



isHLT.org/isHLT2023

[#ISHLT2023](https://twitter.com/ISHLT2023)

ISHLT 2023

43rd ANNUAL MEETING
& SCIENTIFIC SESSIONS

Wednesday, 19 April – Saturday, 22 April 2023
Colorado Convention Center | Denver, CO, USA

PRELIMINARY PROGRAM

 @ISHLT
 @TheISHLT
 @TheISHLT
 /company/isHLT

Wednesday, 19 APRIL, 2023



8:00 – 9:30 a.m.

GENERAL SESSION (PLENARY) I

Primary Core Therapy: MULTI **Secondary Core Therapies:** ALL **Primary Practice Area:** MULTI **Secondary Practice Areas:** ALL

Co-Chairs: Howard Eisen, MD, Penn State Hershey Medical Center, Hershey, PA USA
Andreas Zuckermann, MD, Medical University of Vienna, Vienna, Austria

8:00 a.m. **Scientific Program Chair Report**
Howard Eisen, MD, Penn State Hershey Medical Center, Hershey, PA USA

8:10 a.m. **ISHLT President's Report**
Andreas Zuckermann, MD, Medical University of Vienna, Vienna, Austria

8:25 a.m. **Featured Abstract #1 (TBD)**

8:35 a.m. **Q&A with Interactive Discussant**

8:40 a.m. **Forced Organ Procurement in China**
Ethan Gutmann, China Studies Research Fellow, Victims of Communism Memorial Foundation; Co-Founder, International Coalition to End Transplant Abuse in China, Washington, DC USA

9:05 a.m. **Commentary on Ethics in Thoracic Organ Transplantation**
Are Holm, MD, PhD, Oslo University Hospital, Oslo, Norway

9:15 a.m. **Featured Abstract #2 (TBD)**

9:25 a.m. **Q&A with Interactive Discussant**

Wednesday, 19 APRIL, 2023



10:00 – 11:00 a.m.

SESSION 01: A Bridge Too Far? Ethics of Organ Procurement using Thoracic Normothermic Regional Perfusion

Primary Core Therapy: MULTI

Secondary Core Therapies: HEART, LUNG, MCS

Primary Practice Area: MULTI

Secondary Practice Areas: Anesthesiology and Critical Care, Cardiology, Cardiothoracic Surgery, Pediatrics, Pulmonology

Session Summary: Thoracic normothermic regional perfusion (T-NRP) allows for controlled heart and lung procurement following circulatory determination of death. T-NRP employs an extracorporeal circuit to restart the heart after circulatory death; however, brain perfusion is surgically prevented prior to during restoration of circulation. Ethical concerns have been raised regarding the use of extracorporeal circuits to produce heart-beating, brain dead donors, including whether T-NRP violates the dead donor rule. This session will conclude with a moderated panel discussion led by the co-chairs, addressing the controversial questions pertaining to T-NRP.

Co-Chairs: Andrew Courtwright, MD, PhD, Hospital of the University of Pennsylvania, Philadelphia, PA USA
Anne Olland, MD PhD, University Hospital Strasbourg, Strasbourg, France
Arne Neyrinck, MD, PhD, Leuven University Hospitals, Leuven, Belgium

10:00 a.m.

Introduction to Thoracic Normothermic Regional Perfusion: Technical and Legal Considerations

Dirk Van Raemdonck, MD, PhD, University Hospitals Leuven, Leuven, Belgium

Speaker will overview technical aspects of different T-NRP procedures, including transition from death by circulatory criteria to death by brain-death criteria. Speaker will describe outcomes of organs procured with T-NRP, also disclosing potential differences between hearts and lungs harvested with this technique. In addition, the current regulatory status of T-NRP in relevant ISHLT-member countries will be reviewed.

10:15 a.m.

Ethical Concerns in T-NRP Organ Procurement with Focus on the Donor

Savitri Fedson, MD, MA, Michael E. DeBakey VA Medical Center, Houston, TX USA

The speaker will highlight primary ethical considerations around T-NRP with focus on the donors (i.e. discussions with donor family, definition of death, comfort care during removal of life support, community perceptions, etc.) including potential violation of dead donor rule, ascertainment of donor death, respect for donor autonomy, distinction between permanent and irreversible, between adults and pediatrics, disclosure to surrogate decision makers, and trust in organ procurement systems.

10:30 a.m.

Ethical Concerns with Focus on the Recipient in T-NRP Organ Procurement

Pedro Catarino, MD, Cedars-Sinai Heart Institute, Los Angeles, CA USA

The speaker will highlight primary ethical considerations around T-NRP, with focus on organ recipients (what to tell family, effect on allocation, equity issues as some centers do this and other don't, competing interest for heart/lung/abdominal organs), and beneficence in both adults and pediatrics, as well as trust in organ transplant systems.

10:45 a.m.

Panel Discussion

Wednesday, 19 APRIL, 2023



10:00 – 11:00 a.m.

SESSION 02: Diving Into the Role of Mitochondria in Heart Transplantation

Primary Core Therapy: HEART

Secondary Core Therapies: LUNG

Primary Practice Area: Research and Immunology

Secondary Practice Areas: Cardiology, Cardiothoracic Surgery, Pediatrics, Pharmacy and Pharmacology

Session Summary: Mitochondria are more than the powerhouse of our cells. They are the largest cellular producers of oxygen free radicals, they contain their own DNA, and they can be produced or recycled according to cellular needs. This session will highlight unique features of mitochondrial components and parameters as potential biomarkers of heart quality and cardiac rejection and will introduce new cardioprotective therapies acting through mitochondrial mechanisms. This session will conclude with a moderated panel discussion led by the co-chairs.

Co-Chairs: Daniel Calabrese, MD, University of California, San Francisco, CA USA
Javier Carbone, MD, PhD, Hospital General Universitario Gregorio Marañón, Madrid, Spain

10:00 a.m. **Mitochondrial Components: A New Generation of Biomarkers in Heart Transplantation**
Sarah Longnus, PhD, University Hospital, Berne, Switzerland

This talk will introduce the relevance of mitochondria in heart transplantation. Novel mitochondrial components, such as, cytochrome c, succinate and mitochondrial DNA, will be described and their potential use as biomarkers of hearts status prior to transplantation will be discussed

10:15 a.m. **Mitochondria Have Something Important to Tell You About Heart Rejection and You Did Not Know**
Martin Cadeiras, MD, University of California Davis, Sacramento, CA USA

Mitochondria are emerging as potent immunomodulators agents. In this talk, recent evidence pointing out mitochondrial parameters and/or components as robust markers of heart rejection will be described. Attention will be given to markers assessed in biopsies and cell-free mitochondrial DNA. The potential association of mitochondrial dysfunction and CAV will also be included.

10:30 a.m. **Let's Put Something New in the Box: How Mitochondrial Therapies Can Improve the Quality of Organs**
James McCully, Boston Children's Hospital, Boston, MA USA

Innovative therapies targeting mitochondrial parameters, as well as mitochondrial transplantation, are emerging in pre-clinical models of heart transplantation and will be reviewed during the talk.

10:45 a.m. **Panel Discussion**

Wednesday, 19 APRIL, 2023



10:00 – 11:00 a.m.

SESSION 03: Back to the Future of AMR: A Multidisciplinary Symposium

Primary Core Therapy: LUNG

Secondary Core Therapies: NONE

Primary Practice Area: MULTI

Secondary Practice Areas: Cardiothoracic Surgery, Pathology, Pharmacy and Pharmacology, Pulmonology, Research and Immunology

Session Summary: The aim of this symposium is twofold: to present the current state of knowledge on the detection, pathogenesis, and treatment of antibody-mediated rejection and to analyze knowledge gaps to inform future directions. The session begins with a case of donor:recipient selection and then continues with detailed discussion of the complex pathological and serological presentation of AMR, new advances in detection of deleterious antibodies, and novel therapeutics in the pipeline. A multidisciplinary approach will present AMR in its complexity and promote knowledge exchange between different fields. The session will begin with a case presentation to set the stage for the remaining talks which will address ongoing challenges in AMR diagnostics and treatment. Following each talk, co-chairs will lead a brief Q&A segment with the speaker and encourage questions from the audience.

Co-Chairs: Glen Westall, FRACP, PhD, Alfred Hospital, Melbourne, Australia
Meghan Aversa, MD, University of Toronto, Toronto, ON Canada

10:00 a.m. **Case Presentation: To Treat or Not to Treat? That is the Question**
Jake Natalini, MD, MSCE, NYU Langone Health, New York, NY USA

This short talk will introduce a case of a lung transplant recipient with a 15% decline in FEV1 from baseline and biopsy negative for acute cellular rejection who is found to have both class I and class II donor-specific antibodies. This case will set the stage for the session addressing ongoing challenges in AMR diagnostics and treatment.

10:06 a.m. **Pulmonary AMR: Meeting the Challenge in 2023**
Deborah Levine, MD, Stanford University, Palo Alto, CA USA

This talk will summarize the updates from the AMR Working Group including information on standardizing surveillance, monitoring and testing for Pulmonary AMR based on risk assessment and stratification.

10:18 a.m. **Q&A**

10:24 a.m. **Updates in DSA: Evaluation and Detection of Pulmonary AMR**
Adriana Zeevi, PhD, University of Pittsburgh, Pittsburgh, PA USA

This talk will discuss advances in the detection of donor-specific antibodies (HLA and non-HLA) using innovative techniques as well as new opportunities for detection of pulmonary AMR in biopsy specimens.

10:36 a.m. **Q&A**

10:42 a.m. **The Present and the Future of AMR Treatment**
Adam Cochrane, PharmD, MPH, Inova Fairfax Hospital, Falls Church, VA USA

This presentation will provide a comprehensive overview of current and future AMR therapeutic strategies. To promote a multidisciplinary approach, special attention will be given to the immunological rationale behind them. In addition, relevant clinical trials in this field will be discussed.

10:54 a.m. **Q&A**

Wednesday, 19 APRIL, 2023



10:00 – 11:00 a.m.

SESSION 04: Pulmonary Arterial Hypertension is Risky Business!

Primary Core Therapy: PVD

Secondary Core Therapies: HEART, LUNG

Primary Practice Area: MULTI

Secondary Practice Areas: Cardiology, Pediatrics, Pulmonology

Session Summary: This session, in Pecha Kucha format, will review recent updates and clinical aspects of risk-stratification in PAH.

Pecha Kucha Format: the Japanese term for the sound of conversation (“chit chat”), this style symposium is designed to keep presentations concise and fast-paced. The session will begin with a brief description of the Unifying Theme, followed by five speakers who will each have 8 minutes to discuss the theme, using 20 slides total and only spending 20 seconds per slide. The last 20 minutes will be audience Q&A and a vote for the winning speaker.

Unifying Theme: Risk stratification in PAH requires a comprehensive intake of clinical, hemodynamic and imaging parameters which will be presented in this session.

Co-Chairs: Jason Weatherald, MD, MSc, University of Alberta, Edmonton, AB Canada
Manreet Kanwar, MD, Allegheny General Hospital, Pittsburgh, PA USA

10:00 a.m. ***Real-Life Risk Stratification in PAH: When and How and How Often***

Sandeep Sahay, MD, Houston Methodist Hospital, Houston, TX USA

Review the clinical practice and methods of risk-stratification in PAH, including recommended time-points during the course of the disease

10:08 a.m. ***3-Risk Strata System in PAH***

Laurent Savale, MD, PhD, Hospital Bicetre, Le Kremlin-Bicêtre, France

Review the 3-risk strata stratification in PAH, with focus on recent ESC/ERS recommendation.

10:16 a.m. ***RV Imaging and Risk-Stratification in PAH***

Roberto Badagliacca, MD, PhD, University of Rome Sapienza, Roma, Italy

Review the role of RV imaging in risk-stratification in PAH

10:24 a.m. ***Hemodynamics That Predict Outcomes in PAH***

Charles Fauvel, MD, The Ohio State University, Columbus, OH USA

Review the role of hemodynamics that predict outcomes in PAH

10:32 a.m. ***Risk Stratification in Pediatric PH: Where Are We, With the Kids?***

Allen Everett, MD, Johns Hopkins University School of Medicine, Baltimore, MD USA

Review updates in risk-stratification in PAH in pediatric patient population

10:40 a.m. ***Panel Discussion and Audience Vote***

Wednesday, 19 APRIL, 2023



11:30 a.m. – 12:30 p.m.

SPECIAL SESSION 01: ISHLT en Español: Abordaje del Shock Cardiopulmonar (Strategies to Manage Cardiopulmonary Shock)

Primary Core Therapy: MCS

Secondary Core Therapies: HEART, LUNG

Primary Practice Area: MULTI

Secondary Practice Areas: Anesthesiology and Critical Care, Cardiology, Cardiothoracic Surgery, Nursing & Allied Health, Pharmacy and Pharmacology, Pulmonology

Esta sesión se llevará a cabo en español. (This session will be conducted in Spanish.)

CME no se ofrece para esta sesión. (CME is not offered for this session.)

Resumen de la sesión: La sesión, en el formato Pecha Kucha, discutirá estrategias para manejar el shock cardiopulmonar. Se discutirá las intervenciones médicas y quirúrgicas, incluidas las indicaciones para los pacientes, qué pacientes y el momento para iniciar estas modalidades de tratamiento. La sesión también discutirá el manejo de los pacientes en estos diversos tratamientos. Esta sesión se llevará a cabo en español. (The session, in Pecha Kucha format, will discuss strategies to manage cardiopulmonary shock. It will discuss medical and surgical interventions including indications for patients, which patients and the timing to initiate these treatment modalities. The session will also discuss the management of patients once on these various treatments.)

