, Yonsei University College of Medicine, Korea)
P1B-4 - A case of propranolol-induced refractory cardiac arrest and was successfully treated with extracorporeal cardiopulmonary resuscitation
Ryo Esumi (Department of Emergency and Disaster Medicine, University of Mie, Japan)

P1B-5 - Management of ECMO for the pediatric patients after cardiac surgery
Yosuke Kuroko (Department of Cardiovascular Surgery, Okayama University Hospital, Japan)

P1B-6 - The User Experience of VAD Wearable Systems and Components: A Systematic Literature Review
Jessica Lea Dunn (School of Architecture, Design and Planning, University of Sydney, Sydney, Australia)

11/1  8:00 - 8:45  2A
Moderators: Yoshiaki Takewa (National Cerebral and Cardiovascular Center, Japan)
            Shaun David Gregory (Monash University, Australia)

P2A-1 - Development of an Electromechanical VAD Life Cycle Testing Rig
Qinglin Fan (RocketHeart Technology Co. Ltd, China)

P2A-2 - Improving the quality of life of VAD users through interactive digital channels: A comparative content analysis
Keum Hee Kimmi Ko (School of Architecture, Design and Planning, University of Sydney, Sydney, Australia)

P2A-3 - Optimization of the ceramic plate shape in ReligaHeart® ROT pump using FEM and physical validation
Przemyslaw Kurtyka (Artificial Heart Laboratory, Zbigniew Religa Foundation of Cardiac Surgery Development, Poland)

P2A-4 - Verification method of the magnetic induction distribution using mapping to control the magnetic field regularity in contact-less CF pumps
Przemyslaw Kurtyka (Artificial Heart Laboratory, Zbigniew Religa Foundation of Cardiac Surgery Development, Poland)

P2A-5 - Applicability of Narrow Groove Theory in Conical Spiral Groove Bearing Design for Rotary Blood Pumps
Shelby A Bieritz (Department of Bioengineering, Rice University, USA / Texas Heart Institute, Houston, USA)

P2A-6 - Designing A Magnetically Suspended Blood Pump to Cope with Pump Tilting Movements in Patients Living An Active Life
Chen Chen (Artificial Organ Technology Lab, Soochow University, Suzhou, China / CH Biomedical, Inc., Suzhou, China)

P2A-7 - Hemolysis reduction for axial-flow blood pumps
Takashi Yamane (School of Engineering, Kobe University, Japan / National Institute of Advanced Industrial Science and Technology, Japan)
P2A-8 - Preclinical assessment of the miniaturized ventricular assist device for bridge to decision: chronic study in a bovine model
Junichi Shimamura (Department of Artificial Organs, National Cerebral and Cardiovascular Center Research Institute, Japan / Department of Cardiothoracic Surgery, Graduate School of Medicine, University of Tokyo, Japan)

11/1 8:00 - 8:45 2B

Moderators: Bojan Biocina (University of Zagreb, Croatia)
Hirofumi Arai (Oita University, Japan)

P2B-1 - Considerations from initial experiences of Impella in Japan
Makiko Nakamura (Second Department of Internal Medicine, University of Toyama, Japan)

P2B-2 - Our Experience with conversion of the extracorporeal VAD to the implantable LVAD
Michiko Watanabe (Department of Cardiovascular Surgery, Chiba University Hospital, Japan)

P2B-3 - The impact of implantable left ventricular assist devices (iVAD) therapy in Fukushima
Akihiro Yamamoto (Department of Cardiovascular Surgery, Fukushima Medical University, Japan)

P2B-4 - Long-term outcome of patients with durable ventricular assist device as bridge to transplantation
Masatoshi Akiyama (Division of Cardiothoracic Surgery, Tohoku University Hospital, Japan)

P2B-5 - The Heartmate II implantation for the patient with congenitally corrected transposition of the great arteries and situs inversus: a case report
Tomonori Ooka (Department of Cardiovascular and Thoracic Surgery, Hokkaido University Graduate School of Medicine, Japan)

P2B-6 - Pneumopericardium can be a sign of the occurrence of a serious infection
Tomoki Ushijima (Department of Cardiovascular Surgery, Kyushu University Hospital, Japan)

P2B-7 - The transition of driveline and exit site management in patients with left ventricular assist device
Mamoru Arakawa (Department of Cardiovascular Surgery, Satiama Medical Center, Jichi Medical University, Japan)