ISACB 19TH BIENNIAL MEETING VIENNA 2024

SCIENTIFIC PROGRAM

Saturday, 5th October 2024

Session #1: Omics Technologies in Applied Cardiovascular Biology
2:00-3:30 pm

Chairs:

Craig J. GOERGEN, Purdue University, USA
Elena AIKAWA, Brigham and Women's Hospital, Harvard Medical School, Boston, USA
Cynthia ST. HILAIRE, University of Pittsburgh, USA

Invited talks:

Proteomics Strategies to Identify New Diagnostic and Therapeutic Targets
Manuel MAYR, Imperial College London, UK (20+3min)

Key molecular signatures of unstable atherosclerosis illuminated by multi-omics integrations from a large biobank
Ljubica MATIC, Karolinska Institute, Sweden (20+3min)

Proteomics of Cardiovascular and Heart Valve Diseases: Changing Dogmas, Establishing New Concepts, and Facilitating Drug Target Discovery
Sasha A. SINGH, Harvard Medical School (20+3min)

Submitted abstracts:

Y chromosome linked UTY modulates sex differences in valvular fibroblast methylation in response to nanoscale extracellular matrix cues
Brian AGUADO, University of California, San Diego, USA (8+2min)

In vitro models of acute and chronic cardiac injury: characterization and differences in the cardiac troponin I and T release
Giulia MILAN, University of Basel, Switzerland (8+2min)

COFFEE BREAK (come and go during the 2 sessions)

Session #2: Pre-clinical Novelties in Vascular Tissue Engineering (ISVTE session)
3:30-5:00 pm

Chairs:
Christopher BREUER, Ohio State University College of Medicine, USA
Deling KONG, Nankai University, Tianjin, China
Timothy PENNEL, University of Cape Town, South Africa
Mackenzie TURNER, Nationwide Children's Hospital, USA

Invited talks:
Coatings for Vascular Grafts
Beat H. WALPOTH, University of Geneva, Switzerland (20+3min)

An electronic vascular graft based on cell sheet rolling technology
Xingyu JIANG, Southern University of Science and Technology China (15+2min)

Recent advances in the preclinical evaluation of completely biological vascular grafts woven from threads of Cell-Assembled extracellular Matrix (CAM)
Nicolas L'HEUREUX, Bordeaux University, France (10+2min)

Engineered vascular grafts exhibiting somatic growth in lambs
Robert TRANQUILLO, University of Minnesota, USA (10+2min)

Submitted abstracts:

A Balancing Act: Platelets as the Initiators of Both TEVG Neotissue Formation and Stenosis
Mackenzie TURNER, Nationwide Children's Hospital, USA (8+2min)

XABG: A Restorative Polymeric Coronary Artery Bypass Conduit
Martijn COX, Xeltis BV, Netherlands (8+2min)

Tailored Endothelialization Accelerates Remodeling of Small-diameter Vascular Grafts
Jianglin WANG, Huazhong University of Science and Technology, China (8+2min)

Sunday, 6th October 2024
Official Welcome to the 19th ISACB Meeting
8:00-8:15 am

Session #3: Dr. Allan Callow Young Investigator Award session (Rapid Fire)
8:15-9:00 am

Chairs:

Craig J. GOERGEN, Purdue University, USA
Giovanni FERRARI, Columbia University, USA
Merle KREBBER, University Medical Center Utrecht, The Netherlands

Novel Surgical Model of Thoracic Aortic Aneurysm Mediated by Vasa Vasorum Inhibition
Bryant FISHER, University of Pittsburgh Medical Center, USA (5+1min)

PCSK9 inhibition promotes intraplaque angiogenesis in accelerated atherosclerosis independent of cholesterol
Vincent SIER, UNIVERSITY LEIDEN, THE NETHERLANDS (5+1min)

First long-term preclinical evaluation of a fully biological, human, woven vascular graft
Diane POTART, Bordeaux, France (5+1min)

Reverse remodeling of the left ventricle during recovery from pressure overload in a refined murine model
Elnaz GHAJAR-RAHIMI, Purdue University, USA (5+1min)