Formato Pecha Kucha: El término japonés para el sonido de la conversación ("charla"), el estilo del simposio está diseñado para mantener presentaciones concisas y de ritmo rápido. La sesión comenzará con una breve descripción del Tema Unificador, seguida por cinco disertantes, cada uno de los cuales tendrá 8 minutos para discutir el tema, usando 20 diapositivas en total y sólo dedicando 20 segundos por diapositiva. Los últimos 20 minutos serán para preguntas y respuestas de la audiencia y un voto para el disertante ganador. (The Japanese term for the sound of conversation ("chit chat"), this style symposium is designed to keep presentations concise and fast-paced. The session will begin with a brief description of the Unifying Theme, followed by five speakers who will each have 8 minutes to discuss the theme, using 20 slides total and only spending 20 seconds per slide. The last 20 minutes will be audience Q&A and a vote for the winning speaker.)

Tema unificador: Los países pueden abordar el shock cardiopulmonar desde diferentes perspectivas. Nos centraremos en estos enfoques e intentaremos identificar el vínculo común que podría mejorar la identificación y el manejo. (Countries may approach cardiopulmonary shock from different perspectives. We will focus on these approaches and try to identify the common link that could improve the identification, and management.)

Co-Chairs: Hannah Copeland, MD, Lutheran Medical Group, Fort Wayne, IN USA
Paola Morejon Barragan, MD, Clínica Guayaquil, Guayaquil, Ecuador

11:30 a.m. **¿Cómo Lo Hacen? Modelos Organizativos Para el Shock Cardiogénico en Todo el Mundo (How Do They Do It? Organizational Models for Cardiogenic Shock Across the World)**

Jaime Hernandez Montfort, MD, MPH, MSc, Baylor Scott and White Health, Austin, TX USA

El disertante analizará los diferentes modelos de equipos de choque cardiogénico en todo el mundo. El orador discutirá quiénes componen estos equipos, es decir, cirujanos, intensivistas, cardiólogos, etc. El orador discutirá el papel de cada miembro del equipo y su contribución al equipo. (The speaker will discuss various models of cardiogenic shock teams across the world. The speaker will discuss who makes up these teams, ie surgeons, intensivists, cardiologists etc. The speaker will discuss each team members role and contribution to the team.)

11:38 a.m. **Allí Estaré: Experiencias ECMO Móviles (I Will Be There: Mobile ECMO Experiences)**

Adriana Torres, MD, Los Cobos Medical Center, Bogotá, Colombia

El disertante hablará sobre varias experiencias de ECMO móvil en todo el mundo, desde poner a los pacientes en ECMO en el campo, en las calles de la ciudad, en otro hospital y luego transferir al paciente al hospital de origen. El manejo del paciente en campo previo a

su llegada al hospital. (The speaker will discuss various experiences Mobile ECMO across the world, from putting patients on ECMO in the field, the streets of the city, in another hospital and then transferring the patient to the home hospital. The management of the patient in the field prior to arrival at the hospital.)

11:46 a.m.

Shock Cardiogénico en PAH: La Última Frontera (Cardiogenic Shock in PAH: The Last Frontier)

Alejandro Bertolotti, MD, Favaloro Foundation, Buenos Aires, Argentina

El disertante abordará cómo manejar el shock cardiogénico en el paciente con HAP - identificar la HAP, cuándo no conoce al paciente y cómo manejar al paciente con terapia médica, versus diferentes intervenciones quirúrgicas. (The speaker will address how to manage cardiogenic shock in the PAH patient – identifying PAH, when you do not know the patient, and how to manage the patient with medical therapy, versus different surgical interventions.)

11:54 a.m.

No Me Detengas Ahora: Manejo Del Shock Debido a Una Embolia Pulmonar (Don't Stop Me Now: Management of Shock Due to Pulmonary Embolism)

Maria Crespo, MD, Hospital of the University of Pennsylvania, Philadelphia, PA USA

El disertante discutirá el diagnóstico temprano del paciente con embolia pulmonar aguda, PERT (equipo de respuesta a la embolia pulmonar), manejo médico con anticoagulación, cuándo escalar a ECMO-VA, soporte para la falla del ventrículo derecho y embolectomía pulmonar aguda. (The speaker will discuss early diagnosis of the acute pulmonary embolism patient, PERT (pulmonary embolism response team), medical management with anticoagulation, when to escalate to VA ECMO, RVAD support, and acute pulmonary embolectomy.)

12:02 p.m.

Todo en Un Nombre: Choque en Poblaciones Menos Favorecidas - ¿Misma Enfermedad Pero Diferentes Oportunidades? (All In a Name: Shock in Less Favoured Populations - Same Disease But Different Opportunities?)

Marta Farrero Torres, MD, PhD, Hospital Clinic de Barcelona, Barcelona, Spain

El disertante discutirá el shock cardiogénico en varias poblaciones, es decir, la mujer pequeña (problemas de acceso vascular), frágil (paciente delgado, caquéctico), obeso mórbido (acceso difícil), pacientes embarazadas y aquellos con falta de acceso a la atención (desiertos de salud). (The speaker will cardiogenic shock in various populations ie the small female (vascular access issues), frail (thin, cachectic patient), morbidly obese (difficult access), pregnant patients and those with lack of access to care (health deserts).)

12:10 p.m.

Panel de Discusión y Votación de la Audiencia (Panel Discussion and Audience Vote)

Wednesday, 19 APRIL, 2023



1:00 – 2:00 p.m.

SESSION 08: JHLT Year in Review

Primary Core Therapy: MULTI
Secondary Core Therapies: ALL
Primary Practice Area: MULTI
Secondary Practice Areas: ALL

Session Summary: The JHLT Editors will introduce some of the most influential papers published in JHLT from 2022. These papers will be selected by the editors in early 2023. The “Top 4” original research papers, one from each area of heart transplant, lung transplant, MCS, and pulmonary arterial hypertension, will be presented by Early Career Editors, who will discuss the key findings of the study and describe the importance of the paper in moving the field forward. Four senior editors (one from each area) will co-chair the session. Each editor will lead a brief 5-minute Q&A discussion with the presenter following each presentation, with the goal of bringing out key additional learning points for the audience.

Co-Chairs: Michelle Kittleson, MD, PhD, Cedars-Sinai Heart Institute, Los Angeles, CA USA
Marcelo Cypel, MD, University Health Network, Toronto, ON Canada
Ivan Netuka, MD, PhD, Institute for Clinical and Experimental Medicine, Prague, Czech Republic
Ryan Tedford, MD, Medical University of South Carolina, Charleston, SC USA

- 1:00 p.m. **The Most Influential JHLT Mechanical Circulatory Support Paper in 2022**
Aditi Nayak, MD, MS, Emory University, Atlanta, GA USA
This presentation will describe one of the most influential JHLT papers in the MCS space. The presenter will go over the rationale for the study, the key findings, and how it moves the field forward.
- 1:10 p.m. **Q&A led by Senior Editor**
- 1:15 p.m. **The Most Influential JHLT Lung Failure/Transplantation Paper in 2022**
Laurent Godinas, MD, PhD, UZ Leuven, Leuven, Belgium
This presentation will describe one of the most influential JHLT papers in the lung transplant space. The presenter will go over the rationale for the study, the key findings, and how it moves the field forward.
- 1:25 p.m. **Q&A led by Senior Editor**
- 1:30 p.m. **The Most Influential JHLT Pulmonary Arterial Hypertension Paper in 2022**
Carles Diez-Lopez, MD, Bellvitge University Hospital, Barcelona, Spain
This presentation will describe one of the most influential JHLT papers in the area of PAH. The presenter will go over the rationale for the study, the key findings, and how it moves the field forward.
- 1:40 p.m. **Q&A led by Senior Editor**
- 1:45 p.m. **The Most Influential JHLT Heart Failure/Transplantation Paper in 2022**
Kriti Puri, MBBS, Baylor College of Medicine, Houston, TX USA
This presentation will describe one of the most influential JHLT papers in the heart transplant space. The presenter will go over the rationale for the study, the key findings, and how it moves the field forward.
- 1:55 p.m. **Q&A led by Senior Editor**

Wednesday, 19 APRIL, 2023



1:00 – 2:00 p.m.

SESSION 09: Diagnosis of Heart Transplant Rejection: Out With the Old, In With the New

Primary Core Therapy: HEART

Secondary Core Therapies: NONE

Primary Practice Area: Cardiology

Secondary Practice Areas: Nursing & Allied Health, Pathology, Pediatrics, Research and Immunology

Session Summary: This session, in Pecha Kucha format, will provide an update on recent advances in the diagnosis of cardiac rejection including an update on current histological techniques, biopsy and blood-based genetic technologies.

Pecha Kucha Format: the Japanese term for the sound of conversation ("chit chat"), this style symposium is designed to keep presentations concise and fast-paced. The session will begin with a brief description of the Unifying Theme, followed by five speakers who will each have 8 minutes to discuss the theme, using 20 slides total and only spending 20 seconds per slide. The last 20 minutes will be audience Q&A and a vote for the winning speaker.

Unifying Theme: This session will bring together the latest technological advances in the diagnosis of cardiac allograft rejection (both ACR and AMR).

Co-Chairs: Jignesh Patel, MD, PhD, Cedars-Sinai Smidt Heart Institute, Los Angeles, CA USA
Annalisa Angelini, MD, University of Padua, Padova, Italy

1:00 p.m.

Through the Looking Glass: Advances in Histology

Carolyn Glass, MD, PhD, Duke University Medical Center, Durham, NC USA

Discuss the potential of "computer-vision" technology and "artificial intelligence" to enhance diagnostic performance in improving the reliability and accuracy of EMB interpretation; Phenotyping the inflammatory cells using immunohistochemistry; Reassessing histopathology and the contribution of various structural myocardial injuries to allograft dysfunction or prognostic stratification (myocardial injury, "minimal rejection" and vasculitis).

1:08 p.m.

Going Small: MicroRNA Analysis for the Diagnosis of Cardiac Allograft Rejection

Palak Shah, MD, MS, Inova Heart and Vascular Institute, Falls Church, VA USA

Discuss the potential microRNAs (miRNAs) as biomarkers; Next-Generation Sequencing (NGS) technology in FFPE EMBs to explore miRNA expression profiles; The utility of intragraft miRNA profiles & signature to distinguish patients with rejection from patients without rejection to distinguish different types of ACR, pAMR, and mixed rejection.

1:16 p.m.

Delving Deeper into the Biopsy: Intragraft Gene Profiling

Daniel Kim, MD, University of Alberta, Edmonton, AB Canada

Discuss the molecular microscope diagnostic technique and the potential clinical implications.

1:24 p.m.

Gene Expression Profiling: What's in a Score?

Luciano Potena, MD, PhD, Bologna University Hospital, Bologna, Italy

Discuss the potential use of gene expression profiling variability to predict the probability of future clinical events in heart transplant recipients and the clinically validated data.

1:32 p.m.

Capturing the Escaped: Cell Free DNA and Donor-Derived Exosomal Analysis

Kiran Khush, MD, MAS, Stanford University, Stanford, CA USA

Techniques in development of Donor-derived cell-free DNA and Donor-derived Exosomal Analysis; Their potential as noninvasive use markers of rejection and discuss the data supporting clinically validate use in rejection diagnosis, Expand on the utility beyond that of rejection (sensitization, allograft vasculopathy).

1:40 p.m.

Panel Discussion and Audience Vote

1:00 – 2:00 p.m.

SESSION 10: Multidisciplinary Avengers: Defeating The Lung Primary Graft Dysfunction
Hydra

Primary Core Therapy: LUNG

Secondary Core Therapies: HEART, PVD, MCS

Primary Practice Area: Pulmonology

Secondary Practice Areas: Cardiothoracic Surgery, Anesthesiology and Critical Care, Nursing & Allied Health

Session Summary: This session will discuss new approaches to reduce primary graft dysfunction with a focus on patient optimization before surgery and in the operating room, ending with a lively debate on whether intraoperative ECMO is beneficial or detrimental in terms of PGD risk. The session will begin with two talks followed by a pro/con debate. After each of the two talks, and again after the debate, co-chairs will lead a brief Q&A segment with the speaker and encourage questions from the audience.

Co-Chairs: Archer Martin, MD, Mayo Clinic Florida, Jacksonville, FL USA
Sandra Lindstedt, MD, PhD, Wallenberg Centre for Molecular Medicine, Lund Univ, Lund, Sweden

1:00 p.m. **Preoperative Optimization: Prehabilitation Program**
Jonathan Singer, MD, MS, University of California San Francisco, San Francisco, CA USA
Discuss pre-operative rehabilitation strategies to address frailty and explore its impact on development of PGD

1:10 p.m. **Q&A**

1:15 p.m. **OR Extubation: Non-ECLS Approach to Improving PGD**
Julien Fessler, MD, Foch Lung Transplant Group, Paris, France
Review new data and approaches regarding early extubation that may reduce the risk of PGD.

1:25 p.m. **Q&A**

1:30 p.m. **DEBATE: Intraoperative Per Protocol VA ECMO Attenuates PGD (PRO)**
Brandi Bottiger, MD, Duke University, Durham, NC USA
The speaker will argue that intraoperative ECMO is helpful in terms of protecting from PGD development/risk.

1:40 p.m. **DEBATE: Intraoperative Per Protocol VA ECMO Attenuates PGD (CON)**
Gabriel Loor, MD, Baylor College of Medicine, Houston, TX USA
The speaker will argue that intraoperative ECMO is harming in terms of protecting from PGD development/risk.

1:50 p.m. **Q&A**

1:00 – 2:00 p.m.

SESSION 11: A Mile High in Denver: Elevating Our Understanding and Management of Pediatric and Adult MCS Infections

Primary Core Therapy: MCS

Secondary Core Therapies: HEART

Primary Practice Area: Infectious Diseases

Secondary Practice Areas: Cardiology, Cardiothoracic Surgery, Nursing & Allied Health, Pediatrics, Pharmacy and Pharmacology

Session Summary: This session is intended to provide a wide audience with important updates in the pathogenesis of device infections, novel adjuvant therapies for prevention and treatment of VAD infections, and 2023 ISHLT Definitions of Infections of Mechanical Circulatory Support. This session will conclude with a moderated panel discussion led by the co-chairs.

Co-Chairs: Stephanie Pouch, MD, MS, Emory University, Atlanta, GA USA
Lara Danziger-Isakov, MD, MPH, Cincinnati Children's Hospital Medical Center, Cincinnati, OH USA

1:00 p.m. ***Name that Infection: 2023 ISHLT Definitions for Infections of Mechanical Circulatory Support Devices***
Ezequiel Molina, MD, Piedmont Heart Institute/Samsky Advanced Heart Failure Ctr, Atlanta, GA USA
The speaker will provide an overview of the 2023 ISHLT Definitions of Infections of Mechanical Circulatory Support, including those relevant to percutaneous devices and ECMO.

1:12 p.m. ***Tiny Humans, Big Devices: Incidence and Impact of Infections in Pediatric MCS***
Scott Auerbach, MD, University of Colorado, Denver, CO USA
This talk will review the infection-related complications in pediatric MCS patients, especially related to the exit site. The discussion will include both traditional durable devices, as well as "temporary used as durable devices".

1:24 p.m. ***Make It Go Away: Lotions, Potions and Phages***
Saima Aslam, MD, MS, University of California San Diego, San Diego, CA USA
This talk will describe advances in phage isolation and treatment in general, as well as concentrating on the potential roles for patients with ventricular assist devices.

1:36 p.m. ***All It Takes is a Knife: Surgical Perspective on VAD Infections***
Ivan Knezevic, MD, PhD, University Medical Centre, Ljubljana, Slovenia
The presenter will review the outcomes of surgical management of durable MCS infections and the role of device replacement.

1:48 p.m. ***Panel Discussion***

Wednesday, 19 APRIL, 2023



2:15 – 3:45 p.m.

SESSION 15: La Vida Loca: Expanding the Heart Donor Pool with DCD – Pearls and Pitfalls

Primary Core Therapy: HEART

Secondary Core Therapies: LUNG, MCS, PVD

Primary Practice Area: Cardiothoracic Surgery

Secondary Practice Areas: Cardiology, Anesthesiology and Critical Care, Pediatrics

Session Summary: Heart transplantation is a curative therapy for patients with end stage heart failure, however, the number of available organs continues to fall short of the number awaiting transplant. Donation after circulatory death (DCD), which is a common method of procuring kidneys, livers, and lungs for organ donation, has not had as widespread a role in heart transplantation. Countries with DCD heart transplant programs have significantly expanded their donor pool, with excellent post-transplant outcomes. These programs have developed complex procurement strategies whilst navigating ethical, technical and resource challenges. This session aims to review the logistics, pearls, and pitfalls for DCD heart transplantation. Can DCD heart transplantation go mainstream? The session will begin with three 10-minute talks that will set the stage for a 30-minute “team” pro/con debate with a 2-member pro team and 2-member con team. The session will conclude with a 30-minute moderated panel discussion led by the co-chairs.

Co-Chairs: Gerin Stevens, MD, PhD, Northwell Health, New York, NY USA
Amy Fiedler, MD, University of California San Francisco, San Francisco, CA USA
Are Holm, MD, PhD, Oslo University Hospital, Oslo, Norway

2:15 p.m.

Rolling the Dice: How to Start a DCD Heart Transplant Program

Andreas Zuckermann, MD, Medical University of Vienna, Vienna, Austria

To start at the beginning, a strong foundation must be built! This presentation will cover the challenges of starting a DCD heart transplantation program. Specifically, identification of key participants, needed resources, informed consent, avoiding conflicts of interest, and managing ethical considerations are critical to building a DCD heart program. What is the 'ideal time-line' for establishing a program, how should outcomes be measured and is success guaranteed?

2:25 p.m.

Playing One's Hand: Donor and Recipient Selection for DCD

Emily Granger, MBBS, St. Vincent's Hospital, Sydney, Australia

You've got to know when to hold 'em, know when to fold 'em, know when to walk away, and know when to run. Who is the ideal DCD heart donor and who is the ideal DCD heart recipient? This presentation will dive into the expanded donor pool of DCD hearts. The talk will explore the different donors who now may be considered, specifically the concept of 'warm/cold ischaemic time'?. How long can we wait for circulatory death, and what constitutes significant donor heart ischaemia, and how do we then assess the impact on donor heart? Furthermore, is there a preferred recipient for the DCD heart or do we now have a 'winning hand' for all! Once you roll the dice, what is the best strategy for managing the DCD heart beyond the operating theatre and into the intensive care. The talk will also advise on specific tips for managing typical challenges in the immediate peri-operative period: haemodynamics, bleeding, rejection and other bad cards!

2:35 p.m.

Keeping Your Cards Close: Selecting and Prognosticating the DCD Donor

Arne Neyrinck, MD, PhD, Leuven University Hospitals, Leuven, Belgium

This discussion looks at selection of DCD donors and their management. How can intensive care units predict the progression to circulatory death in the devastating brain injury donors? What can be done to optimize outcomes for the potential organ recipient, yet still respect the needs and care of the donor patient?

2:45 p.m.

DEBATE: Normothermic Regional Perfusion or Direct Procurement and Perfusion for DCD Heart Transplantation?

Discussion in a pro-con style, with a 2-member pro team and 2-member con team. Moderators will pose a controversial question to the teams. Each team will have 5 minutes to respond to the question and present their team's argument. The moderator will then allow each team a 2-minute rebuttal of the opposition's argument.

Question 1: The donor defines the technique: Donor choice, donor management, donor assessment: which technique is the superior?

Question 2: The recipient outcome makes the difference: Recipient choice, recipient outcome: can I choose which is better for my patient?

PRO TEAM: Going With the Flow: NRP Rules - Real Time Retrieval is the Real Thing!

Andreas Zuckermann, MD, Medical University of Vienna, Vienna, Austria
Ashish Shah, MD, Vanderbilt University Medical Center, Nashville, TN USA

CON TEAM: Rush and Retrieve: DPP is the Way to Go!

Emily Granger, MBBS, St. Vincent's Hospital, Sydney, Australia
Are Holm, MD, PhD, Oslo University Hospital, Oslo, Norway

3:15 p.m.

Panel Discussion with Audience Q&A

2:15 – 3:45 p.m.

SESSION 16: If at First You Don't Succeed, Try, Try Again! Heart Failure and Transplantation in Fontan Patients

Primary Core Therapy: HEART

Secondary Core Therapies: MCS, PVD

Primary Practice Area: MULTI

Secondary Practice Areas: Cardiology, Pediatrics, Pharmacy and Pharmacology, Pulmonology, Cardiothoracic Surgery, Anesthesiology and Critical Care

Session Summary: This session will discuss the heart failure therapies and challenges of heart transplantation in patients with failing Fontan physiology. This session will conclude with a moderated panel discussion led by the co-chairs.

Co-Chairs: Neha Bansal, MD, Children's Hospital at Montefiore, Bronx, NY USA
David Peng, MD, University of Michigan, Ann Arbor, MI USA
Rayan Yousefzai, Houston Methodist Hospital, Houston, TX USA

2:15 p.m.

Failure is Not an Option: Complications of Fontan Physiology

Estela Azeka, MD, University of Sao Paulo, São Paulo, Brazil

This talk will discuss the chronic heart failure a single ventricle patient faces from the time of Fontan operation. The speaker will also discuss the unique physiologic state and how both systolic and diastolic ventricular dysfunction are frequently seen.

2:30 p.m.

Not Good Enough! Using Conventional Heart Failure Therapies in Fontan Circulatory Failure

Amy Kiskaddon, PharmD, Johns Hopkins All Children's Hospital, St. Petersburg, FL USA

This talk will discuss how standard adult heart failure pharmacotherapies are frequently employed in management of heart failure and discuss the little evidence supporting their efficacy in Fontan patients.

2:45 p.m.

Under Pressure: Elevated Pulmonary Vascular Resistance in Fontan Patients

Claire Irving, MBChB, MRCPCH, MD, Children's Hospital Westmead, Sydney, Australia

Elevated pulmonary vascular resistance (PVR) plays a critical role in the failing Fontan, with even mild elevations in PVR resulting in detrimental effects. This talk will address the elevated Pulmonary Vascular resistance in Fontan patients: diagnostics, therapy and impact on transplant.

3:00 p.m.

Peri- and Post-Operative Challenges and Strategies in the Heart Recipient with Fontan Circulation

Viviane Nasr, MD, MPH, FASA, Boston Children's Hospital, Boston, MA USA

Vasoplegia, collateral flow, protein losing enteropathy, chronic drainage, and other unique post-transplant challenges in the heart recipient with Fontan circulation will be described. Best practices to address these complications will be shared.

3:15 p.m.

Jury Still Out? Heart-Liver vs. Heart-Only Transplantation in Fontan Patients

Kathleen Simpson, MD, University of Colorado Denver, Denver, CO USA

The speaker will discuss the difficulty in assessment of need of liver transplantation in Fontan patients, especially as work up for heart only vs heart-liver transplantation.

3:30 p.m.

Panel Discussion

2:15 – 3:45 p.m.

SESSION 17: Donor Lung Allocation: Prioritizing Urgency, Access or Outcomes - What Matters Most?

Primary Core Therapy: LUNG

Secondary Core Therapies: NONE

Primary Practice Area: Pulmonology

Secondary Practice Areas: Nursing & Allied Health, Research and Immunology

Session Summary: The session will provide an overview of three donor lung allocation systems including the new continuous allocation system in the USA using the composite allocation system, France's relatively new lung allocation system utilizing supply and demand, and Scandiatransplant's Urgent Lung Allocation system (ScULAS). Finally, the session will end by reviewing the challenges faced by different countries and organ allocation systems and a discussion of the tradeoffs and benefits of each system. This session will conclude with a moderated panel discussion led by the co-chairs.

Co-Chairs: Carli Lehr, MD, MS, Cleveland Clinic Foundation, Shaker Heights, OH USA
Luke Benvenuto, MD, Columbia University, New York, NY USA

2:15 p.m.

Composite Allocation System (CAS): What to Expect

Maryam Valapour, MD, MPP, Cleveland Clinic, Cleveland, OH USA

Describe the framework of the new US lung allocation system and the projected impact of the system on the transplant population

2:30 p.m.

Supply-Demand Ratio for Lung Allocation in France

Antoine Roux, MD, PhD, Foch Hospital, Paris, France

The speaker will provide a general overview of allocation in France, why it was set up like it was, and how it is working (ie the pros/cons of such a system, equitability, and/or opportunities for improvement).

2:42 p.m.

Multinational Urgent Lung Allocation in Scandiatransplant

Hans Henrik Schultz, MD, PhD, Rigshospitalet, Copenhagen, Denmark

The Scandiatransplant Urgent Lung Allocation System (ScULAS) was introduced in 2009 to facilitate donor lung allocation across 4 countries. The talk will provide an overview of the system and review the benefits and limitations of the current system.

2:54 p.m.

How the Lessons Learned From the US LAS Can Be Used to Inform International Models

Jens Gottlieb, Hannover Medical School, Hannover, Germany

Discuss impact of the LAS system on international transplant systems and if/how the expected changes to the US system may be useful to other countries

3:06 p.m.

Pediatric Organ Allocation: Similarities and Differences Around the World

Christian Benden, MD, MBA, FCCP, University of Zürich, Zurich, Switzerland

Discuss how organs are allocated to pediatric recipients in the US and internationally and highlight considerations unique to the pediatric population

3:18 p.m.

Panel Discussion

2:15 – 3:45 p.m.

SESSION 18: Chronic Thromboembolic Pulmonary Hypertension: A Decade of Progress

Primary Core Therapy: PVD

Secondary Core Therapies: HEART, LUNG

Primary Practice Area: MULTI

Secondary Practice Areas: Cardiology, Cardiothoracic Surgery, Nursing & Allied Health, Pulmonology

Session Summary: Chronic thromboembolic pulmonary hypertension (CTEPH) is regarded as a potentially curable form of pulmonary vascular disease. This session provides a range of topics describing the ongoing clinical challenges, for both operable and inoperable CTEPH patients, as a result of advances in pulmonary endarterectomy surgery, the availability of approved PH targeted medical therapy, and the resurgence of balloon pulmonary angioplasty. Following each talk, co-chairs will lead a brief Q&A segment with the speaker and encourage questions from the audience.

Co-Chairs: Joanna Pepke-Zaba, PhD, FRCP, Royal Papworth Hospital NHS Trust, Cambridge, United Kingdom
Marc De Perrot, MD, MSc, FRCSC, Toronto General Hospital, Toronto, ON Canada
William Auger, MD, University of California San Diego, San Diego, CA USA

2:15 p.m. **What Are We Learning From Our CTEPH Registries?**
Marion Delcroix, MD, PhD, UZ Leuven, Leuven, Belgium
Over the past 10 years, several CTEPH-related registries from Europe/Canada, US, Japan and China have provided valuable insight into the diagnosis and management of CTEPH. This lecture will review results from the Global CTEPH registry (ICA) and longitudinal outcome data from the US CTEPH Registry.

2:30 p.m. **Q&A**

2:33 p.m. **PEA as a Cure for CTEPH: Re-examining Outcomes**
Michael Madani, MD, University of California San Diego, La Jolla, CA USA
Pulmonary endarterectomy often provides marked pulmonary hemodynamic and survival benefits in select CTEPH patients. This lecture will examine other patient-important outcomes post PEA, where additional non-surgical therapy may be appropriate.

2:48 p.m. **Q&A**

2:51 p.m. **Multimodality Approach in CTEPH: Choosing the Best Strategy for Segmental Disease**
Elie Fadel, MD, Hospital Marie Lannelongue, Le Plessis-Robinson, France
The option of a technically more challenging endarterectomy as opposed to the PH medical therapy and BPA treatment plan for patients with segmental level CTEPH will be discussed in this presentation.

3:06 p.m. **Q&A**

3:09 p.m. **BPA: The Search for Equipose with PEA**
Hiromi Matsubara, MD, PhD, National Hospital Organization, Okayama Medical Center, Okayama, Japan
A critical examination of the possibility that Balloon Pulmonary Angioplasty might eventually result in comparable clinical outcomes in CTEPH patients to those achieved with PEA surgery

3:24 p.m. **Q&A**

3:27 p.m. **The Expansion of CTEPH Centers Around the World: Defining Capability and Credibility**
Isabelle Opitz, University Hospital Zurich, Zurich, Switzerland
Beyond annual patient numbers, this lecture will review programmatic needs to become a CTEPH Center of Excellence, providing PH medical care, PEA and BPA services.

3:42 p.m. **Q&A**

Wednesday, 19 APRIL, 2023



4:15 – 5:15 p.m.

SESSION 22: Pregnancy and Beyond: Reproductive Health in Heart and Lung Failure

Primary Core Therapy: MULTI

Secondary Core Therapies: HEART, LUNG, MCS

Primary Practice Area: MULTI

Secondary Practice Areas: Cardiology, Pharmacy and Pharmacology, Pulmonology

Session Summary: The ISHLT Consensus Statement on Reproductive Health in Thoracic Transplantation will be published in the Journal of Heart and Lung Transplantation in late 2022 or early 2023. This comprehensive document spans preconception counseling; risk assessment, management, and outcomes in lung transplantation and heart transplantation; and pregnancy in patients with durable mechanical circulatory support (MCS). This session, in Pecha Kucha format, will highlight the important content of this document.

Pecha Kucha Format: the Japanese term for the sound of conversation (“chit chat”), this style symposium is designed to keep presentations concise and fast-paced. The session will begin with a brief description of the Unifying Theme, followed by five speakers who will each have 8 minutes to discuss the theme, using 20 slides total and only spending 20 seconds per slide. The last 20 minutes will be audience Q&A and a vote for the winning speaker.

Unifying Theme: Pregnancy in patients with end-stage heart and / or lung disease is considered high and often poses a clinical and ethical dilemma for the patient and the provider. This session will discuss controversial topics related to pregnancy in this high risk population.

Co-Chairs: Jesper Magnusson, MD, PhD, Sahlgrenska University Hospital, Göteborg Sweden
Anique Ducharme, MD, MSC, Université de Montréal, Montreal, QC Canada

- 4:15 p.m. ***Pregnancy in Pulmonary Arterial Hypertension***
Jennifer Haythe, MD, Columbia Univ Med Center, New York, NY USA
The speaker will discuss the sequelae and consequences of pregnancy in patients with Pulmonary Hypertension and how to mitigate these risks.
- 4:23 p.m. ***Pregnancy after Transplantation (Heart/Lung)***
Lynn Punnoose, MD, Vanderbilt University Medical Center, Nashville, TN USA
Discussion of timing, risk assessment, assessment of graft function, and outcomes of pregnancy in lung/ heart transplantation. Include immune-suppression's impact on decision making as well.
- 4:31 p.m. ***Pregnancy in Patients with Left Ventricular Assist Devices***
Francesca Macera, MD, Erasmus Medical Center, Brussels, Belgium
The speaker will discuss complications of pregnancies in patients with LVADs, how the LVADs impact pregnancy and vice versa. There will also be discussion of successful strategies used to manage pregnancy in patients with LVADs.
- 4:39 p.m. ***Pregnancy in High-Risk Population in the Era of Abortion Bans***
Mary Walsh, MD, St. Vincent Heart and Vascular Institute, Indianapolis, IN USA
Medical recommendations for termination of pregnancy in patients with end stage heart and lung failure where the risk of maternal mortality is high.
- 4:47 p.m. ***Assisted Reproduction in High-Risk Populations (Heart and Lung Failure)***
Patricia Ging, MSc, Mater Misericordiae, Dublin, Ireland
Overview of recommendations for assisted reproduction in patients with end stage heart and lung failure.
- 4:55 p.m. ***Panel Discussion and Audience Vote***

4:15 – 5:15 p.m.

SESSION 23: Different Continents, Same Problems: Global Perspective on Cardiogenic Shock

Primary Core Therapy: MCS

Secondary Core Therapies: HEART

Primary Practice Area: MULTI

Secondary Practice Areas: Anesthesiology and Critical Care, Cardiology, Cardiothoracic Surgery, Nursing & Allied Health, Pediatrics

Session Summary: This session will highlight global perspectives on various aspects of cardiogenic shock care, from optimizing systems of care and shock team compositions to delivering care in low resource settings and highlighting the global uptake of the SCAI stage shock classification scheme. This session will conclude with a moderated panel discussion led by the co-chairs.

Co-Chairs: Bart Meyns, MD, PhD, UZ Leuven, Leuven, Belgium
Jamila Kremer, MD, University Hospital, Heidelberg, Germany

4:15 p.m. **Shock Networks of Care: Which Fits Best?**
Rachna Kataria, MD, Massachusetts General Hospital, Boston, MA USA

This talk will discuss the pros and cons of different models of cardiogenic shock care, including the hub and spoke vs tier-based systems. As well, how these differing systems influence delivery of care in high vs low resource countries will be discussed.

4:30 p.m. **The Bottom Line: Shock Teams and Infrastructure in Low vs. High Resource Settings**
Talha Meeran, MD, Sir HN Reliance Foundation Hospital, Mumbai, India

This talk will discuss the impact of resource infrastructure and shock team compositions on cardiogenic shock management, with particular emphasis on low resource settings.

4:45 p.m. **Look at the SCAI: Forecast for Cardiogenic Shock Patients in Europe and Beyond**
Federico Pappalardo, AO SS Antonio e Biagio e Cesare Arrigo, Alessandria Italy

This talk will discuss the uptake of the SCAI classification for cardiogenic shock staging in countries outside of the US, and whether this uptake has altered cardiogenic shock management and/or outcomes.

5:00 p.m. **Panel Discussion**

4:15 – 5:15 p.m.

SESSION 24: Top Lung: I Feel the Need for Speed -- to Get You Eating and Drinking

Primary Core Therapy: LUNG

Secondary Core Therapies: NONE

Primary Practice Area: Pulmonology

Secondary Practice Areas: Nursing & Allied Health, Pharmacy and Pharmacology

Session Summary: Providing adequate nutrition and achieving sufficient drug absorption are required for patients to thrive after lung transplantation. A multidisciplinary approach is necessary to manage dysphagia, aspiration, nutritional delivery, and drug absorption in lung transplant recipients. Following each talk, the co-chairs will lead a brief Q&A with the speaker and encourage questions from the audience.

Co-Chairs: Ramsey Hachem, MD, Washington University School of Medicine, St. Louis, MO USA
Peter Jaksch, MD, Medical University of Vienna, Vienna, Austria

4:15 p.m.

Highway to the Danger Zone: The Oesophagus

Matthew Hartwig, MD, Duke University Medical Center, Durham, NC USA

This talk will review data regarding pre- and post-transplant assessment of esophageal function, including patient-centered risk factors that may predict recovery of esophageal function after transplant. Discussion of predictors of recovery of esophageal dysfunction after transplantation will also be included.

4:25 p.m.

Q&A

4:30 p.m.

You've Lost That Loving Feeling: When Your Patient Aspirates

Vasiliki Gerovasili, MD, Royal Brompton and Harefield Hospitals, UK, Harefield, United Kingdom

This talk will discuss prevention, management, and sequelae of aspiration.

4:40 p.m.

Q&A

4:45 p.m.

When to Call the Top Gun Team: Pharmaceutical Management When Not Absorbing

Fay Burrows, BPharm, St. Vincent's Hospital, Sydney, Australia

This talk will discuss challenges with polypharmacy, as well as strategies to optimize drug delivery in the setting of gastroparesis or esophageal dysfunction.

4:55 p.m.

Q&A

5:00 p.m.

Take My Breath Away: Costs and Considerations of Prolonged NPO Status

Katie Stratton, MA, RD, LDN, University of Pennsylvania, Philadelphia, PA

This talk will focus on data regarding utility of prolonged NPO status to minimize the impact of esophageal/gastric dysfunction and discuss pathways for multidisciplinary management of GI issues after lung transplant.

5:10 p.m.

Q&A

Wednesday, 19 APRIL, 2023



4:15 – 5:15 p.m.

SESSION 25: Transplants and Pulmonary Hypertension

Primary Core Therapy: PVD

Secondary Core Therapies: LUNG

Primary Practice Area: Cardiothoracic Surgery

Secondary Practice Areas: Anesthesiology and Critical Care, Cardiology, Pulmonology

Session Summary: This session will go through the considerations for timing and listing for transplantation, discuss the need for bilateral versus single lung transplantation, and describe the postoperative handling all to improve outcomes. This session will conclude with a moderated panel discussion led by the co-chairs.

Co-Chairs: Ilaria Righi, MD, Cà Granda Foundation Policlinico Hospital, Milan, Italy
Goran Dellgren, MD, PhD, Sahlgrenska Univ Hospital, Goteborg, Sweden

4:15 p.m. **Timing Listing Criteria for Patients with iPAH in the Pulmonary Vasodilator Era: How Do We Optimize Pre- and Post-Transplant Survival?**

Vikramjit Khangoora, MD, Inova Fairfax Hospital, Fairfax, VA USA

Timing Listing criteria for patients with iPAH in the pulmonary vasodilator era: How do we optimize pre and post-transplant survival? Assessment of the complex factors and decision making around timing for listing. Criteria that should elevate urgency status on the lung transplant waiting list.

4:30 p.m. **Single vs. Double Lung or Heart-Lung Transplant?**

Konrad Hoetzenecker, MD, Medical University of Vienna, Vienna, Austria

Single versus double lung or heart-lung transplant? High rates of PGD following lung transplant for pulmonary hypertension have led to a generalized preference to perform bilateral lung transplant. Patient selection for single versus double lung transplant + H-L transplant for those with severe RV dysfunction

4:45 p.m. **Role of Liver vs. Lung-Liver Transplantation in Porto-Pulmonary Hypertension**

Laurent Savale, MD, PhD, Hospital Bicetre, Le Kremlin-Bicêtre, France

Role of liver versus lung-liver transplantation in porto-pulmonary hypertension. This presentation will focus on surgical management of patients with severe pulmonary hypertension in the setting of porto-pulmonary disease, including optimal patient selection, peri-operative concerns and outcomes.

5:00 p.m. **Panel Discussion**

Thursday, 20 APRIL, 2023



7:00 – 7:45 a.m.

SPECIAL SESSION 02: The Wonderful World of Early Career: How to Get that Grant

Primary Core Therapy: MULTI
Secondary Core Therapies: ALL
Primary Practice Area: MULTI
Secondary Practice Areas: ALL

Session Summary: This “lightning style” session will cover two 20-minute topics. Co-chairs will lead a brief Q&A segment with speakers after each topic with questions from the audience.

CME is not offered for this session.

Co-Chairs: Brittany Koons, PhD, Villanova University M. Louise Fitzpatrick College of Nursing, Villanova, PA USA
Ashley Fritz, DO, Mayo Clinic, Jacksonville, FL USA

7:00 a.m. **Topic 1: Off to See the Wizard: Tips and Tricks to Get That Grant - Junior Researcher Perspective**

Junior and senior researchers discuss how, when, and where to begin a grant proposal. Speakers will share tips and strategies for grant writing success!

7:00 a.m. **Early Career Perspective**
Sahar Saddoughi, MD, PhD, Mayo Clinic, Rochester, MN USA

7:05 a.m. **Senior Perspective**
Howard Eisen, MD, Penn State Milton S. Hershey Medical Center, Hershey, PA USA

7:10 a.m. **Topic 1 Q&A**

7:20 a.m. **Topic 2: Follow the ISHLT Road: How to Get Involved - Early Career Perspective**

Mentee and mentor teams discuss the ISHLT organization through the lens of junior and senior faculty. Speakers will discuss avenues to get involved with ISHLT from the professional communities to directors at large. Speakers will also discuss other avenues to engage ISHLT through abstract submission, volunteering, and utilization of other resources available (i.e. Expertlink) to further career progression.

7:20 a.m. **Early Career Perspective**
Tara Veasey, PharmD, BCPS, Allegheny General Hospital, Pittsburgh, PA USA

7:25 a.m. **Senior Perspective**
Michael Shullo, PharmD, West Virginia University Hospitals, Morgantown, WV USA

7:30 a.m. **Topic 2 Q&A**

Thursday, 20 APRIL, 2023



7:00 – 7:45 a.m.

SPECIAL SESSION 03: The Wonderful World of Early Career: Jumpstart Your Future

Primary Core Therapy: MULTI
Secondary Core Therapies: ALL
Primary Practice Area: MULTI
Secondary Practice Areas: ALL

Session Summary: This “lightning style” session will cover two 20-minute topics. Co-chairs will lead a brief Q&A segment with speakers after each topic with questions from the audience.

CME is not offered for this session.

Co-Chairs: Kyle Hope, MD, MS, Texas Children's Hospital, Baylor College of Medicine, Houston, TX USA
Joseph Rogers, MD, Texas Heart Institute, Houston, TX USA

7:00 a.m.

Topic 1: Follow the ISHLT Road: How to Get Involved

Mentee and mentor teams discuss the ISHLT organization through the lens of junior and senior faculty. Speakers will discuss avenues to get involved with ISHLT through abstract submission, volunteering, and resources available (i.e. Expertlink) to further career progression.

7:00 a.m.

Early Career Perspective

Rebecca Klingbeil, MSN, DNP, Mayo Clinic, Saint Augustine, FL USA

7:05 a.m.

Senior Perspective

Archer Martin, MD, Mayo Clinic, Jacksonville, FL USA

7:10 a.m.

Topic 1 Q&A

7:20 a.m.

Topic 2: If I Only Had a Job — Advice for Starting Your Career - Early Career Perspective

Speakers from North America and Europe discuss opportunities and suggestions for looking for that perfect job whether you are just starting out in your career or are considering changing positions later in your career.

7:20 a.m.

Early Career Perspective

Caroline Patterson, BMBS, BMedSci, MD, Royal Papworth Hospital, Cambridge, United Kingdom

7:25 a.m.

Senior Perspective

Hakim Ali, MD, Duke University Hospital, Durham, NC USA

7:30 a.m.

Topic 2 Q&A

Thursday, 20 APRIL, 2023



8:00 – 9:30 a.m.

GENERAL SESSION (PLENARY) II

Primary Core Therapy: MULTI
Secondary Core Therapies: ALL
Primary Practice Area: MULTI
Secondary Practice Areas: ALL

Co-Chairs: John Wallwork, FRCS, FMedSci, Royal Papworth Hospital, Cambridge, United Kingdom
Sharon Hunt, MD, Stanford University Medical Center, Stanford, CA USA

8:00 a.m. ***International Thoracic Organ Transplant Registry Report***
Rebecca Cogswell, MD, University of Minnesota, Minneapolis, MN USA

8:10 a.m. ***Norman Shumway Centenary Recognition***

8:20 a.m. ***Health Equity and Advanced Heart and Lung Disease***
Ala Stanford, MD, FACS, FAAP, U.S. Dept. of Health and Human Services, Philadelphia, PA USA
The speaker will address issues of health equity and access to care including access to advanced therapies for end-stage heart and lung disease.

8:40 a.m. ***UK Perspective on Health Equity***
Caroline Patterson, BMBS, BMedSci, MD, Royal Papworth Hospital, Cambridge, United Kingdom

8:50 a.m. ***Featured Abstract #3 (TBD)***

9:00 a.m. ***Q&A with Interactive Discussant***

9:05 a.m. ***Introduction to Lifetime Achievement Award Recipient***
Andreas Zuckermann, MD, Medical University of Vienna, Vienna, Austria

9:10 a.m. ***2023 Lifetime Achievement Award Recipient Lecture***
Speaker To Be Announced in January

Thursday, 20 APRIL, 2023



10:00 – 11:00 a.m.

SESSION 29: The Right MCS Devices for the Right Patients

Primary Core Therapy: MCS

Secondary Core Therapies: HEART

Primary Practice Area: Cardiothoracic Surgery

Secondary Practice Areas: Cardiology, Pediatrics

Session Summary: HF-CS represent a growing CS subpopulation for which there are few evidence-based therapies. It is a continuum where dynamic and accurate risk stratification is needed, and a systematic re-profiling allows clinical decision making. The selection of the best MCS device for a given patient depends on baseline patient characteristics, CS severity, the goal of temporary MCS and institutional expertise. Also, acute RV failure and its clinical presentation need to be addressed with all the different aspects of RV failure and the ways to overcome it. RV failure in CS patients demands fast decision making and adequate selection of temporary MCS. This session will conclude with a moderated panel discussion led by the co-chairs.

Co-Chairs: Maria Renedo, MD, Hospital Universitario Fundación Favaloro, Buenos Aires, Argentina
Adrian daSilva-deAbreu, MD, MSc, PhD(c), Mayo Clinic, Rochester, MN USA

10:00 a.m. ***In the Pool of Diversity: Individualized Temporary MCS Transitions Beyond Etiologies and Phenotypes***

Ivan Netuka, MD, PhD, IKEM, Prague, Czech Republic

This talk will review the different aspects we should evaluate regarding gender, body mass index, social environment, and comorbidities during decision-making and tMCS deployment, and how to reach an individualized therapeutic approach in this complex patient population.

10:10 a.m. ***When Appearances are Deceptive: Phenotyping Specific Diagnoses to Target Therapy and Myocardial Recovery***

Linda Van Laake, MD, PhD, UMC Utrecht, Utrecht, Netherlands

This talk will explain the importance of etiology assessment to identify the possibility of myocardial recovery and its usefulness in the decision-making comprehensive approach. Considerations about how to wean tMCS and when to think about transition to durable VAD. This talk will also focus on clinical parameters and risk factors for successful durable VAD implantation.

10:20 a.m. ***When Smaller Bodies Turn into Bigger Problems: What's New in MCS in the Pediatric Population?***

Martin Schweiger, Prof., MBA, FABS, FEBS, Children's Hospital Zurich, Zürich, Switzerland

This presentation will address the current state of the art regarding HF-CS management in the pediatric population. The available devices and their selection process will also be reviewed. The talk will also present data on possible pediatric durable VAD implantation after tMCS and what to physiological aspects to focus on when implanting durable pediatric VADs.

10:30 a.m. ***To Pulsate or Not to Pulsate: Pulsatile vs. Continuous Right Ventricle Support***

Yaron Barac, MD, PhD, Rabin Medical Center, Petah Tiqva, Israel

This talk will focus on survival and weaning results by pulsatile vs continuous RVAD. Right ventricular support in cardiogenic shock also needs to be addressed in this talk. How to best treat patient in acute biventricular failure and subsequent RV failure after tMCS.

10:40 a.m. ***Panel Discussion***

Thursday, 20 APRIL, 2023



10:00 – 11:00 a.m.

SESSION 30: Exploring the Limits in Heart Transplantation in Children and Adults

Primary Core Therapy: HEART

Secondary Core Therapies: NONE

Primary Practice Area: Pediatrics

Secondary Practice Areas: Cardiology, Cardiothoracic Surgery, Nursing & Allied Health

Session Summary: This session, in Pecha Kucha format, focuses on strategies aimed at successful transplantation of children and adults who are often deemed “un-transplantable,” “highly unlikely,” or “too high risk.” Talks will focus on patient selection, peri- and post-op management, and outcomes.

Pecha Kucha Format: the Japanese term for the sound of conversation (“chit chat”), this style symposium is designed to keep presentations concise and fast-paced. The session will begin with a brief description of the Unifying Theme, followed by five speakers who will each have 8 minutes to discuss the theme, using 20 slides total and only spending 20 seconds per slide. The last 20 minutes will be audience Q&A and a vote for the winning speaker.

Unifying Theme: Challenges in heart transplant selection and management

Co-Chairs: Kelly Schlendorf, MD, Vanderbilt University Medical Center, Nashville, TN USA
Manuela Camino Lopez, MD, Hospital Gregorio Marañon, Madrid, Spain

10:00 a.m. **Warrior and Not Just a Survivor! Transplanting Patients With History of Cancer**
Neha Bansal, Children's Hospital at Montefiore, Bronx, NY USA

Whether heart transplantation will be appropriate for all cancer survivors and patients with cancer-therapy-related cardiotoxicity will require demonstrating similarly good outcomes to ensure proper organ allocation. This talk will discuss the trend, complications, and overall survival of heart transplantation for survivors of cancer and define selection criteria and diagnostic approach for candidates across the age-spectrum.

10:08 a.m. **A Heavy Problem: Weight Loss for the Obese Candidate**
Jong-Chan Youn, Seoul St. Mary's Hospital, The Catholic University of Korea, Seoul, South Korea

Because obesity is associated with inferior post-transplant outcomes, BMI>35 kg/m² is considered a relative or absolute contraindication to heart transplant at most centers. This talk will present data for weight loss techniques in children and adults, including bariatric surgery in LVAD or heart failure patients that may allow for subsequent transplantation.

10:16 a.m. **HLA Antibodies Do Not Bind Me: Transplanting the Highly Sensitized**
Kevin Daly, MD, Boston Children's Hospital, Boston, MA USA

This talk will present methodologies for transplanting patients with an elevated cPRA, including prospective or virtual crossmatch, methods and timing of desensitization, intra-operative plasma exchange, post-operative induction and immunosuppression management. Short- and long-term outcomes for both children and adults will be presented.

10:24 a.m. **When the First Transplant Fails: Heart Retransplantation in the Young Adult**
Amanda Vest, MBBS, MPH, Tufts Medical Center, Boston, MA USA

The talk will focus on heart retransplant in the young adult who has recently transitioned to the adult center capturing important clinical co-morbidities resulting from the first heart transplant, difficulties with transition to an adult care team, and psychosocial challenges associated with this population.

10:32 a.m. **Blood Group is Just a Speed Bump: Pushing the Limits in ABOi Transplants**
Simon Urschel, MD, University of Alberta, Edmonton, AB Canada

This talk will discuss the current practice of ABO-incompatible cardiac transplantation, its effect on waiting list mortality and time to transplant, and the clinical and immunologic outcomes after ABO-incompatible transplantation. Special attention will be focused on the whether this technique can be applied to older candidates and/or retransplant candidates with prior ABOi transplant.

10:40 a.m. **Panel Discussion and Audience Vote**

Thursday, 20 APRIL, 2023



10:00 – 11:00 a.m.

SESSION 31: Winter Soldier: Merging Basic and Clinical Science to Overcome Perioperative Challenges

Primary Core Therapy: LUNG

Secondary Core Therapies: HEART, PVD

Primary Practice Area: Pulmonology

Secondary Practice Areas: Cardiology, Cardiothoracic Surgery, Anesthesiology and Critical Care

Session Summary: This session will use a pro/con debate format to discuss two peri-operative topics critical for success of lung transplantation. The first debate will discuss lung preservation and the second debate will discuss best practices for bridging highly critical patients. There will be two pro/con debates in this session. Following each debate, co-chairs will lead a brief Q&A segment with the speakers and encourage questions from the audience.

Co-Chairs: Wiebke Sommer, MD, University of Heidelberg, Heidelberg, Germany
Asvin Ganapathi, MD, Ohio State University Wexner Medical Center, Columbus, OH USA
Alberto Benazzo, MD, PhD, Medical University of Vienna, Vienna, Austria

10:00 a.m. **DEBATE: How Would You Like Your Lung Cooked? Rare or Well Done? Rare: Lung Preservation at 4°C**
Shaf Keshavjee, MD, MSc, FRCSC, FACS, University Health Network, Toronto, ON Canada
In this Pro/Con Debate, an argument for lung preservation at 4°C will be made.

10:08 a.m. **DEBATE: How Would You Like Your Lung Cooked? Rare or Well Done? Well Done: Lung Preservation at 10°C**
Marcelo Cypel, MD, University Health Network, Toronto, ON Canada
In this Pro/Con Debate, an argument for lung preservation at 10°C will be made.

10:16 a.m. **Rebuttals/Q&A**

10:30 a.m. **DEBATE: ECMO on the Edge: Bridging the High Risk Recipient is Necessary (PRO)**
Jasleen Kukreja, MD, MPH, University of California San Francisco, San Francisco, CA USA
This speaker will argue for ECMO as a bridge to transplant for high risk candidates.

10:38 a.m. **DEBATE: ECMO on the Edge: Bridging the High Risk Recipient is Necessary (CON)**
Anne Olland, MD PhD, University Hospital Strasbourg, Strasbourg, France
This speaker will argue against ECMO as a bridge to transplant for high risk candidates.

10:46 a.m. **Rebuttals/Q&A**

Thursday, 20 APRIL, 2023



10:00 – 11:00 a.m.

SESSION 32: Medical Management of PH: Something Old, Something New, Something Borrowed, Something Blue

Primary Core Therapy: PVD

Secondary Core Therapies: LUNG, HEART

Primary Practice Area: Pharmacy and Pharmacology

Secondary Practice Areas: Pulmonology, Nursing & Allied Health, Cardiology, Pediatrics

Session Summary: There are a number of new agents being launched for PAH, there are also new strategies for PH - how do we put it all together to maximise benefit for diverse populations? This session, in Pecha Kucha format, will emphasize where these new treatments fit in and what it all means for the traditional triple therapy- what about the patient?

Pecha Kucha Format: the Japanese term for the sound of conversation ("chit chat"), this style symposium is designed to keep presentations concise and fast-paced. The session will begin with a brief description of the Unifying Theme, followed by five speakers who will each have 8 minutes to discuss the theme, using 20 slides total and only spending 20 seconds per slide. The last 20 minutes will be audience Q&A and a vote for the winning speaker.

Unifying Theme: Update in treatment strategies in PH / PAH with new agents

Co-Chairs: Jordan Whitson, MD, Duke University Medical Center, Durham, NC USA
Sara Strout, PharmD, Johns Hopkins Hospital, Baltimore, MD USA

10:00 a.m.

Something Old: Novel Regenerative Therapies for the Failing RV

Olaf Mercier, MD, PhD, Marie Lannelongue Hospital, Fontenay-aux-Roses, France

Stem cell therapy possesses revolutionary potential in treatment of patients with failing systemic RV. This discussion will address up-to-date clinical trials utilizing stem cell therapy to prevent RV failure, the ability to improve angiogenesis and mitigate oxidative stress in pressure overload.

10:08 a.m.

Something New: Sotatercept and Novel Small Molecules

James Coons, PharmD, University of Pittsburgh Medical Center, Pittsburgh, PA USA

New pathways are being targeted for PH - this talk will focus on Sotatercept but will also mention new small molecule treatments in pipeline and how these may fit among current treatments.

10:16 a.m.

Something Borrowed: Treating PH in ILD

Tanya McWilliams, MD, PhD, Auckland City Hospital, Auckland, New Zealand

In 4/2021, inhaled prostacyclin became the first FDA-approved therapy for pulmonary hypertension with interstitial lung disease (PH-ILD), including in patients with underlying connective tissue disease (CTD). A common clinical scenario confronting providers is the patient with precapillary PH in the context of ILD and CTD, where the precise etiology of PH (due to ILD or underlying CTD) is unclear, and considerable equipoise exists regarding the optimal therapeutic and management strategy. This talk fulfills the needs of PH specialists in exploring the options for targeted therapy in CTD with PH-ILD, exploring the evidence for and against inhaled prostacyclin therapy versus traditional PH combination targeted therapy in these patients. Speaker will also discuss use of Sildenafil for this indication.

10:24 a.m.

Happily Ever After: Best Combos, Best Outcomes

Amy Kiskaddon, PharmD, Johns Hopkins All Children's Hospital, St. Petersburg, FL USA

The speaker will discuss best evidence for treatment combinations of the available targeted therapies.

10:32 a.m.

Something Blue: Why Can't We Get Along Together?

Rachel Crackett, MSc, Freeman Hospital, Newcastle Upon Tyne, United Kingdom

The speaker will discuss various factors including the treatment burden of PH which prevents many patients being on gold standard treatments, e.g. IV Prostacyclin.

10:40 a.m.

Panel Discussion and Audience Vote

Thursday, 20 APRIL, 2023



1:00 – 2:30 p.m.

SESSION 36: The Achilles Heel: Frailty in Heart Transplant and LVAD Candidates

Primary Core Therapy: HEART

Secondary Core Therapies: MCS

Primary Practice Area: Cardiology

Secondary Practice Areas: Anesthesiology and Critical Care, Cardiothoracic Surgery, Nursing & Allied Health, Pediatrics

Session Summary: Frailty is an independent predictor of one-year all-cause mortality. Frailty assessment and depression and cognitive impairment evaluation in heart transplant (HTx) and LVAD candidates are mandatory. Pre-habilitation is associated to morbidity and mortality reduction in this patient population. This session will review the current approaches for frailty, depression, and cognitive impairment assessment in HTx and LVAD candidates and how to reduce their impact in this high-risk population. This session will conclude with a moderated panel discussion led by the co-chairs.

Co-Chairs: Fabiana Marcondes-Braga, MD, PhD, Heart Institute (InCor), Hospital das Clinicas, Universidade de Sao Paulo, São Paulo, Brazil
Brittany Koons, PhD, Villanova University M. Louise Fitzpatrick College of Nursing, Villanova, PA USA

1:00 p.m. **The Eyeball Test or The End of The Bed Assessment: How Can We Best Identify Patients Who May Benefit from a Prehabilitation Programme?**

Quin Denfeld, PhD, RN, Oregon Health and Science University, Portland, OR USA

In this talk we will review the main characteristics of patients with HF and frailty considering there are different phenotypes (including HTx and LVAD candidates), the presence of cardiovascular and non-cardiovascular frailty and the possibility of reversibility of this dynamic condition.

1:15 p.m. **When Frailty Doesn't Come Alone: How to Manage Depression and Cognitive Impairment**

Patrick Smith, PhD, MPH, University of North Carolina, Chapel Hill, NC USA

Clinical practice real-world data and registries have reported the high prevalence of depression and cognitive impairment in HF patients and their connection with frailty. This talk will review how to assess both conditions in frail HF patients.

1:30 p.m. **Less is More: Talking Frailty in Pediatric Heart Failure**

Kurt Schumacher, MD, MS, CS Mott Children's Hospital, Ann Arbor, MI USA

This talk will discuss how to assess and manage frailty in pediatric and adult congenital heart disease (e.g Fontans) and the unique challenges associated with it.

1:45 p.m. **Rehabilitation in The New Era: Ways to Adapt the Best Routine to The Right Patient**

Sarah Wright, DPT, Massachusetts General Hospital, Boston, MA USA

This talk will discuss the current approaches in the management of frail HF patients by incorporating different strategies. How to choose and tailor the intensity of each session regarding the different phenotypes and when to prefer individual or group sessions will also be discussed. Will discuss strategies for mobilizing the critical care patient with attention to ambulating temporary MCS patients.

2:00 p.m. **When "One Suit Fits All" Doesn't Work: Looking for a Multidimensional Tool for Frailty Dynamic Assessment**

Geetha Bhat, MD, The Christ Hospital, Cincinnati, OH USA

In this talk we will review the different scores used in the clinical practice to assess frailty. It is time to develop a new frailty score with prospective validation in a younger population including different phenotypes regarding frail HF population.

2:15 p.m. **Panel Discussion**

Thursday, 20 APRIL, 2023



1:00 – 2:30 p.m.

SESSION 37: I Spy With My Little Eye: Multimodal Imaging in Durable Mechanical Circulatory Support

Primary Core Therapy: MCS

Secondary Core Therapies: HEART

Primary Practice Area: Cardiothoracic Surgery

Secondary Practice Areas: Anesthesiology and Critical Care, Cardiology, Infectious Diseases, Nursing & Allied Health, Pediatrics, Research and Immunology

Session Summary: Left ventricular assist devices (LVADs) are an established treatment option for patients with end stage heart failure. However, the increased survival benefit and improved quality of life are still limited by adverse events. This session will describe the full spectrum of multimodality imaging for durable MCS, from preoperative implantation planning and postoperative management of complications to myocardial recovery and optimization of unloading strategies and thus clinical outcomes. This session will conclude with a moderated panel discussion led by the co-chairs.

Co-Chairs:

Linda Van Laake, MD, PhD, UMC Utrecht, Utrecht, Netherlands

Palak Shah, MD, MS, Inova Heart and Vascular Institute, Falls Church, VA USA

1:00 p.m.

Three-Dimensional Virtual Anatomical Fitting of Implantable VADs for Improved Clinical Outcomes

David Morales, MD, Cincinnati Children's Hospital, Cincinnati, OH USA

This talk will discuss 3D computed tomography (CT) reconstruction and virtual fit testing to assist MCS clinicians in selecting the best choice and fit for implanting VADs in adult and pediatric patients and to explore the lower limits of patient size for improved clinical outcomes.

1:15 p.m.

Utility of Intra- and Post-Operative Mapping Systems and Ablation of Ventricular Arrhythmia in LVAD Patients

Simon Pecha, MD, University Heart and Vascular Center Hamburg, Hamburg, Germany

Ventricular arrhythmias (VA) are well-known problems in LVAD patients. In this presentation, the role of intraoperative epicardial ablation to mitigate risk of post-implant VA, as well as electro-anatomic 3D mapping systems in patients with LVADs will be discussed.

1:30 p.m.

Role of Computed Tomography Imaging in Diagnosis and Management of LVAD Complications

Gloria Färber, MD, PhD, Uniklinikum Jena, Jena, Germany

LVAD-associated complications have unique pathophysiology. This talk will discuss common adverse events such as pump thrombosis, outflow graft obstruction, driveline infection, and the associated CT and FDG PET/CT imaging features and the role of imaging in their early detection and management.

1:45 p.m.

Anatomic Landmarks and LVAD Malposition Using Chest X-rays and Implications for Adverse Events

Thomas Schlöglhofer, MSc, Medical University of Vienna, Vienna, Austria

This presentation will review methods for evaluating preoperative anatomic landmarks and postoperative pump position from chest X-rays of LVAD patients in correlation to hemocompatibility related adverse events.

2:00 p.m.

Echocardiographic Parameters for Device Optimization: A Path to Better MCS Outcomes and Recovery?

Jerry Estep, MD, Cleveland Clinic, Cleveland, OH USA

This lecture will discuss how echocardiography-guided MCS optimization is associated with more favorable event-free survival and improved myocardial recovery. Novel aspects of 3D echocardiographic assessment of LV and RV volume, shape, and unloading will be presented.

2:15 p.m.

Panel Discussion

Thursday, 20 APRIL, 2023



1:00 – 2:30 p.m.

SESSION 38: The Unusual Suspects: Immune and Tissue Drivers of Lung Allograft Pathologies

Primary Core Therapy: LUNG

Secondary Core Therapies: HEART

Primary Practice Area: Research and Immunology

Secondary Practice Areas: Pulmonology, Cardiothoracic Surgery, Pediatrics

Session Summary: Lung allograft injury occurs through a diverse array of mechanisms. This session will discuss atypical contributors to the cascade of injury that occurs during the lifetime of an allograft. These presentations and discussion will review recent insights into metabolic and airway changes linked to poor transplant outcomes and advances in strategies to promote solid organ survival. Following each talk, co-chairs will lead a brief Q&A segment with the speaker and encourage questions from the audience.

Co-Chairs: Benjamin Renaud-Picard, MD, Nouvel Hopital Civil, Strasbourg, France
Christine Falk, PhD, Hannover Medical School, Hannover, Germany

- 1:00 p.m. **Myeloid Cell Metabolism in Lung Transplantation**
Andrew Gelman, PhD, Washington University School of Medicine, St. Louis, MO USA
This talk will review the latest discoveries into the metabolic regulation of neutrophil effector responses and antigen presenting cell activation that promote ischemia reperfusion injury and alloimmune responses.
- 1:12 p.m. **Q&A**
- 1:18 p.m. **Innate Lymphoid Cells: Nice Neighbors or Unruly Residents After Lung Transplant?**
Daniel Calabrese, MD, University of California, San Francisco, San Francisco, CA USA
This talk will review the immunobiology of NK cells and innate lymphoid cells in the lung and their role in propagating tissue injury or inducing tolerance. This talk will include discussion about the impact of these cells in both PGD and AMR.
- 1:30 p.m. **Q&A**
- 1:36 p.m. **Lymphocytes and Lymphatics: Implications for Tolerance**
Wayne Hancock, MD, PhD, Children's Hospital of Pennsylvania, Philadelphia, PA USA
This talk will review present knowledge on the metabolic requirements for lymphatic development and regulatory CD4+ T cell-mediated immunosuppression with its implications for promoting transplant tolerance.
- 1:48 p.m. **Q&A**
- 1:54 p.m. **Endothelium and Barrier Dysfunction in Lung Allograft Injury**
Ciara Shaver, MD, PhD, Vanderbilt University Medical Center, Nashville, TN USA
This talk will review present knowledge on endothelial dysfunction in the lung allograft and how this promotes allograft pathology.
- 2:06 p.m. **Q&A**
- 2:12 p.m. **Epithelial Cell Reprogramming: How Lung Transplant Injury Impacts Epithelial Cells**
John Greenland, MD, PhD, University of California, San Francisco, San Francisco, CA USA
Primary graft dysfunction, acute cellular and humoral rejection, and chronic lung allograft dysfunction directly impact the epithelium, driving pathology through changes in epigenetics, cell metabolism, and cell phenotype.
- 2:24 p.m. **Q&A**

Thursday, 20 APRIL, 2023



1:00 – 2:30 p.m.

SESSION 39: Righting a Wronged Ventricle

Primary Core Therapy: PVD

Secondary Core Therapies: HEART, LUNG, MCS

Primary Practice Area: Anesthesiology and Critical Care

Secondary Practice Areas: Cardiology, Cardiothoracic Surgery, Nursing & Allied Health, Pulmonology

Session Summary: This session will focus on the diagnosis and management of acute RV failure in the ICU under various clinical settings. Following each talk, co-chairs will lead a brief Q&A segment with the speaker and encourage questions from the audience.

Co-Chairs: Marc Simon, MD, MS, University of California San Francisco, San Francisco, CA USA
Alessandra Verzelloni Sef, MD, Harefield Hospital, Royal Brompton and Harefield Hospitals, London, UK

1:00 p.m. **Pathophysiology of Acute RV Failure: Impact on End Organs?**
Christopher Barnett, MD, MPH, University of California, San Francisco, San Francisco, CA USA
This talk will review the mechanisms of acute RV failure in the ICU, with focus on the impact of acute RV failure on other organs (liver, kidneys, etc.).

1:15 p.m. **Q&A**

1:18 p.m. **Acute RV Failure in PAH: Diagnosis and Management Pearls**
John Granton, MD, University of Toronto, Toronto, ON Canada
This talk will focus on the hemodynamics, treatment including therapeutic targets and advanced therapies in PAH.

1:33 p.m. **Q&A**

1:36 p.m. **RV Failure Management in Hypoxic Lung Failure/Bridge to Lung Transplantation**
Michael Perch, MD, Rigshospitalet, Copenhagen University Hospital, Copenhagen Denmark
This talk will address the management of PH and RV failure and hypoxemia caused by ILD in a critically ill patient.

1:51 p.m. **Q&A**

1:54 p.m. **Right Heart Failure in Left Heart Failure/Cardiogenic Shock**
Filio Billia, MD, PhD, University Health Network, Toronto, ON Canada
This talk will address the management of RV failure/biventricular failure in patients presenting with LV failure related cardiogenic shock.

2:09 p.m. **Q&A**

2:12 p.m. **Toolbox for Acute RV Failure**
Anna Meyer, MD, University Hospital Heidelberg, Heidelberg Germany
This talk will focus on temporary mechanical circulatory support therapies in acute RV failure.

2:27 p.m. **Q&A**

Thursday, 20 APRIL, 2023



3:00 – 4:00 p.m.

SESSION 43: Would You Rather: Choices at the End of the Shock Road

Primary Core Therapy: MCS

Secondary Core Therapies: HEART

Primary Practice Area: Cardiology

Secondary Practice Areas: Cardiothoracic Surgery

Session Summary: This session, in a “Game Show” style, will show a cardiogenic shock case that highlights the decision-making needed in these critically sick patients - from accurate prognostication to promotion of cardiac recovery promotion versus urgent need for heart transplant or left ventricular assist device.

Game Show Style: The symposium will begin with one of the Co-Chairs presenting Case Scenarios of a potential recipient and a potential donor. Then four “contestants” (speakers) will each have 8 minutes to explain their position on whether or not the donor (or Case Scenario) is acceptable. A 20-minute audience Q&A segment led by the Co-Chairs will follow each set of speakers with an audience vote for the winning speaker.

Donor Case Scenario: Donor is a 48 year old male donor who died of a cocaine overdose and a brief cardiac arrest. Virtual crossmatch is compatible. Angio unobtainable.

Recipient Case Scenario: A previously healthy woman presents with cardiogenic shock and biventricular failure after her 5th pregnancy. She improves with temp MCS but is unable to be weaned.

Co-Chairs: Matthew Lander, MD, Allegheny Health Network, Pittsburgh, PA USA
David McGiffin, MBBS, FRACS, Alfred Health, Melbourne, Australia
Shelley Hall, MD, Baylor University Medical Center, Dallas, TX USA

3:05 p.m.

Transplant Her!

Christopher Hayward, MD, St. Vincent's Hospital, Sydney, Australia

This “contestant” will discuss how transplanting her is the best path forward.

3:13 p.m.

Durable LVAD and Temporary RVAD Wean!

Anna Meyer, MD, University of Heidelberg, Heidelberg, Germany

This “contestant” will discuss how placing a durable LVAD and weaning a temporary RVAD is the best path forward.

3:21 p.m.

Keep the Heart and Put Bivads Now!

Christopher Salerno, MD, University of Chicago, Chicago, IL USA

This “contestant” will discuss how keeping the heart and adding biventricular support is the best path forward.

3:29 p.m.

Remove the Heart and Move On Mechanically!

Francisco Arabia, MD, MBA, Banner University Medical Center, Phoenix, AZ USA

This “contestant” will discuss how removing the heart and adding biventricular support is the best path forward.

3:37 p.m.

Panel Discussion and Audience Vote

Thursday, 20 APRIL, 2023



3:00 – 4:00 p.m.

SESSION 44: Mountain for Every Miracle! Field of Cardio-Oncology: The High-Yield Tips

Primary Core Therapy: HEART

Secondary Core Therapies: MCS

Primary Practice Area: MULTI

Secondary Practice Areas: Cardiology, Nursing & Allied Health, Pathology, Pharmacy and Pharmacology, Research and Immunology

Session Summary: In recent years, cardio-oncology has emerged as a highly relevant topic in the HF community. With rising cancer survival rates, the use of durable LVADs and HTx are now considered for increasing numbers of cancer survivors. This session will provide high yield cardio-oncology tips to HF providers, focusing on key considerations for patients with advanced HF and a history of cancer, surveillance and management of cancer or PTLT after HTx, and the emerging role of immunotherapy after heart transplantation. This session will conclude with a moderated panel discussion led by the co-chairs.

Co-Chairs:

Maria Crespo-Leiro, MD, Hospital Universitario A Coruña, La Coruña Spain

Richard Cheng, MD, MSc, University of Washington Medical Center, Seattle, WA USA

3:00 p.m.

Broken Hearts – LVAD or Heart Transplant in Patients With Recent Cancer: Who and When?

Bhavadharini Ramu, MD, Medical University of South Carolina, Charleston, SC USA

Discuss considerations for patients with prior or active cancer before AHFT. (1) Review the epidemiology of advanced HF in patients with prior or active cancer. (2) For which patients with history of cancer is LVAD an option? (3) Managing risks of bleeding, thrombosis and infection (4) Review of the data on HTx in patients with history of cancer.

3:15 p.m.

Double Jeopardy: Managing Risk in Heart Transplant and MCS Patients With a History of Malignancy

Yael Peled, MD, Sheba Medical Center, Tel Aviv, Israel

There are two major considerations for this talk: (1) Management of the patient with a history of cancer after HTx or LVAD and (2) Risk for de novo cancer in a heart transplant patient on chronic immunosuppression and reduced immunosurveillance.

3:25 p.m.

DEBATE: New Kids on the Block! Immunotherapy Can Be Employed in Heart Transplant Recipients With Cancer (PRO)

Kiran Mirza, MD, Rigshospitalet, Copenhagen, Denmark

Pro perspective for using immunotherapies in HTx recipients; the oncologic benefits exceed the cardiac risks. If using immunotherapy, how do we balance risk for rejection with treating the cancer? Also, is there a role for increased surveillance (e.g. echo or cfDNA)?

3:35 p.m.

DEBATE: New Kids on the Block! Immunotherapy Can Be Employed in Heart Transplant Recipients With Cancer (CON)

Maria Crespo-Leiro, MD, Hospital Universitario A Coruña, La Coruña, Spain

Con perspective arguing against immunotherapy use in HTx patients; cardiac risks outweigh potential oncologic benefits. Even with monitoring, identification of acute rejection may be too late. Too little is known about ICI use in HTx and their use in this group should be limited to clinical trials.

3:45 p.m.

Panel Discussion

Thursday, 20 APRIL, 2023



3:00 – 4:00 p.m.

SESSION 45: PTLD After Thoracic Organ Transplantation: New Considerations and Novel Therapies

Primary Core Therapy: LUNG

Secondary Core Therapies: HEART

Primary Practice Area: Pulmonology

Secondary Practice Areas: Cardiology, Pharmacy and Pharmacology, Pathology

Session Summary: As survival after thoracic transplantation has improved, transplant recipients are more frequently developing malignancies, including post-transplant lymphoproliferative disorder (PTLD). During the session, we will review how immunosuppression changes immune surveillance for malignancy and provide updated knowledge of PTLD incidence, risk factors, pathogenesis, pathological classification, and diagnostic biomarkers, and novel therapeutic approaches for management of PTLD. Following each talk, co-chairs will lead a brief Q&A segment with the speaker and encourage questions from the audience.

Co-Chairs: Nandini Nair, MD, PhD, Texas Tech University Health Sciences, Lubbock, TX USA
Heather Strah, MD, University of Nebraska Medical Center, Omaha, NE USA

- 3:00 p.m. ***Impaired Immunosurveillance in Post-Transplant Malignancies***
Lorenzo Zaffiri, MD, PhD, Cedars-Sinai Heart Institute, Los Angeles, CA USA
This talk will summarize the mechanisms contributing to failure of immune surveillance and development of post-transplant malignancies.
- 3:15 p.m. **Q&A**
- 3:20 p.m. ***Pathological Classification of PTLD and Risk Factors for Disease***
Francesca Lunardi, MD, ScD, PhD, University of Padova, Padova, Italy
This talk will discuss the pathogenesis, pathology, and emerging biomarkers of PTLD as well as risk factors for PTLD in both adult and pediatric lung transplant recipients.
- 3:35 p.m. **Q&A**
- 3:40 p.m. ***Novel Therapeutic Strategies for Management of PTLD***
Carlo Iasella, PharmD, MPH, University of Pittsburgh, Pittsburgh, PA USA
This talk will review the current therapeutic approaches for the management of PTLD as well as discuss the use of novel off-the-shelf virus-specific T cells for PTLD.
- 3:55 p.m. **Q&A**

Thursday, 20 APRIL, 2023



3:00 – 4:00 p.m.

SESSION 46: Suspicious Minds: Immunizations in the Pre- and Post-Transplant Period

Primary Core Therapy: MULTI

Secondary Core Therapies: HEART, LUNG

Primary Practice Area: Pediatrics

Secondary Practice Areas: Infectious Diseases, Pharmacy and Pharmacology

Session Summary: A session to discuss the controversy/science surrounding immunizations in pediatric patients pre and post-transplant. Specific topics include: COVID-19 immunization/booster requirements for pediatric patients/caregivers, live-attenuated immunizations, mitigating negative press/social media, and the ethics of refusing to list patients who refuse vaccines. This session will conclude with a moderated panel discussion led by the co-chairs.

Co-Chairs: Karen Doucette, MD, MSc. University of Alberta, Edmonton, AB Canada
Amy Kiskaddon, PharmD, Johns Hopkins All Children's Hospital, St. Petersburg, FL USA

3:00 p.m.

Bridge Over Troubled Water: Challenges and Ethics of Immunizations in Pediatric Patients

Olivia Kates, MD, MA, Johns Hopkins University, Baltimore, MD USA

Accurately conveying scientific evidence about vaccine adverse events concerns raised by patients/caregivers, ethics of refusing to list patients who refuse vaccines, how to mitigate/manage negative news press/social media regarding immunization requirements for transplant patients.

3:15 p.m.

If I Can Dream: Live-Attenuated Immunizations?

Anne Dipchand, MD, The Hospital for Sick Children, Toronto, ON Canada

Discussion regarding live-attenuated immunizations in pediatric heart and lung transplant recipients. While historically, such vaccines have been avoided in solid organ transplant recipients, there is interest whether the benefits of certain live-attenuated immunization outweigh risks.

3:30 p.m.

A COVID-19 Immunization Trilogy: Requirements for Pediatric Transplant Recipients and Caregivers

Joseph Spinner, MD, Baylor College of Medicine, Houston, TX USA

Discussion of most up-to-date evidence for COVID-19 immunization/booster requirements in patients/caregivers of heart/lung pediatric transplant recipients, knowing as facts change, the degree of benefit gained and infringement on access to transplant/caregiver choice that is tolerated will change

3:45 p.m.

Panel Discussion

Friday, 21 APRIL, 2023



8:00 – 9:00 a.m.

SESSION 50: Assessment of COVID-19 Positive Donor for Heart Transplant

Primary Core Therapy: HEART

Secondary Core Therapies: NONE

Primary Practice Area: MULTI

Secondary Practice Areas: Cardiology, Cardiothoracic Surgery, Infectious Diseases, Pediatrics

Session Summary: This symposium will ask speakers to argue “for” or “against” specific aspects of accepting a COVID-19 positive donor for heart transplant, providing the audience a brief review of the available (albeit limited) primary literature on this topic and provide clinicians a systematic approach to evaluating a COVID-19 positive donor, the recipient for such a donor, and controversies around prophylaxis and treatment of the recipient after transplant. The symposium will begin with one of the Co-Chairs presenting Case Scenarios of a potential recipient and a potential donor. Then three 'contestants' (speakers) will each have 12 minutes to explain their position on whether or not the donor (or Case Scenario) is acceptable. A 20-minute audience Q&A segment led by the Co-Chairs will conclude with an audience vote for the winning speaker.

Donor Case Scenario: 28 female COVID-vaccinated, died of opioid overdose with no symptoms of COVID-19. Nasopharyngeal swab was COVID-19 positive (cycle threshold 26); chest x-ray shows right middle lobe (RML) infiltrate.

Recipient Case Scenario: 52 female COVID-vaccinated, Blood type A, BMI 26 with stage D NICM listed status 6 for transplant with INTERMACS 5 exertion intolerant profile.

Co-Chairs: Christopher Link, MD, Allegheny Health Network, Pittsburgh, PA USA
Kiran Mirza, MD, Rigshospitalet, Copenhagen, Denmark

8:04 a.m. **Approach to Donor Evaluation**
Yael Peled, MD, Sheba Medical Center, Ramat Gan, Israel

This “contestant” will discuss how to evaluate a COVID-19 positive donor, including interpretation of test results and the significance of the site sampled.

8:16 a.m. **Approach to Recipient Evaluation and Consent**
Rebecca Kumar, MD, Georgetown University Hospital Center, Washington, DC USA

This “contestant” will discuss how to evaluate and consent a recipient who is offered an organ from a COVID-19 positive donor, as well as management of recipients not fully up to date on vaccines.

8:28 a.m. **Therapies for the Recipients of COVID-19 Positive Donors**
Paolo Grossi, MD, PhD, University of Insubria, Varese, Italy

This “contestant” will discuss the role of prophylaxis as well as therapeutics including monoclonal antibodies, remdesivir.

8:40 a.m. **Panel Discussion and Audience Vote**

Friday, 21 APRIL, 2023



8:00 – 9:00 a.m.

SESSION 51: High Yield Tips for LVAD or Heart Transplant in Cause-Specific
Cardiomyopathies

Primary Core Therapy: HEART

Secondary Core Therapies: MCS

Primary Practice Area: MULTI

Secondary Practice Areas: Cardiology, Pathology, Pharmacy and Pharmacology, Research and Immunology

Session Summary: This session, in Pecha Kucha format, will explore nuances of selecting advanced heart failure therapies in systemic diseases with extra-cardiac manifestations and cause-specific cardiomyopathies in which clear triggers for advanced treatment are not easily identified.

Pecha Kucha Format: the Japanese term for the sound of conversation (“chit chat”), this style symposium is designed to keep presentations concise and fast-paced. The session will begin with a brief description of the Unifying Theme, followed by five speakers who will each have 8 minutes to discuss the theme, using 20 slides total and only spending 20 seconds per slide. The last 20 minutes will be audience Q&A and a vote for the winning speaker.

Unifying Theme: In certain types of cardiomyopathy and systemic diseases that lead to advanced heart failure, there is clinical equipoise about (1) appropriate timing for advanced therapies such as heart transplantation (2) appropriate patient selection in the setting of extra-cardiac disease. This session will explore different scenarios that highlight such challenges.

Co-Chairs: Josef Stehlik, MD, MPH, University of Utah, Salt Lake City, UT USA
Ana Roussoulières, MD, PhD, Cliniques Universitaires de Bruxelles, Brussels, Belgium

8:00 a.m. **AHFT in Hypertrophic Cardiomyopathy: Balancing Risk-Benefit and When to Pull the Trigger**
Marta Farrero Torres, MD, PhD, Hospital Clinic de Barcelona, Barcelona, Spain

The speaker will discuss how to decide timing for transplantation in hypertrophic cardiomyopathy? assessing concerns regarding pulmonary hypertension, functional status and role of cardiac output/index. The talk will also explore decision making for advanced therapies in the setting of concurrent renal or hepatic insufficiency.

8:08 a.m. **AHFT in Sarcoidosis: Considering Appropriate Strategies for Advanced Heart Failure**
Finn Gustafsson, MD, PhD, Rigshospitalet, Copenhagen, Denmark
This talk will examine (1) approach to biventricular dysfunction and arrhythmias when considering LVAD (2) strategies for immunosuppression and surveillance after transplant (3) considerations for how to manage extra-cardiac involvement (hepatic or renal involvement).

8:16 a.m. **AHFT in Amyloidosis: When Can a Systemic Disease Have a Cardiac Solution?**
Michelle Kittleson, MD, PhD, Cedars-Sinai Heart Institute, Los Angeles, CA USA
This talk will examine patient selection and post-transplant considerations in patients with AL or ATTR cardiac amyloidosis and extra-cardiac disease.

8:24 a.m. **AHFT in ARVC: What Do We Do When the Right Heart Fails?**
Mrudula Munagala, MD, University of Miami, Miami, FL USA
This talk will explore (1) how to characterize RV failure in this population (2) appropriate timing for advanced therapies in patients with ARVC with respect to arrhythmias, worsening right heart failure and (3) circulatory support strategies to bridge to transplant.

8:32 a.m. **It's Not Only a Broken Heart: Muscular Dystrophy**
Pradeep Mammen, MD, FACC, FAHA, FHFSA, UT Southwestern Medical Center, Dallas, TX USA
Patients with muscular dystrophy can have associated myocardial involvement leading to advance heart failure needing heart transplantation. When should we propose heart transplantation for those patients? The speaker will examine also how concerns regarding skeletal muscle and pulmonary involvement affect patient selection.

8:40 a.m. **Panel Discussion and Audience Vote**

Friday, 21 APRIL, 2023



8:00 – 9:00 a.m.

SESSION 52: Immune Checkpoints in Thoracic Transplantation: Lessons Learned from Cancer

Primary Core Therapy: LUNG

Secondary Core Therapies: HEART

Primary Practice Area: MULTI

Secondary Practice Areas: Cardiology, Research and Immunology, Cardiothoracic Surgery, Pathology, Pharmacy and Pharmacology, Pulmonology

Session Summary: This session, in Pecha Kucha format, will discuss immune checkpoint inhibitors and how they may be used as new immunomodulatory tools for thoracic organ transplant recipients. Each speaker will focus on a different aspect of immune checkpoint biology, ranging from basic mechanisms of action to detection and quantification of checkpoint activation to use of these medications in transplant recipients.

Pecha Kucha Format: the Japanese term for the sound of conversation ("chit chat"), this style symposium is designed to keep presentations concise and fast-paced. The session will begin with a brief description of the Unifying Theme, followed by five speakers who will each have 8 minutes to discuss the theme, using 20 slides total and only spending 20 seconds per slide. The last 20 minutes will be audience Q&A and a vote for the winning speaker.

Unifying Theme: A state-of-the-art analysis of immune checkpoints: from the knowledge accumulated in oncology to their likely role in tolerance/lack thereof, focusing on possible innovative therapeutic protocols.

Co-Chairs: Ravi Kumar Ratnagiri, MD, PhD, MGM Hospital Chennai India, Chennai, India
Lorenzo Rosso, MD, PhD, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy

- 8:00 a.m. **Review of the Immune Checkpoint System in Thoracic Transplant and Malignancy**
Eric Morell, MD, University of Washington, Seattle, WA USA
This talk will give a brief review of immune checkpoint pathways and what has been learned from thoracic oncology to apply to thoracic transplantation.
- 8:08 a.m. **Tools to Evaluate the Immune Checkpoint Cascade in the Heart and Lung**
Prodipto Pal, MD, PhD, University of Toronto, Toronto, ON Canada
This talk will discuss methods for assessing immune checkpoint pathway activation or inhibition in biological samples from heart and lung transplant patients.
- 8:16 a.m. **Is Thoracic Allograft Rejection Caused By Checkpoint Receptors? Lessons Learned From Oncology**
Letizia Corinna Morlacchi, MD, University of Milan, Milano, Italy
This talk will discuss what is known about immune checkpoint inhibitors triggering T-cell immune responses that may contribute to rejection.
- 8:24 a.m. **Ice and Fire: Treating Malignancy With Checkpoint Inhibition After Thoracic Transplantation**
Michael Shullo, PharmD, West Virginia University Hospitals, Morgantown, WV USA
This talk will review the risks and benefits of immune checkpoint inhibitor use during treatment for malignancy in thoracic transplant recipients.
- 8:32 a.m. **Present and Future Applications: Engineering the Immune Checkpoint System to Promote Tolerance**
Daniel Kreisel, MD, PhD, Washington University SoM, St. Louis, MO USA
This talk will discuss how interruption of immune checkpoint pathways may be manipulated as a novel form of immunosuppression by inducing tolerance of organ allografts.
- 8:40 a.m. **Panel Discussion and Audience Vote**

Friday, 21 APRIL, 2023



8:00 – 9:00 a.m.

SESSION 53: It Takes a Village: The Multi-Disciplinary Approach to Durable LVAD Candidacy

Primary Core Therapy: MULTI

Secondary Core Therapies: MCS, HEART

Primary Practice Area: MULTI

Secondary Practice Areas: Cardiology, Cardiothoracic Surgery, Nursing & Allied Health, Pediatrics

Session Summary: In this Pecha Kucha style session we will discuss LVAD candidacy based on multi-disciplinary discussions (surgeon v cardiologist v anaesthesiologist) with special focus on the importance of special psychosocial aspects.

Pecha Kucha Format: the Japanese term for the sound of conversation (“chit chat”), this style symposium is designed to keep presentations concise and fast-paced. The session will begin with a brief description of the Unifying Theme, followed by five speakers who will each have 8 minutes to discuss the theme, using 20 slides total and only spending 20 seconds per slide. The last 20 minutes will be audience Q&A and a vote for the winning speaker.

Unifying Theme: LVAD candidacy

Co-Chairs:

Sarah Schroeder, ACNP-BC, MSN RN, Bryan Heart, Lincoln, NE USA

Stephan Schueler, MD, PhD, FRCS, Freeman Hospital, Newcastle Upon Tyne, United Kingdom

Hari Tunuguntla, MD, Texas Children's Hospital, Houston, TX USA

8:00 a.m.

The CT Surgeon's Perspective for LVAD Candidacy

Diyar Saeed, MD, PhD, Leipzig Heart Center, Leipzig, Germany

The speaker will discuss their approach with focus on the cardiothoracic surgeons' point of view. For instance: impact of patient's cachexia, biological age, frailty (determined during a 10 min meeting with the patient), history of thoracic surgeries, need for concomitant surgeries etc.

8:08 a.m.

The Cardiologist's Perspective for LVAD Candidacy

Melana Yuzefpolskaya, MD, Columbia University Medical Center, New York, NY USA

The speaker will discuss their approach with focus on a cardiologist's take on LVAD candidacy. Factors to be included age, lung function, BMI(?), functional capacity, pharmaceutical changes, etc.

8:16 a.m.

The Anesthesiologist's Perspective on LVAD Candidacy

Eric de Waal, MD PhD, University Medical Centre, Utrecht, Netherlands

The speaker will discuss their approach with focus on the anaesthesiologists' perspective on LVAD candidacy, including a discussion of factors such as age, BMI, medical history, blood loss, and functional capacity etc. Other factors of importance for the anaesthesiologists perspective on candidacy may be included.

8:24 a.m.

The Adult Psychosocial Perspective on LVAD Candidacy

Heike Spaderna, PhD, Trier University, Trier Germany

The speaker will outline the importance of psychosocial factors that should be considered before accepting a complex case to receive an LVAD.

8:32 a.m.

The Pediatric Psychosocial Perspective on LVAD Candidacy

Melissa Cousino, PhD, University of Michigan, Ann Arbor, MI USA

The speaker will outline pediatrics approach to evaluate candidacy for MCS.

8:40 a.m.

Panel Discussion and Audience Vote

Friday, 21 APRIL, 2023



9:30 – 11:00 a.m.

SESSION 57: Novel Desensitization Approaches to Facilitate Transplantation for Highly Sensitized Candidates

Primary Core Therapy: MULTI

Secondary Core Therapies: HEART, LUNG

Primary Practice Area: MULTI

Secondary Practice Areas: Cardiology, Cardiothoracic Surgery, Pathology, Pharmacy and Pharmacology, Pulmonology, Pediatrics, Research and Immunology

Session Summary: Desensitization regimens must consider temporal changes in thoracic transplant candidates. A rising incidence is anticipated due to the expanding indications for heart and lung transplantation, particularly in medically complex patients. Novel strategies to desensitize patients that target multiple steps of donor-specific antibody (DSA) production will be considered and anticipated. Discussion will include novel approaches for desensitizing highly sensitized patients awaiting transplant and thereby facilitate their transplantation, identifying clinically irrelevant HLA antibodies, the importance of CPRA points and virtual crossmatch to facilitate transplant under the revised heart & lung allocation policies, and novel approaches to enable the desensitization of highly sensitized patients and facilitate transplantation. The session will conclude with a moderated panel discussion led by the co-chairs.

Co-Chairs: Rajalingam Raja, University of California San Francisco, San Francisco, CA USA
Jon Kobashigawa, MD, Cedars-Sinai Heart Institute, Los Angeles, CA USA

9:30 a.m. **Acceptable HLA Antibodies in Heart and Lung Transplantation**
Fabio Ius, MD, Hannover Medical School, Hannover, Germany

Discuss the identification of clinically acceptable HLA Ab in heart and lung transplantation. This will highlight how less injurious HLA Ab like HLA-C or DP DSAs may not cause rejection or how transfusion-induced HLA Ab are unstable and do not rebound post-H/L Tx. The talk will also address how de novo DSA may be more problematic for development of chronic rejection.

9:45 a.m. **Value of CPRA and Virtual Crossmatch in New Heart and Lung Allocation Algorithms in Transplanting Sensitized Patients**
Shelley Hall, MD, Baylor University Medical Center, Dallas, TX USA

Discuss the revised heart and lung allocation policy proposals that eliminate the Donation Service Area and Region as distribution units. Discuss the importance of CPRA points and virtual crossmatch in facilitating the transplantation of highly sensitized patients.

10:00 a.m. **Plasma Cell Targeted Desensitization Strategies**
Marlena Habal, MD, Columbia University Medical Center, New York, NY USA

Synergism between plasma cell targeted approaches to desensitization, including daratumumab and belatacept facilitating heart and lung transplantation; Dr. Habal will discuss her ongoing research on the role of belatacept as an approach to desensitize HS-Pt as well as future plans to investigate this.

10:15 a.m. **IL-6 Inhibitor Based Desensitization Strategies**
Joren Madsen, MD, DPhil, