Scientific Program – Oral Presentations

Tuesday, August 29, 2023

AULA MAGNA	
16:30 - 18:00	**Opening Ceremony** **Welcome Address** Congress Chair: *A. Remuzzi* Mayor of Bergamo: *G. Gori* University of Bergamo Rector: *S. Cavalieri* **Presidential Address** ESAO President: *V. Weber* IFAO President: *H. Schima* **Awards Ceremony** *A. Remuzzi, V. Weber, H. Schima* SAGEResearch Award ESAO PhD Awards IFAO Transcontinental Travel Awards
18:00 - 18:45	**Plenary Lecture:** **Grand Challenges for Dialytic Kidney Replacement Therapy 2023 and Beyond** *P. Kotanko (New York, US)*
18:45 - 19:10	**Musical Performance** *Estudiantina Ensemble Bergamo*
19:10 - 21:00	**Welcome Reception and Buffet**

Wednesday, August 30, 2023

AULA CASTOLDI - 5		
8:30–10:00		**A11 - Session: Blood Damage in Artificial Organs** Chair: *U. Kertzscher, A. Khir*
8:30–8:43	O1	Ghost Blood- A Novel Fluid for Visual Monitoring of Coagulation in an Occlusion System *B. Schuermann*
8:43-8.56	O2	Hemolytic Performance of Extracorporeal Blood Pumps Using Computational Models and Patient Cohort Data *C. Blum*
8:56-9:09	O3	Hemolysis Induced by Highly Dynamic Stresses: Influence of Stress Type and Number of Repetitions in an Elongational Flow Setup *M. Lommel*
9:09-9:22	O4	Haemolysis Modelling of a Positive-Displacement Total Artificial Heart *J. Bornoff*
9:22-9:35	O5	Microfluidic Study on a Transparent Blood Model Fluid with Alginate Microspheres *V. Froese*
9:35-9:48	O6	In-Vitro Hemocompatibility Assessment of Blood Pumps Under Realistic Operating Conditions *M. Granegger*
9:48-10.00	IL	Haemolysis is a blunt end-point for blood trauma assessment *M. Simmonds*

AULA 8		
8:30–10:00		**B11 - Session: Hemodialysis and Uremic Toxins** Chair: *V. Jankowski, S Eloot*
8:30–8:45	O7	Real-Time Optical Measurement of Cardiorenal Toxin Uric Acid During Hemodialysis *J. Holmar*
8:45-9:00	O8	Effects Of Filtration on the Removal Characteristics of Dialysis Membranes with Adsorption Properties *Y. Kurihara*
9:00-9:15	O9	Anticoagulation Strategy is Associated with Bleeding And Quality of Life in Chronic Haemodialysis Patients *F. Vanommeslaeghe*
9:15-9:30	O10	Prevention of Post-Translational Modifications (Ptms) in Chronic Kidney Disease (Ckd) with Free Amino Acid Supplementation *D. Mikolajetz*
9:30-9:45	O11	Identification And Characterization of a Novel Inhibitor of Vascular Calcification: Calcification Blocking Factor *S. Bhargava*
9:45-10:00	O12	Post-Translational Modification of Apo A1 in Chronic Kidney Disease *V. Jankowski*

AULA 6		
8:30–10:00		**C11 - Symposium: Artificial Pancreas: new Challenges and Opportunities Towards fully automated and Personalized Diabetes Management** Chair*: A. Ferramosca, B. Sonzogni*
8:30–8:45	O13-K	Artificial Pancreas: From an Invasive Device to a Portable, Patient-Tailored and Adaptive Control System Ensuring Patient's Safety *C. Toffanin*
8:45-9:00	O14	Tailored Type 2 Diabetes Simulator for Optimally In Silico Testing Insulin Treatments in Target Populations *R. Visentin*
9:00-9:15	O15	An Announcement-Tree Single-/Dual-Hormone Artificial Pancreas Customizable According to the Patient's Preferences *J. Bondia*
9:15-9:30	O16	Removing the Patient from the Loop: From Hybrid to Fully Automated Insulin Delivery in Type 1 Diabetes *J. Garcia-Tirado*
9:30-9:45	O17	Coordinating Manually Actuated Control Actions with Automatic Basal Insulin Adjustments in An Artificial Pancreas for Type 1 Diabetes Treatment *S. Del Favero*
9:45-10:00	O18	Full Insulin Independence After Transplantation of Bionic Pancreatic Flaps. First Results of Preclinical Studies in Large Animals. *M. Klak*

AULA MAGNA	
10:00-10:45	**Plenary Lecture 1:** **The artificial pancreas, signals, models & control: shifting the paradigm of diabetes treatment** *C. Cobelli (Padova, Italy)*

10:45:11:15	**Coffee Break**

AULA CASTOLDI - 5

11:15-12:45		**A 12 - Corporate Symposium: New Trends and Applications in Mechanical Circulatory Support** Chair: *M. Granegger, D. Medart*
11:15-11:45	O19-K	Subpulmonary Support of Fontan Patients - From Computer Simulation to Clinical Application *S. Hansen*
11:45-12:00	IL	Opportunities and Challenges in Mechanical Circulatory Support *H. Schima*
12:00-12:15	O20	Development and Testing of the CorWave Membrane Pump *F. Cornat*
12:15-12:30	O21	Is It Time to Rethink the Role Of Chronic Animal Studies in MCS Development? *I.L. Perkins*
12:30-12:45	O22	Mechanical Support for Failing Lymphatic Function: A Conceptual Study *A. Escher*

AULA 8		
11:15-12:45		**B12 - Symposium: Artificial Kidney** Chair: *A. Santoro, M.L. Costantino*
11:15-11:45	IL-K	Treatment of chronic diseases at home *S. Pesickova*
11:45-12:00	O23	Carbon Footprint of a French Hemodialysis Facility *H. Hachad*
12:00-12:15	O24	Effect of the Particle Size of Photoactive Porous Coordination Polymers on Nitric Oxide Release *M. Fukada*
12:15-12:30	O25	Next Generation of Extracorporeal Albumin Detoxification (Ecad) Improves Surrogate Survival Biomarkers when Compared with Mars in a Randomized Trial *J. Stange*
12:30-12:45	O26	Less Microbubbles Entered the Patients Using the Venous Chamber Emboless During Haemodialysis *B. Stegmayr*

AULA 6		
11:15-12:45		**C12 - Session: Tissue Engineering I** Chair: *C.E. Campiglio, P. Baptista*
11:15-11:30	O27	Investigation of the Possibility of Substituting an Autologous Biological Heart Valve for Various Valve Diseases *Y. Takewa*
11:30-11:45	O28	An Innovative Culture System to Investigate Vascular Tissue Engineering Biomechanisms *E. Pederzani*
11:45-12:00	O29	3D-Bioprinted Bionic Pancreas as an Innovative Method of Treating and Preventing Diabetes - How far are we from Clinical Application? *M. Wszola*
12:00-12:15	O30	Development of a Testing System for The Calcification Potential of Full-Size Cellularized Biomaterials In Vitro *P. Hefer*
12:15-12:30	O31	High-Throughput Generation of Hydrogel Microdroplets for Microtissue Engineering Application *D. Mukherjee*
12:30-12:45	O32	SiRNA Delivery and Microtissue Assembly via Gelatin Microparticles for Bone Tissue Regeneration *F. Mitrach*

12:45-14:00	**Lunch**
AULA MAGNA	
13:15-14:00	**Sponsor Symposium:** **How to accelerate the development of mechanical circulatory support devices**

	M. Ahlström – Hydrix

AULA CASTOLDI - 5		
14:00-15:30		**A13 - Session: Ventricular Assist Device I** Chair: *H. Schima, F. De Gaetano*
14:00-14:15	O33	Mechanistic Insights into HF-Related Mortality Over Prolonged Heartmate 3 Support *F. Consolo*
14:15-14:30	O34	Left Atrial Decompression with the Heartmate3 in Heart Failure Patients with Preserved Ejection Fraction *X. He*
14:30-14:45	O35	Challenges in Experimental Flow Validation for Third-Generation Ventricular Assist Devices *A. Escher*
14:45-15:00	O36	Surface Roughness Modelling for Rapid-Prototyped Neovad Blades *L. Nissim*
15:00-15:15	O37	An Extra-Aortic Soft Robotic Cardiac Support Device: Patient-Specific In-Vitro and In-Vivo Evaluation *S.A. Dual*
15:15-15:30	O38	Exceeding the Limits of Current Pump Monitoring: Non-Invasive Diagnosis of Left Ventricular Unloading With the Heartmate 3 Snoopy *T. Abart*

AULA 8		
14:00-15:30		**B13 - Symposium: Wearable and Implantable Artificial Kidney** Chair: *D. Stamatialis, F. Wieringa*
14:00-14:30	IL-K	An overview of current wearable and implantable artificial kidney initiatives *B. Stegmayr*
14:30-14:50	IL	Can financial engineering create an artificial kidney? *A. Lo*
14:50-15:10	IL	Portable, wearable & implantable artificial kidneys: What membranes do we need? *D. Stamatialis*
15:10-15:30	IL	How to organize an international consortium for WAK/IAK development? *F. Wieringa*

AULA 6		
14:00-15:30		**C13 - Symposium: Advanced Biomaterials for Tissue Engineering** Chair: *N. Neves, T. Groth*
14:00-14:30	IL-K	Design of a Composite wound Dressing: Combining an Electrospun Fleece with a Free-Standing Multilayer film *T. Groth*
14:30-15:00	IL-K	Surface Functionalized Biomaterials and Nanostructures for Advanced Therapies *N. Neves*
15:00-15:15	IL	Tissue Microenvironments based on Functionalized microgels and injectable hydrogels *G. Gallego*
15:15-15:30	IL	Liposome and Lipoplex Functionalized Surface Coatings to Induce Stem Cell Differentiation *C. Wölk*

AULA CASTOLDI - 5		
15:30-16:30		**Poster Flash Talk A** Chair: *V. Weber, M. Bozzetto*
15:30-15:35	P7-FT	Optimization of a Single-Lung Transplantation Model on a Rat Model *N. Grudinin*
15:37-15:42	P8-FT	Pediatric Lung Transplantation on Extracorporeal Membrane Oxygenation Support with Peripheral Cannulation: A Single Center Experience *A. Trizzino*
15:45-15:50	P9-FT	Polyurethane Blend Membranes for Blood Oxygenation *R. Pires*
15:53-15:58	P12-FT	Comparing Wettability Properties of Microscale Surface Pattern Modifications Obtained Via 2-Photon-Polymerization

		M. Bonora
16:01-16:06	P15-FT	Impact Of Operating Conditions on Hemocompatibility-Related Adverse Events in Heartmate 3 Left Ventricular Assist Device Recipients *L. Anderl*
16:09-16:14	P17-FT	Optical Analysis of Ghost Cells Under Mechanical Hemolysis Using Fluorescence Hemolysis Detection *B.J. Schürmann*
16:17-16:22	P26-FT	In-Silico and In-Vitro Assessment of a Physiologic Control System for a Total Artificial Heart *T. Bierewirtz*
16:25-16:30	P29-FT	Multi-Objective Optimization of a Rotary Blood Pump for Fontan Patients *B. Thamsen*

AULA 8		
15:30-16:30		**Poster Flash Talk B** Chair: *G. Gallego, G. Casagrande*
15:30-15:35	P33-FT	Extracorporeal Immune Cell Therapy of Sepsis *G. Klinkmann*
15:37-15:42	P34-FT	Stabilization of the Circulating Blood Volume by Adjusting the Sodium Concentration of the Substitution Fluid In Dual Filtration Plasmapheresis. *Y. Sato*
15:45-15:50	P36-FT	A New Control Algorithm of Pressure-Controlled Independent Lung Ventilation *K. Zielinski*
15:53-15:58	P38-FT	Design of a High Fidelity Simulator And 3d Printing of the Aorta: Implications for Preprocedural Planning in Cardiovascular Interventions *I. Cestari*
16:01-16:06	P39-FT	Development And Characterization of Calcific Aortic Valve Models for Clinicians Training in Transcatheter Cardiovascular Procedures *F. Pappalardo*
16:09-16:14	P46-FT	Patient-Specific Simulator for Preoperative Planning in Cardiovascular Interventions *E. Bosoni*
16:17-16:22	P54-FT	Blood Flow Conditions and Sounds in Arteriovenous Fistula For Hemodialysis *A. Remuzzi*
16:25-16:30	P55-FT	Early Prognosis of Arteriovenous Fistula Maturation *N. Gjorgjievski*

AULA 6		
15:30-16:30		**Poster Flash Talk C** Chair: *M.L. Costatino, G. Catapano*
15:30-15:35	P68-FT	Designing Elastic Properties of 3d Printed Multimaterial Scaffolds *E. Kornfellner*
15:37-15:42	P69-FT	Addressing Challenges in 3d Modeling and Printing for Virtual and Rapid Prototyping of Devices for Substitutive Medicine and Tissue Engineering *L. De Napoli*
15:45-15:50	P73-FT	Analysis of Filtration and Backfiltration in Hollow Fiber Membrane Bioreactors *W. Kleinekofort*
15:53-15:58	P90-FT	Short Term Release Behaviour of Model Pharmaceuticals from Hydrogel Beads for the Development of Artificial Blood *T. Bode*
16:01-16:06	P92-FT	The Wettability Properties of Microtopography on Polycaprolactone *M. Vostatek*
16:09-16:14	P96-FT	Development of a Simple Organ Perfusion Setup for Investigating the Effect of Therapeutic Methods on Marginal Organs *A. Körtge*
16:17-16:22	P97-FT	Split Renal Function, Renal Vascular Variations and Donor Preferences: Challenge and Crossroads Towards Right Kidney Choice *S. Filipovski*

16:25-16:30	P98-FT	Learning Curve for Robotic Mitral Valve Repair Surgery in a Bergamo Hospital During the Covid-19 Pandemic: A Retrospective Study *E. Lanzarone*

16:30-17:30	**Poster Session I** Coffee Break

AULA MAGNA	
17:30-18:15	**Plenary Lecture:** **The Future of Organ Replacement Therapy: Will Xenograft Eventually Help Clinical Practices?** *G. Remuzzi (Bergamo, Italy)*

Thursday, August 31, 2023

AULA CASTOLDI - 5		
8:30–10:00		**A21 - Symposium: Rotary Blood Pump Design** Chair: *S. Jansen, M. Granegger*
8:30–9:00	IL-K	Low Flows in Blood Pumps: Isolated Abuse or Clinical Reality *S. Olia*
9:00-9:15	O39	Numerical Evaluation of a Novel Two-Stage Ventricular Assist Device for Pediatric Patients *S. Linnemeier*
9:15-9:30	O40	In-Silico Investigation of Gap Size Impact on Rotary Blood Pump Performance and Hemocompatibility In Low Flow Rate Operation Conditions *L. Fischer*
9:30-9:45	O41	Towards an Adjustable Blood Pump for Wide-Range Operation – In-Vitro Results of Performance and Hydraulic Efficiency *S. Jansen*
9:45-10:00	O42	Design of the Neovad Flow Path Using Computational Fluid Dynamics and Coupled 0D-3D Modelling *K. Fraser*

AULA 8		
8:30–10:00		**B21 - Symposium: Vascular Access for Hemodialysis** Chair: *A. Remuzzi, K. Valen-Sendstad*
8:30–9:00	IL-K	New advances in arteriovenous fistula surgery: are new technologies improving clinical outcome? *M. Tozzi*
9:00-9:15	O43	Wall Vibrations in the Arteriovenous Fistula for Hemodialysis: A Novel Mechanobiological Stimulus? *M. Bozzetto*
9:15-9:30	O44	The Design of a Dynamic Arteriovenous Fistula, a Vascular Access only when the Patient Needs It *N.A. White*
9:30-9:45	O45	The Future of Vascular Access Surveillance: Acoustic Analysis of Arteriovenous Fistula Sounds *S. Poloni*
9:45-10:00	O46	Evaluation of The Vascular Access Function by Sound Analysis Using a Pseudo-Vessel Stenosis Model with Different Stenosis Diameters and Lengths *K. Sasaki*

AULA 6		
8:30–10:00		**C21 - Symposium: European Activities for 3D Printing in Hospitals** Chair: *F. Moscato, A. Tel*
8:30–9:00	IL-K	3D Printing within European Hospitals: what are the challenges, what are the opportunities? *F. Moscato*

9:00-9:15	IL	Preoperative and intraoperative use of 3D technology in craniomaxillofacial applications *A.Tel*
9:15-9:30	IL	3D printing from pre-operative planning to surgical simulation: materials and technologies to reach mechanical fidelity *S. Marconi*
9:30-9:45	IL	3D models for patient communication: an overlooked application? *G. Biglino*
9:45-10:00	IL	3D printed cranial implants: knowing and applying the rules beyond engineering *D. Seiler*

AULA MAGNA	
10:00-10:45	**Plenary Lecture:** **Conformable active devices for cardiorespiratory applications** *H. Roche (Cambridge, US)*

10:45:11:15	Coffee Break **IJAO Editorial Board**

AULA CASTOLDI - 5		
11:15-12:45		**A22 - Session: Extracorporeal Life Support** Chair: *F. De Gaetano, E. Cutrì*
11:15-11:30	O47	Can a Dialyzer Expedite Extracorporeal Gas Exchange? *F. Mouzakis*
11:30-11:45	O48	Umbilical Cord Cannulation Setup for ECMO Cannulation *J. Heyer*
11:45-12:00	O49	A Hybrid In Silico – In Vitro Cardiorespiratory Simulator for Improved Extracorporeal Membrane Oxygenation Support *L. Fresiello*
12:00-12:15	O50	A Novel Gas-Exchange-Area-Adjustable Oxygenator for Extremely Preterm Infants *F. Schubert*
12:15-12:30	O51	Fluid Dynamics Analysis Through Numerical Simulation of Extracorporeal Membrane Oxygenation *A. Ruggeri*
12:30-12:45	O52	Endospray: Development of an Endothelialized Oxygenator Model for Long-Term Clinical Application *A. Singh*

AULA 8		
11:15-12:45		**B22 - Symposium: Theoretical Models in Dialysis** Chair: *G. Casagrande, M.L. Costantino*
11:15-11:45	IL-K	Predicting Outcomes in Chronic Dialysis: the Clinical Perspective *A.Bellasi*
11:45-12:00	IL	Dialysis Observational Databases as a Resource to Feed Theoretical Models and Answer Different Research Questions Using Existing Data *G. Casagrande*
12:00-12:15	IL	Modeling of Mass Transport in Hemodialysis and Peritoneal Dialysis. What is Real Clinical Portability? *J. Waniewski*
12:15-12:30	O53	Optimization of Vancomycin Dosing in Patients on Chronic High-FLux Hemodialysis *S. Eloot*
12:30-12:45	O54	H^+ Mobilization Description to Improve the Accuracy of a Patient-specific Model for the Prediction of Solutes'' Exchanges During Hemodialysis *C. Balsamello*

AULA 6	
11:15-12:45	**C22 - Session: Tissue Engineering II** Chair: *D. Stamatialis, E. Jacchetti*

11:15-11:30	O55	Effect of the In Vitro Exposure of Endothelial Cells to Mechanical Vibrations *E. Carrara*
11:30-11:45	O56	Physical and Augmented Patient-Specific Simulators for the Training of Unruptured Intracranial Aneurysm Clipping *L. Civilla*
11:45-12:00	O57	Development of an Integrated In Vitro-In Silico Model to Predict the Interaction of Immune Cells with Solid Cancers *P. Ritter*
12:00-12:15	O58	Durability Testing of Woven Scaffolds for A New Generation of Artificial Heart Valve Leaflets *T. Schmitz-Rode*
12:15-12:30	O59	First Analysis of Dural Fibroblasts and Stem Cells Monoculture on Electrospun Scaffolds with Different Compositions for Meningeal Tissue Engineering *J. Tosiani*
12:30-12:45	O60	Assembling Catalytic Nanocompartments into Artificial Signaling Cascades *V. Maffeis*

12:45-14:00		**Lunch**
AULA MAGNA		
13:15-14:00		**Sponsor Symposium: 3D-bioprinted bionic pancreas as an innovative method of treating and preventing diabetes: how to choose proper biomaterials for successful bioprinting?** *M. WSZOLA, Polbionica*

AULA CASTOLDI - 5		
14:00-15:30		**A23 - Joint EuroELSO Symposium: Simulation and Artificial Intelligence in ECLS** Chair: *S. Sonntag, J. Swol*
14:00-14:30	IL-K	Edutainment and gamification in extracorporeal devices – facts and fiction *J. Swol*
14:30-14:45	IL	Visualization of Artificial Lung – Current Developments *J. Arens*
14:45-15:00	IL	Blood Flow Visualization – Engineers View Point *M. Neidlin*
15:00-15:15	IL	Blood Flow Visualization – Clinicians View Point *M. Belliato*
15:15-15:30	IL	In Vivo, In Vitro, In Silico – Which One for which Purpose *L. Fresiello*

AULA 8		
14:00-15:30		**B23 - Session: Modelling and Devices** Chair: *C. Legallais, A. Escher*
14:00-14:15	O61	Urinary Bladder Volume Monitoring with Implantable Sensors *F. Semproni*
14:15-14:30	O62	Smartphone-Based Particle Image Velocimetry and Particle Tracking Velocimetry for In Vitro Characterization of Cardiovascular Flows *B. Griffo*
14:30-14:45	O63	Functional Polymeric Models of Atrioventricular Valves for Clinicians Training *E. Salurso*
14:45-15:00	O64	Description of Direction Dependent Gas Transfer in Oxygenators *J. Focke*
15:00-15:15	O65	Preliminary Assessment of an Innovative Aortic Valve Decalcification Device In Ex Vivo Human Model *F. Perico*
15:15-15:30	O66	Inter-Model and Inter-Modality Analysis of Left Ventricular Hemodynamics: Comparative Study of CFD Approaches, Echocardiographic and MRI Data *J. Korte*

AULA 6

14:00-15:30		**C23 - Symposium: Albumin, Scientific and Clinical Advances on a Versatile Protein** Chair: *G. Klinkmann, J. Vienken*
14:00-14:30	O67-K	The Role of Albumin´S Binding Capacity In Vivo and In Vitro *J. Vienken*
14:30-14:45	IL	Consequences of Purified Albumin in Liver Failure Therapy *J. Stange*
14:45-15:00	IL	Adsorber Efficiency Depends on Albumin Binding *J. Hartmann*
15:00-15:15	O68	The Albumin-Functionality-Test (AFT) as a New Valuable Tool to Assess Human Albumin Function in Patients with Liver and Kidney Disease *K. Waterstradt*
15:15-15:30	O69	Aspects of Albumin Function in Clinical Application *G. Klinkmann*

15:30-17:00	**Coffee Break** **Poster Session II**

AULA CASTOLDI - 5		
17:00-18:00		**A24 - Session: Ventricular Assist Device II** Chair: *F. Moscato, E. Cutrì*
17:00-17:15	O70	Investigation of a Prototype for a Pulsatile Mechanical Circulatory Support System for Right Heart Failure Situations in a Large Animal Study *S.R. Knigge*
17:15-17:30	O71	Translatability of Anatomical Compliance in Virtual Fitting to Large Animal Trials - Challenges in Cavopulmonary Assist Device Design *B. Karner*
17:30-17:45	O72	Platelet MicroRNA Profile in Patients With Lvad: A New Marker to Predict Bleeding Events? *F. Consolo*
17:45-18:00	O73	Acute In-Vivo Evaluation of a Double-Outflow Pump for Cavopulmonary Support *A. Escher*

AULA 8		
17:00-18:00		**B24 - Session: New Models for Biological Applications** Chair: *G. Catapano, E. Jacchetti*
17:00-17:15	O74	Development of a dECM-Based Hydrogel for the Production of Stable and Functional Artificial Pancreatic Islets Produced by the Ink-Jet Method *M. Klak*
17:15-17:30	O75	Influence of Electrically Charged Poly (Vinylidene Fluoride) Substrates on Human Bone Marrow Mesenchymal Stem Cells Response *J.L. Gómez Ribelles*
17:30-17:45	O76	Development of a Simple and Short-Term Decellularization Procedure for In Vivo Allogeneic Tissue-Engineered Vascular Grafts *T. Gondai*
17:45-18:00	O77	Polyzwitterionic Coating of Porous Adsorbents for Therapeutic Apheresis *V. Semak*

AULA 6		
17:00-18:00		**C24 - Session: Organ-on-Chip** Chair: *C.E. Campiglio, E. Pederzani*
17:00-17:15	O78	Investigation of Oleic Acid, Palmitic Acid and their Mixture on the Development of Hepatic Steatosis Using Liver-On-Chip Technology *L. Morisseau*
17:15-17:30	O79	Design and Validation of a Device for High-Throughput Drug Screening on Patient-Derived Organoids 3D Cultures *E. Bianchi*
17:30-17:45	O80	Mechanical and Biochemical Challenges in a Novel Dynamic Bioreactor for Ovarian Cortical Tissue Culture

		G. Serratore
17:45-18:00	O81	Verification of a Novel Platform Technology for the Isolation of Rare Cells *P.F. Geus*

18:00-19:00	**AULA 5: ESAO General Assembly**

20:30-23:00	**Social Program – Gala Dinner**

Friday, September 1, 2023

AULA CASTOLDI - 5		
8:30–10:00		**A31 - Symposium: Computational Fluid Dynamics** Chair: *A. Remuzzi, M. Bozzetto*
8:30–9:00	IL-K	CFD of Complicated Blood Flow Dynamics: The Good, the Bad, and the Ugly *D. Steinman*
9:00-9:15	O82	A Longitudinal Study in a Patient-Specific AVF: Vascular Remodeling as a Protective Mechanism for Flow Stabilization? *L. Soliveri*
9:15-9:30	O83	Animal-Based CFD Analysis of Hemodynamics in Pulmonary Artery with an Implanted Pressure Sensor *L. Goubergrits*
9:30-9:45	O84	Image-Based Simulation of Left Ventricular Hemodynamics: A Numerical Framework Towards Clinical Feasibility *K. Vellguth*
9:45-10:00	O85	Assessing the Hemodynamic Effects of Bypass Surgery on Giant Intracranial Aneurysms Using Fluid-Structure Interaction Simulations *P. Reorowicz*

AULA 8		
8:30–10:00		**B31 - Symposium: Big Data and CKD** Chair: *J. Jankowski, E. Lanzarone*
8:30–9:00	IL-K	Cost Action "PerMedik" *J. Jankowski*
9:00-9:20	IL	Biobanking, Metadata and Data *G. Glorieux*
9:20-9:40	IL	Database for Big Data CKD Analysis *J. Schanstra*
9:40-10:00	IL	Managing and Integrating Big Data from Multiple Sources: Normalization, Harmonization, Protection and Federated Analysis *R. Stojanov*

AULA 6		
8:30–10:00		**C31 - Symposium: A New Technology as a Booster for Transplantation** Chair: *G. Castellano, M. Cardillo*
8:30–9:00	IL-K	Organ preservation in the field of liver transplantation *M. Colledan*
9:00-9:15	IL	Hypothermic machine perfusion of kidneys from marginal donors: the Bergamo experience *A. Perego*
9:15-9:30	IL	Ex Vivo Lung Perfusion: Clinical Results *A. Costamagna*
9:30-9:45	IL	The role of inflammation and the potentiality of its treatment during ex-situ liver perfusion *D. Ghinolfi*
9:45-10:00	IL	Organ Preservation in Italy: an update *M. Cardillo*

AULA MAGNA	
10:00-10:20 10:20-10:45	**Plenary Lecture:** *Chair: A. Remuzzi* **EU Regulatory framework on medical device regulation: state of play on the implementation** *M. Gabrielli Cossellu (Bruxelles, BE)* **Opportunities and challenges for medical devices, from conception to market** *F. Pizzutilo (Milano, Italy)*

10:45-11:15	**Coffee Break**

AULA CASTOLDI - 5		
11:15-12:45		**A32 - Awards Session** Chair: U. Steinseifer, V. Weber
11:15-11:45	1	80 years of hemodialysis
11:45-12:00	2	Gold ESAO PhD Award 2023
12:00-12:15	3	ESAO SAGE Awards 2023
12:15-12:30	4	yESAO Exchange awards
12:30-12:45	5	yESAO Exchange awards

AULA 8		
11:15-12:45		**B32 - Session: Organ Preservation, Medical Device Regulation and Robotic Surgery** Chair: *M.L. Costantino, E. Lanzarone*
11:15-11:30	O86	Bio-Electrical Markers of Cardiac Function for Donor Hearts on Normothermic Machine Perfusion *J.H. Amesz*
11:30-11:45	O87	Liver Donation after Circulatory Death with Very Prolonged Warm Ischemia: A Pilot Experience of Abdominal Normothermic Regional Perfusion Alone *S. Camagni*
11:45-12:00	O88	Analysis of the Effects of the Aortic Conduit Geometry and Mechanical Behaviour on Heart Valves Prostheses Test Bench Characterisation *F. De Gaetano*
12:00-12:15	O89	De-Risking Medical Device Development: on the Way of Becoming the First Fully Digital Cro by Using Digital Patient Twins *S. Sonntag*
12:15-12:30	O90	Quick and Reliable Test to Screen Toxicity Of Materials For Tissue and Cell Engineering and Regenerative Medicine *V. De Gregorio*
12:30-12:45	O91	A Retrospective Study for Cost-Benefit Comparison of Robotic and Minimally Invasive Surgery for Mitral Valve Repair *E. Lanzarone*

AULA 6		
11:15-12:45		**C32 - Session: Tissue Engineering III** Chair: *C.E. Campiglio, C Conci*
11:15-11:30	O92	Novel Therapeutic Approach for Osteoarthritis Based on an Injectable Glycosaminoglycan for Viscosupplementation with Chondroprotective Effect *G. Vilariño-Feltrer*
11:30-11:45	O93	Enhancing Printability of Hydrogels Based on Methacrylated Biopolymers by Pre-Crosslinking Approach *S.Domanski*
11:45-12:00	O94	Validation of a Microgel-Based In Vitro 3D Bone Marrow Model for Multiple Myeloma *M.I. García-Briega*

12:15-12:30	O95	Towards Artificial Blood: Rheological Characterization of Hydrogel Beads as Artificial Erythrocytes for Multiphase Blood Flow Measurements *G. Hentschel*
12:30-12:45	O96	Human Dental Pulp Stem Cells (hDPSCs) Increase Vascularization of 3D-PCL Scaffolds. *L. Milian*

AULA MAGNA	
12:45-13:30	**Closing Ceremony** IFAO Awards *and* IFAO best oral presentation awards: *H. Schima, T. Groth* ESAO-IFAO23 best poster awards: *S. Jansen* **Closing remarks:** *A. Remuzzi, U. Steinseifer*

13:30-14:30	**Farwell Lunch**

Scientific Program – Poster Session 1 and 2

Extracorporeal Life Support and Artificial Lung

P1 Assessment of Flow Distribution in Hollow Fiber and 3d Tpms Oxygenator Membranes Using Time Resolved Contrast Enhanced Computed Tomography
K.P. Barbian

P2 Development of an Aggressive Therapy to Administer Drugs Directly into the Trachea to Improve Survival and Achieve Early Weaning of Patients on ECMO
Y. Inoue

P3 Endoxy in Flame: Endothelial and Immune Cell Interactions During Biohybrid Lung Application
M. Cheremkhina

P4 Evaluation of Arterial and Venous Cannulae Performance in Simulated Pulsatile Pediatric ECMO Circuit
L. Ferrari

P5 How the Assembly of Hollow-Fibre Bundles Affects the Microstructure of an Artificial Lung: A Combined Structural And Fluid Dynamics Study
G. Poletti

P6 Increasing Oxygenation Using Microspheres - A Conceptual Study
B. Franke

P7-FT Optimization of a Single-Lung Transplantation Model on a Rat Model
N. Grudinin

P8-FT Pediatric Lung Transplantation on Extracorporeal Membrane Oxygenation Support with Peripheral Cannulation: a Single Center Experience
A. Trizzino

P9-FT Polyurethane Blend Membranes for Blood Oxygenation
R. Pires

Blood Damage in Artificial Organs

P10 A Method Of Preventing Blood Volume Decrease due to High Gas Flow Rate During ECMO Hemocompatibility Evaluation
W. Ge

P11 Assessing Lagrangian Hemolysis Models: Application to FDA Nozzle Benchmark
I. Guidetti

P12-FT Comparing Wettability Properties of Microscale Surface Pattern Modifications Obtained via 2-Photon-Polymerization
M. Bonora

P13 Dynamic In Vitro Calcification of Bovine Pericardium Patches
J.F. Drexler

P14 Impact Of Connector Design on In Vitro Hemolysis Testing Using the Bpx-80® Continuous-Flow Pump
S.F. Zaman

P15-FT Impact Of Operating Conditions on Hemocompatibility-Related Adverse Events in Heartmate 3 Left Ventricular Assist Device Recipients
L. Anderl

P16 Multispecies, Multiscale Modelling of Thrombosis Potential in Blood Contacting Medical Devices
K. Fraser

P17-FT Optical Analysis of Ghost Cells Under Mechanical Hemolysis Using Fluorescence Hemolysis Detection
B.J. Schürmann

P18 Investigation of Platelet Deposition on Titanium With Different Hard Material Coatings And Roughness Values In A Flow Chamber
I. Esslinger

Ventricular Assist Device

P19 Development of a Pediatric Centrifugal Blood Pump: Theoretical and Experimental Results
I. Cestari

P20 Brushless Speed Control for a Novel Brazilian Axial Ventricular Assist Device
A. Cavalheiro

P21 Centrifugal Pump Development for ECMO Systems
A. Kuleshov

P22 Design and Development of an Implantable Intra-Ventricular Balloon Pump
T. Sing

P23 Development and Validation of a Mock Circulatory Loop With Baroreflex Response
F. Cappon

P24 Development of a Generic and Commercially Translatable Motor Controller and Driver for Mechanical Circulatory Support Devices: Benchtop to Bedside
S. Liao

P25 Development of an Impedance Based Non-Invasive and Pulsatile RVAD
A. Khir

P26-FT In-Silico and In-Vitro Assessment of a Physiologic Control System for a Total Artificial Heart
T. Bierewirtz

P27 KTAH: Design and Simulation of a Peristaltic Total Artificial Heart
A. Candela Celdrán

P28 Mavis Total Artificial Heart
R. Gatman

P29-FT Multi-Objective Optimization of a Rotary Blood Pump for Fontan Patients
B. Thamsen

P30 Numerical Performance Evaluation of Hydrodynamic Bearing For a Novel Total Artificial Heart - The Shuttlepump
K. Narayanaswamy

P31 The Effect of Donor Variability and Haemodilution on In Vitro Haemolysis Testing
C. Sargent

Apheresis and Adsorption

P32 Enterorrhagia Presenting In Patient With Granulomatosis With Polyangitis - A Case Report
Z. Shterjova- Markovska

P33-FT Extracorporeal Immune Cell Therapy of Sepsis
G. Klinkmann

P34-FT Stabilization of the Circulating Blood Volume by Adjusting the Sodium Concentration of the Substitution Fluid In Dual Filtration Plasmapheresis.
Y. Sato

Modelling in Artificial Organs

P35 A Complex Measurement System For Acquisition Of Data Required In Modeling of Cardiopulmonary System Support And Treatment
A.M.Stecka

P36-FT A New Control Algorithm of Pressure-Controlled Independent Lung Ventilation
K. Zielinski

P37 Construction And Manufacturing of an MRI-Ready Experimental Setup And Phantom Heart Model
M. Wiegand

P38-FT Design of a High Fidelity Simulator And 3D Printing of the Aorta: Implications for Preprocedural Planning in Cardiovascular Interventions
I. Cestari

P39-FT Development And Characterization of Calcific Aortic Valve Models for Clinicians Training in Transcatheter Cardiovascular Procedures
F. Pappalardo

P40 Development of A Method For Non-Invasive Blood Pressure Measurement At The Cheek
S. Essam

P41 Fluid-Structure Interaction Simulation Mimicking Experimental Opening of A Bioprosthetic Bovine Aortic Valve Under Steady-State Flow Conditions
B. Riebartsch

P42 Hemodynamic Rupture Risk Parameters For Intracranial Aneurysms and Uncertainty
F. Hellmeier

P43 Hydrodynamic Behavior Of Vascular Stenoses
G. Choirot

P44 Mechanistic Interpretation Of Icodextrin Osmotic Pressure During Peritoneal Dialysis
J. Waniewski

P45 Modeling Radial-FTlow Packed Bed Bioreactors (Rpbbs) For Long-Bone Tissue Engineering: The Role Of External Resistance To Solute Transport
G. Morrone

P46-FT Patient-Specific Simulator for Preoperative Planning in Cardiovascular Interventions
E. Bosoni

P47 Possible Predictors of Cerebrovascular Accidents In Paediatric Patients With Phaces Syndrome: In-Silico Investigations
Z. Tyfa

P48 Proof of Concept For Design and Development of a Soft Biomimetic Ventricle
F. Osouli

P49 Renal Replacement Therapies Options for Hyperkalemic Cardiocirculatory Arrest
M. Pietribiasi

P50 The Hybrid Cardiovascular Simulator to Study Valvular Diseases
K. Zielinski

P51 Virtual Treatment Planning and Outcome Prediction for Patients With Complex Univentricular Physiology
A. Schlief

P52 A Compliant 4D In Vitro Model Of A Left Ventricle To Test Mechanical Circulatory Support Systems
M. Rocchi

Hemodialysis and Uremic Toxins

P53 A Two-Compartment Experimental Model Capable Of Evaluating The Performance of Adsorption-Based Blood Purification
T. Sekiguchi

P54-FT Blood Flow Conditions and Sounds in Arteriovenous Fistula For Hemodialysis
S. Poloni

P55-FT Early Prognosis of Arteriovenous Fistula Maturation
N. Gjorgjievski

P56 Evaluation of the Solute Removal Performance And Biocompatibility of a Reused Dialyzer
T. Ota

P57 Intradialitic infusion of dialysate bolus for the estimation of absolute blood volume
J. Waniewski

P58 In-Vitro Evaluation Of The Effects Of Urokinase Coating Of Indwelling Catheters On The Risk Of Thrombus Formation On The Surface Of The Catheter
Y. Lino

P59 In-Vitro Evaluation Of The Solute Removal Performance Of The Hemodiafilter Clearum Hsf
Y. Kato

P60 Neurological Disorders in Children Treated By Continuous Hemodialysis for Inherited Metabolic Diseases

K. Otsuka

P61 Prediction, Incidence And Outcome of Acute Kidney Injury in Covid-19 Hospitalised Patients
A. Canevska Taneska

P62 Thin Films With Competitive Binding Surfaces for Enhanced Removal Of Protein-Bound Uremic Toxins
F. SC Rodrigues

P63 Treatment With High Cut Off Membranes In Long Hemodialysis Sessions In Patients With Multiple Myeloma: Our Experience
Z. Shterjova- Markovska

P64 Two Years Kidney Function Decline Predicting Factors In Living Kidney Transplantation Donors
L. Trajceska

Organ-on-chip

P65 A Novel in Vitro Model To Apply Controlled Multidirectional Hydrodynamic Stimuli on Human Endothelial Cells
E. Pederzani

P66 Analyte Sensors For Biological Fluid Monitoring
S. Sneha

P67 Organs-on-chip with an intended medical purpose: regulatory issues
G. D'Avenio

Tissue Engineering and Biofabrication

P68-FT Designing Elastic Properties of 3D Printed Multimaterial Scaffolds
E. Kornfellner

P69-FT Addressing Challenges in 3D Modeling and Printing for Virtual and Rapid Prototyping of Devices for Substitutive Medicine and Tissue Engineering
L. De Napoli

P70 Determination of Saliva Content In Aerosols Released by Dental Procedures
T. Rese

P71 3D Printable Hydrogels Of Hyaluronic Acid And Gelatin Based On Enzymatic Crosslinking.
G. Gallego Ferrer

P72 A System for Automatic Mixing of Two Compositions of Culture Media and Medium Exchange in The Artificial Blood Vessel Model
P. Ladyzynski

P73-FT Analysis of Filtration and Backfiltration in Hollow Fiber Membrane Bioreactors
W. Kleinekofort

P74 Application Of NMR Spectroscopy to Monitor Metabolic Profiles of Endothelial Cells Cultured in Vitro
P. Ladyzynski

P75 Biomaterials Used for Clinical 3D Bioprinting of Bionic Organs With a Flow System: Assessment of Hemocompatibility
K. Wozniak

P76 Construction of the Model of Biologically Active Function Block of Improved Bal Devices
M. Jakubowska

P77 Development of Lipoplex-Loaded Surface Coatings for Contact-Triggered Transfection
M. Krabbes

P78 Electrospun PCL and PLA Scaffolds for Tissue Engineering for Hypothermic Storage
S. Barker

P79 Evaluation of Beta Cell Viability And Functionality Depending on DECM Concentration In Bioink.

M. Klak

P80 Dedifferentiated Human Hepatocytes - Cells Characterization
M. Wisniewska

P81 Gelatin-Hyaluronic Acid Scaffolds for the Treatment of Acute Liver Failure
L. Tolosa

P82 In Pursuit of Biodegradable Alternatives to Silicone For Endothelial Tissue Regeneration of The Digestive Tract
R. Martín-Cabezuelo

P83 Liver Bio-constructs Created with Ink-Jet Technology For Testing Drug Activity and Toxicity.
M. Popis

P84 Manufacturing of PLLA/PVA Electrospun Membranes Using Green Solvents for Ocular Autonomous Drug Delivery System
R. Martín-Cabezuelo

P85 Multipotency and Osteogenic Differentiation of Human Bone Marrow MSC Cultured on Protein or Polysacharide Functionalized Supports.
J.L. Gómez Ribelles

P86 Non-Woven Electrospun Scaffolds with Continuous Gradient from Honeycomb-Like to Aligned Structures for Osteotendinous Junction Tissue Engineering
N. Rivoallan

P87 Optimization of Electro-Spinning Process for Production of Small Tubular Structures with High Fibre Yield and Stable Properties
C. Sandhoff

P88 Overcoming Photoinitiator Limitations. Self-Crosslinking Material for Bioprinting Application.
A. Zakrzewska

P89 Quantitative Analysis of Liver-Related Gene Expression Levels in Human Hepatocellular Carcinoma Cells and in their Genetically Modified Counterparts
A. Wencel

P90-FT Short Term Release Behaviour of Model Pharmaceuticals from Hydrogel Beads for the Development of Artificial Blood
T. Bode

P91 Surface Modification of A Titanium Alloy: Effects On The Adhesion Of A Polymer-Based Coating

M. Sanguedolce

P92-FT The Wettability Properties of Microtopography on Polycaprolactone
M. Vostatek

P93 Tubular Scaffolds With Reduced Surgical Porosity for Tissue-Engineered Constuctions of Small Diameter Blood Vessels
E. Nemets

P94 Chondrogenic Differentiation Of Mscs From Various Sources During Cultivation on Matrix from Decellularized Porcine Articular Cartilage
A. Kirillova

P95 Morphological Characterization Of Human Lung Cancer Organoids Cultured In Type I Collagen Hydrogels. A Histological Approach
I. Monleon

Organ preservation for transplantation

P96-FT Development of a Simple Organ Perfusion Setup for Investigating the Effect of Therapeutic Methods on Marginal Organs
A. Körtge

P97-FT Split Renal Function, Renal Vascular Variations and Donor Preferences: Challenge and Crossroads Towards Right Kidney Choice
S. Filipovski

Robotic Surgery

P98-FT Learning Curve for Robotic Mitral Valve Repair Surgery in a Bergamo Hospital During the Covid-19 Pandemic: A Retrospective Study