Assessing Growth Adaptation of the IRIS Transcatheter Pulmonary Valve for Pediatric Patients: Histopathological Analysis after Six Months
Nnaoma AGWU, University of California, Irvine, USA (5+1min)

The endomembrane homeostasis controls the phenotype switching of vascular smooth muscle cells
Nicolas Hense, Aachen, Germany (5+1min)

Piezo1expression increases under disturbed flow model of femoral atherosclerosis
Gloriani SANCHEZ MARRERO, Atlanta, Georgia, USA (5+1min)

Elena Aikawa Trailblazer Award Lecture
9:00-9:30 am

Chairs:

Sara VASCONCELOS, University of Toronto, Canada
Rebecca LEVIT, Emory University, USA (Introduction)

Engineering Vascular Regeneration: Perseverance and Serendipity

Ngan F. HUANG
Associate Professor of Cardiothoracic Surgery, Stanford University
Courtesy Associate Professor of Chemical Engineering, Stanford University

Session #4: Cardiovascular Calcification and Inflammation
9:30-10:30 am

Chairs:

Josh HUTCHESON, Florida International University, USA
Claudia GOETSCH, Uniklinik RWTH Aachen, Germany

Invited talks:

Title: *New Concepts in Vascular Calcification Pathobiology and Mitigation*
Cecilia GIACHELLI, University of Washington (15+2min)

Mineralomics and Cardiovascular Calcification
Sergio BERTAZZO, University College London (15+2min)

Submitted abstracts:

Tissue Engineered Blood Vessels to Examine Inflammation in Cardiovascular Diseases
George TRUSKEY, Duke University, USA (8+2min)

Prognostic Value of 18F-NaF PET/CT Imaging for Predicting 1.5-Year Progression of Vascular Calcification in Peripheral Artery Disease
Mitchel STACY, Nationwide Children's Hospital, USA (8+2min)

EGFR inhibition prevents CAV1-dependent calcifying extracellular vesicle biogenesis in the vasculature at different time points both in vivo and in vitro
Sophie ASHBROOK, Florida International University, USA (8+2min)

COFFEE BREAK 10:30-11:00 am

Session #5: New Developments in Transplantation and Organ Preservation
11:00 am -12:30 pm

Chairs:

Julie PHILLIPPI, University of Pittsburgh, USA
Bruno PODESSER, Medical University of Vienna, Austria
David KALFA, Columbia University, USA

Invited talks:

How to get out the ice age: temperature control systems and machine perfusion in heart transplantation
Andreas ZUCKERMANN, Medical University of Vienna, Austria (15 +2min)

Subzero Organ Preservation - Taking Time Out of the Equation in Transplantation
Gerald BRANDACHER, Medical University of Innsbruck, Austria (15+2min)

Partial heart transplant and living allogenic heart valve: a clinical and translational research perspective"
David KALFA, Columbia University, USA (15+2min),

Submitted abstracts:

Mitochondrial and Metabolic Therapies for Heart Failure Based on the Regenerative Potential of the Pediatric Heart
Fatemeh MIRSHAFIEI, University of Toronto, Canada (8+2min)

A minimal-invasive implantation of haem-scavenging microsponges protects heart against ferroptosis-induced reperfusion injury
Liwen ZHANG, Zhejiang University, China (8+2min)

Long-Term Tolerance to Heart Allografts Through Selective Expansion of regulatory T-cells
Laurenz WOLNER, Medical University of Vienna, Austria (8+2min)

LUNCH 12:30-1:45 pm

LUNCH and Poster sessions I-IV in parallel 12:30-1:45 pm

Poster session I

Poster #1/1 *Loss of NOTCH1 Promotes Impaired Vascular Smooth Muscle Cell Response to Hemodynamic Stress and Ascending Aortic Aneurysms*
Ruth ACKAH, The Ohio State University/Nationwide Children's Hospital, USA

Poster #2/1 *Creation of iPSC-derived lymphatic endothelial cells for use in lymphedema regenerative therapy* **(WITHDRAWN)**
Katherine HEKMAN, Emory University, USA

Poster #3/1 *Alarmin S100A8/A9 drives histone methylation-based epigenetic alterations in blood- and bone marrow-derived leukocytes in acute myocardial infarction*
Alexandra Gela LAZAR, Institute of Cellular Biology and Pathology Nicolae Simionescu, Romania

Poster #4/1 *Therapeutic S100A8/A9 inhibition reduces NADPH oxidase expression and counteracts NLRP3 inflammasome priming and activation in the ischemic myocardium*
Mihaela Loredana VLAD, Institute of Cellular Biology and Pathology Nicolae Simionescu, Romania

Poster #5/1 *Manuka Honey and its Phenolic Component, Methyl Syringate, Mediate Neutrophil Inflammatory Behaviors for Potential Use as a Vascular Prosthetic Bioactive*
Evan MAIN, The University of Memphis, USA

Poster #6/1 *Atypical melanocytes contribute to murine aortic valve elastogenesis*
Perony DA SILVA NOGUEIRA, Florida International University, USA

Poster #7/1 *Enhanced Targeted Repair of Vascular Injury by Apoptotic-cell-Mimicking Nanovesicles Engineered with P-Selectin Binding Peptide*
Ruixin ZHANG, China

Poster #8/1 *Material properties and acute human blood exposure may predict limb graft occlusion in EVAR*
Michael WOLF, Medtronic, USA

Poster #9/1 *On the Role and Mechanisms of Notch Signaling in Endothelial-to-Mesenchymal Transition in Cardiovascular Diseases*
Daria EVENSEN, University of Oslo, Norway

Poster #10/1 *Micropatterned surface investigation to reduce the risk of thrombus formation in cardiovascular devices*
Marta BONORA, Medical University of Vienna, Austria

Poster #11/1 Surface modification with Adiponectin improves reendothelialization of synthetic small-diameter vascular grafts
Anna-Maria SCHMITT, Medical University of Vienna, Austria

Poster #12/1 *Salvianolic Acid A (SA) fosters lymphangiogenesis against myocardial ischemic reperfusion injury*
Chen XU, Fudan University, China

Poster #13/1 *Development of a new protective solution for vein grafts in bypass surgery*
Tobias BRAUN, Paracelsus Medical University, Germany

Poster #14/1 *In-vivo Evaluation of Biomimetic Vascular Grafts with Artery-Tuned Mechanical Properties*
Kaspars MALECKIS, University of Nebraska Omaha, United States

Poster #15/1 *Reinforced Biotubes as Readily Available and Regenerative Vascular Grafts*
Cheng QUHAN, Nankai University, China

Poster #16/1 *Complete Transformation of Bioresorbable Synthetic Vascular Grafts in the Common Carotid Artery*
Anthony D'AMATO, Cornell University, USA

Poster session II

Poster #1/2 *aXess: Progress update on a restorative hemodialysis access vascular conduit*
Martijn COX, Xeltis BV, The Netherlands

Poster #2/2 *Inhibition of mitochondrial complexes I and IV reduces vascular calcification*
Andrea GORGELS, University Hospital Aachen, Deutschland

Poster #3/2 *Exploring the Role of Caveolin-1 in the Calcification Paradox: Cellular Insights into Divergent Mineralization Pathways in Vascular and Bone Tissues*
Katherine KAISER, Florida International University, USA

Poster #4/2 *Discovering the Effects of Cancer Cells on Lymphatic/Blood Vessel Mispatterning*
Walter MURFEE, University of Florida, USA

Poster #5/2 *Algorithm-Driven Optimization of Helical Vascular Grafts to Suppress Neointimal Hyperplasia in Arteriovenous Grafts*
Boxin LIU, China

Poster #6/2 *Creating order out of chaos – Modelling the influence of chronic inflammation on restoring cardiac structural anisotropy*
Marjolein TEN DAM, Technical University of Eindhoven, Netherlands

Poster #7/2 *Lymphatic and Tenascin C crosstalk in Left Ventricular Hypertrophy-Induced Cardiac Remodeling*
Lukas WEBER, Medical University of Vienna, Austria

Poster #8/2 *Carnosine-copper chelator-modified small-diameter vascular grafts for the promotion of anticoagulation and endothelial regeneration*
Shufang WANG, China

Poster #9/2 *Simulated microvasculature in thick 3D bioprinted collagen-based matrices promoted in active perfusion bioreactor*
Denisa KAŇOKOVÁ, Czech Technical University in Prague, Czech Republic

Poster #10/2 *Supporting Autologous Internal Jugular Vein Grafts with FRAME Mesh in a Porcine Carotid Artery Model*
Jaroslav CHLUPAC, Institute for Clinical and Experimental Surgery, Czech Republic

Poster #11/2 *Relaxin Receptor Agonist ML290 Inhibits Calcification in Vascular Smooth Muscle Cells*
Ana VALENTIN, Florida International University, USA

Poster #12/2 *A porcine model of controlled peripheral artery calcification*
Alexey KAMENSKIY, University of Nebraska Omaha, USA

Poster #13/2 *Biomimetic Electrospun Tri-layer Tissue Engineered Heart Valve with Low Calcification and Good Regenerative Ability*
Jing LIU, Chinese Academy of Medical Sciences and Peking Union Medical College, China

Poster #14/2 *Bilayer small diameter vascular graft with dual anti-calcification property by loading with baicalin and cathepsin S inhibitor*
Yanjiao TENG, Tianjin University, China

Poster #15/2 *Self-EmPOWERment - Road to a Self-Powered, Intelligent Vascular Graft*
Herbert MIDDLETON, i3S - Institute for Research and Innovation in Health, University of Porto, Portugal (presented by Andreia PEREIRA)

Poster #16/2 *Electrospun Vascular Grafts with Artery-Tuned Anisotropy*
Elizabeth CALDWELL, University of Omaha, USA

Poster session III

Poster #1/3 *High-resolution auxetic cardiac patches as a potential tool to support myocardium after infarct*
Felix POINTNER, Medical University of Vienna, Austria

Poster #2/3 *Radiation-Modulated Decellularized Pericardium Vascular Patches with Wharton's Jelly Stem Cells in a Porcine Carotid Artery Model*
Jan FRANK, Institute for clinical and experimental medicine, Czech Republic

Poster #3/3 *Modulating in vivo Long Term Remodeling Outcomes of a Polyurethane Based, Antithrombogenic Tissue Engineering Vascular Graft via Compliance Matching*
Katarina MARTINET, University of Pittsburgh, USA

Poster #4/3 *Harnessing programmed cell death to guide in situ remodeling of human tissue-engineered matrices*
Pascal BREITENSTEIN, University of Zurich, Switzerland

Poster #5/3 *Tissue-engineered vascular grafts utilizing automated decellularization of allo- and xenogeneic pericardial and vascular tissues modified with collagen and stem cells 3D bioprinting*
Roman MATĚJKA, Czech Technical University in Prague, Czech Republic

Poster #6/3 *Go with the flow: on the way of advancing native blood vessels as energy harvesters*
Ana MENDES, i3S - Instituto de Investigação e Inovação em Saúde, Portugal

Poster #7/3 *Fabrication and Mechanical Characterization of Near-Field Electrospun Bioresorbable Vascular Grafts Mimicking the Arterial Extracellular Matrix*
Alexandra SNYDER, University of Memphis, USA

Poster #8/3 *Promoting cell adhesion and regeneration in a 3D-printed cardiac patch via the human placenta chorion extracellular matrix*
Christopher RIEDMÜLLER, Medical University of Vienna, Austria

Poster #9/3 *The Tissue-Engineered, Pre-Vascularized Blood Vessel Wall Construct*
Lucie BAČÁKOVÁ, Czech Academy of Sciences, Czech Republic

Poster #10/3 *Biomimetic tri-layered small-diameter vascular grafts with decellularized extracellular matrix promoting vascular regeneration and inhibiting thrombosis with the salidroside*
Yanjiao TENG, Tianjin University, China

Poster #11/3 *Differential neutrophil deposition on synthetic versus biological scaffolds for in situ cardiovascular tissue engineering*
Valentine VETTER, Eindhoven University of Technology, The Netherlands

Poster #12/3 *Characterization of the inflammatory potential of different vascular graft materials*
Sabrina ROHRINGER, Medical University of Vienna, Austria

Poster #13/3 *Development of Vascular Patches with Reconstructed Tunica Media and Tunica Intima*
Anna BOCK, Czech Academy of Sciences, Czech Republic

Poster #14/3 *Engineering bioadhesive polymer scaffolds to enhance extracellular matrix hydrogel vascular graft mechanics*
Adam MIDGLEY, Nankai University, China

Poster #15/3 *Additively manufactured multimaterials with the elastic properties of human tissue*
Erik KORNFELLNER, Medical University of Vienna, Austria (presented by Francesco MOSCATO)

Poster #16/3 *Analysis of life quality parameters and circulating biomarkers in a prospective surgical aortic valve replacement study*
Frida-Maria KAINZ, University Hospital St. Pölten, Austria

Poster session IV

Poster #1/4 *Development of Autologous Tissue-Engineered Artificial Heart Valve for Transcatheter Pulmonary Valve Implantation*
Yasushi SATO Asahikawa Medical University Japan

Poster #2/4 *Small Biohybrid Valves and Scaffolds for Implant applications*
Selina SONNTAG, Department of Biohybrid & Medical Textiles (BioTex), Institute of Applied Medical Engineering, Helmholtz Institute (AME), RWTH Aachen University, Germany

Poster #3/4 *Small-diameter Vascular Grafts with Tunable Compliance via Melt Electrowriting*
Kilian MUELLER, Technical University of Munich, Germany (presented by Christina AHRENS)

Poster #4/4 *Thrombus Characterization in Abdominal Aortic Aneurysm and Aortic Dissection Models Using Histology and Scanning Electron Microscopy*
Niharika NARRA, Purdue University, USA

Poster #5/4 *Association between aortic mural thrombosis and abdominal aortic aneurysm expansion: a possible mediating role played by TREM1+ neutrophils*
Zongwei LIU, Tianjin Medical University General Hospital, China (WITHDRAWN)

Poster #6/4 *Thrombus Characterization in Abdominal Aortic Aneurysm and Aortic Dissection Models Using Histology and Scanning Electron Microscopy*
Marissa GUO, Ohio State University, USA

Poster #7/4 *Sex-dependent Differences in the Progression of Chronic Kidney Disease Induced Cardiac Dysfunction*
Valentina DARGAM, Florida International University, USA

Poster #8/4 *Characterization of the immune response and in vivo remodeling of a new generation of allogeneic Cell-Assembled extracellular Matrix after subcutaneous implantation in sheep*
Julien VITRY, Inserm, France

Poster #9/4 *Non-invasive electrophysiological evaluation of new-onset atrial fibrillation after cardiac surgery: Preliminary results from the BigMap Study*
David SANTER, Medical University of Vienna, Austria

Poster #10/4 *The Solution is Dilution: Parabiosis of WT to LYST Mutant Improves TEVG Performance*
Delaney VILLARREAL, Nationwide Children's Hospital, USA

Poster #11/4 *Powering the Future: Sputtering Technique for Superior Flu-TENG Performance*
Ana Catarina ALMEIDA, Institute for Research and Innovation in Health (i3S), Portugal (presented by Andreia PEREIRA)

Poster #12/4 *Durable immunomodulatory nanofiber niche for the functional remodeling of cardiovascular tissue*
Tonghe ZHU, Shanghai University of Engineering Science, China

Poster #13/4 *Development of a simple same-day implantation technique for allogeneic in vivo tissue-engineered vascular grafts to be completed in the operating room*
Keiichi KANDA, Kyoto Prefectural University of Medicine, Japan

Poster #14/4 *Tissue analysis core (TAC) capabilities at the center for cardiovascular research in biomechanics (CRIB)*
Anastasia DESYATOVA, University of Nebraska Omaha, USA

Poster #15/4 *Demographics and clinical relevance of animal models in haemodialysis research: a systematic review*
Merle KREBBER, UMC Utrecht, The Netherlands

Poster #16/4 *Advancements and Challenges in Cardiovascular Health and Translational Innovation in Bosnia and Herzegovina*
Daria LER, ASA Institute for Research, Development and Innovation, Bosnia and Herzegovina

Poster #17/4 *GO-Graft: From Hydrogel to Anti-Adhesive Vascular Graft for Bypass Surgery*
Andreia PEREIRA, i3S – Institute for Research and Innovation in Health, University of Porto, Portugal

Poster #18/4 *Graphene Oxide: A Masterpiece for Enhancing Decellularized Tissue Applications in Cardiac Regeneration*
Andreia PEREIRA, i3S – Institute for Research and Innovation in Health, University of Porto, Portugal

Session #6: Cardiovascular Imaging
1:45-3:15 pm

Chairs:

Attila KISS, Medical University of Vienna, Austria
Hannah CEBULL, Emory University, USA
Giovanni FERRARI, Columbia University, USA

Invited Lectures:

Cardiovascular preclinical imaging: Vienna experience
Attila KISS, Medical University of Vienna, Austria (15+2min)

Neurovascular hypoxia after mild traumatic brain injury in juvenile mice correlates with cardiac maladaptation in adulthood
Pierre SICARD, INSERM Montpellier, Université de Montpellier, France (15+2min)

Submitted abstracts:

Sex-Based Machine Learning Models for Prediction of Abdominal Aortic Aneurysm Patient Outcomes
Kathrine KERR, University of Pittsburgh, USA (8+2min)

Hemodynamics of Acute Type B Aortic Dissections with 4D Flow MRI
Hannah CEBULL, Emory University, USA (8+2min)

Mechanical Behavior of the Dissected Aortic Media During Radial Extension
Selda SHERIFOVA, Saint-Étienne School of Mines, France (8+2min)

"Attractive" Treatment for Abdominal Aortic Aneurysm Repair: Magnetic Localization of Silk-Iron Packaged Extracellular Vesicles
Ande MARINI, University of Pittsburgh, USA (8+2min)

Cardiac Tissue Engineering with Metamaterials to fabricate Robust and Contractile Cardiac Tissue Patches
Lewis JONES, ETH Zurich, Switzerland (8+2min)

COFFEE BREAK 3:15-3:45 pm

Session #7: Advanced Stage Cardiovascular Device Innovations in Biomaterials and Designs
3:45-5:45 pm

Chairs:

Michael WOLF, Medtronic, USA
Art COURY, Northeastern University, USA
Rainald SEITELBERGER, Uniklinikum Salzburg, Austria
Carlijn BOUTEN, University of Eindhoven, The Netherlands

Invited talks:

Polymers used in Commercial Valves: Past, Present, and the Future
Shrojal DESAI, Edwards Lifesciences, Irvine CA, USA (20+3min)

Update: Catering for the many: Polymeric TAVR for rheumatic heart disease
Peter ZILLA, SAT, Cape Town, South Africa (15+2min)

Differential Tissue Response to Bioresorbable Scaffolds in the Pulmonary and Aortic Position.
Carlijn BOUTEN, University of Eindhoven, The Netherlands (15+2min)

A Synthetic Vascular Graft Reconstructs to a Functional Vessel
Buddy RATNER, University of Washington, USA (15+2min)

Submitted abstracts:

Fish swim bladders as valve leaflets enhance the durability of transcatheter aortic valve replacement devices
Zhihong WANG, Nankai School of Medicine (8+2min)

Design, Development, and Fabrication of a Bioresorbable Polymeric Heart Valve Stent using 3D Printing
Arian EHTERAMI, University of Zurich, Switzerland (8+2min)

In vitro and in vivo testing of a novel, fully absorbable magnesium-based annuloplasty ring with inert antibacterial properties
Lukas WEBER, Medical University of Vienna (8+2min)

Tribute to Professor Deon Bezuidenhout
A quarter century of collaboration and friendship
Michael F. WOLF with Introduction by Art COURY, Medtronic, USA (15 min)

Wine and Cheese Reception Opens, 5:45 pm

Panel Discussion: Heart Valve and Vascular Grafts: Novel Concepts Utilizing Polymeric Approaches; Challenges and Opportunities
5:45-6:30 pm
IWG/ISVTE Panel Q&A with all speakers
IWG Panelists: Shrojal DESAI, Peter ZILLA, Art COURY, Carlijn BOUTEN, Buddy RATNER

Session #8: Manfred Deutsch Lecture:
7:00-7:45 pm

Introduction: Theodor FISCHLEIN, Klinikum Nürnberg - Paracelsus Medical University, Germany

Long-term results of clinical in-vitro endothelialization of vascular grafts
Martin GRAGBENWÖGER, Klinik Floridsdorf, Austria (10 min)

Vascular Tissue-Engineering: Pioneering Translation
Peter ZILLA, SAT, Cape Town, South Africa (30+5 min)

Monday, 7th October 2024

8:30-9:00 am ISACB Business Meeting (all are welcome)

Session #9 Engineering Tissues and Devices
9:00-10:30 am

Chairs:

Ngan HUANG, Stanford University, USA
Karl H. SCHNEIDER, Medical University of Vienna, Austria
Marjan ENAYATI, Medical University of Vienna, Austria

Robert Nerem Lecture:
Therapeutic Vascularization Using Modular Tissue Engineering
Jan STEGEMANN, University of Michigan (25+5min)

Invited talks:

Engineering Devices, Implants and Surgical Procedures through Additive Manufacturing and Simulation
Francesco MOSCATO, Medical University of Vienna (20+5min)

Submitted abstracts:

Engineering Bioelectric Threads from hiPSC-derived Cardiomyocytes to Direct Cardiac Conduction Pathways
Arvin SOEPRIATNA, Brown University, Providence, Rhode Island, USA (8+2min)

Protein-engineered Elastin-Like Fibers for Biomedical Textile Applications
Ikram El MAACHI, Helmholtz Institute RWTH Aachen, Germany (8+2 min)

Customized in situ small caliber graft manufacturing with focused rotary jet spinning
Melanie GENERALI, University of Zurich, Switzerland (8+2min)

COFFEE BREAK 10:30-11:00 am

Session #10, Cardiac regeneration and pediatric valve transplantation
11:00 am - 12:30 pm

Chairs:

Roman GOTTARDI, Universitätsklinikum Freiburg, Germany
Melanie GENERALI, University of Zurich, Switzerland
Amanda LEBLANC, University of Louisville, USA

Invited talks:

Heart Regeneration with Fiber-Reinforced Engineered Human Myocardium
Kareen L COULOMBE, Brown University, Providence, Rhode Island, USA (20+5min)

Partial Heart Transplantation - A New Approach to Deliver Growing Heart Valve Implants.
Nicholas CALLAIS, University of Arkansas for Medical Sciences, Arkansas Children's Hospital, USA (20+5min)

Submitted abstracts:

Bioengineering Immune Shielded Living Heart Valves for Pediatric Valve Pathologies
Marijn PETERS, Eindhoven University of Technology, Utrecht, The Netherlands (8+2min)

Preclinical Evaluation of Cell-Assembled Extracellular Matrix Sheets for Surgical Repair of Tetralogy of Fallot
Fabien KAWECKI, Inserm, University of Bordeaux, Bordeaux, France (8+2min)

Tuesday, 8th October 2024

Session #11 Cardiac and Vascular Remodeling
8:30-10:30 am

Chairs:

Janice TSUI, University College London, UK
Helga BERGMEISTER, Medical University of Vienna, Austria
Melanie GENERALI, University of Zurich, Switzerland
Luke BREWSTER, Emory University, USA

Alexander Clowes Lecture

Macrophage activation and heterogeneity in vascular diseases: a systems approach to target discovery
Masanori AIKAWA, Brigham and Women's Hospital, Harvard Medical School, Boston, USA (20+5min)

Invited talks:

Cardiovascular Biomimetics
Melanie GENERALI, University of Zurich, Switzerland (15+2min)

The impact of metabolic alterations in myocardial Infarction: from pathophysiology to new therapeutic strategies
Gemma VILAHUR, Research Institute Sant Pau, Spain (15+2min)

Submitted abstracts:

Compliant aortic stent-grafts attenuate left ventricular mass and pulse wave velocity increases compared to stiff commercial TEVAR stent-grafts in a preclinical porcine model
Anastasia DESYATOVA, University of Nebraska Omaha, USA (8+2min)

Discovering the Potential for Using Stromal Vascular Fraction to Form Lymphatic Vessels
Walter MURFEE, University of Florida, USA (8+2min)

Sex dependent differences in baseline extracellular matrix composition and chronic kidney disease induced aortic valve calcification in mice
Daniel CHAPARRO, Florida International University, USA (8+2min)

Unravelling Neointima Hyperplasia: The Role of Flow Disturbances in Endothelial Cell Activation and Matrix (Dis)organization
Mattia MANENTI, Einhoven University of Technology, The Netherlands (8+2min)

Rat infection model supports improved infection resistance of restorative aXess conduits compared to ePTFE controls
Hannah BAUER, Xeltis B.V, Eindhoven, The Netherlands (8+2min)

Spontaneous multifocal metastatic mammary tumors induce gradual development of cardiac remodeling and dysfunction in mice
Peter POKREISZ, Medical University of Vienna, Austria (8+2min)

COFFEE BREAK 10:30-11:00 am

Session # 12: New Opportunities and Challenges in Translational Innovation (Joint ISVTE session)
11:00 am -12:30 pm

Chairs:

Beat H. WALPOTH, University of Geneva, Switzerland
Nicolas L'HEUREUX, Bordeaux University, France
Helga BERGMEISTER, Medical University of Vienna, Austria
Juan WANG, Humacyte Inc., Durham, USA

Invited talks:

Evaluation of the Performance of Tissue Engineered Vascular Grafts: Beware the Lemming
Christopher BREUER, Ohio State University College of Medicine, Columbus University, USA (20+2min)

Decellularized polymer-reinforced biotubes as arteriovenous grafts: Report of clinical trial
Deling KONG, Nankai University, Tianjin, China, LEADBIO Biotechnology (Hangzhou) Co., Ltd., Hangzhou, China (15+2min)

Acellular Tissue Engineered Vessels: Long-term Clinical Observations
Juan WANG, Humacyte Inc., Durham, USA (15+2min)

Clinical translation of Restorative Vascular Conduits: Update on progress and insights
Martijn COX, Xeltis BV, Eindhoven, Netherlands (15+2min)

Submitted abstracts:

The design of a dynamic Arteriovenous Fistula, a Vascular Access only when patient needs it.
Nicolas WHITE, Leiden University Medical Center & Delft University of Technology, Netherlands (8+2min)

Clinical Vascular Tissue Engineering under GMP Conditions.
Johann MEINHART, Klinik Floridsdorf, Austria (8+2min)

12:30-12:45 pm Farewell-Box Lunch Provided

Session # 13: Young Investigator's Symposium
1:00-4:00 pm

Successive round table discussions of early-career relevant topics. Get to meet successful ISACB members in this interactive afternoon for and by our young investigators. During each round, a central presentation will precede a plenary Q&A, providing plenty of opportunity for interaction.

Round 1: Moderator: Hannah CEBULL, Emory University, USA (1:00-2:00pm)
Thanks a million: Grant writing tips and tricks.
Craig GOERGEN, Purdue University, USA
Giovanni FERRARI, Columbia University, USA
Janice TSUI, University College London, UK

Round 2: Moderator: Fabien KAWECKI, Inserm, University of Bordeaux, France (2:00-3:00pm)
Starting it up: From bench to industry.
Robert TRANQUILLO, University of Minnesota, USA
Nicolas L'HEUREUX, Bordeaux University, France

Round 3: Moderator: Ande MARINI, University of Pittsburgh (3:00-4:00pm)
The valve to success: Advice for transitioning to the next step in your career.
Brian AGUADO, University of California, USA
Arvin SOEPRIATNA, Brown University, USA
Merle MAAS-KREBBER, University Medical Center Utrecht, The Netherlands

4:00 pm End of meeting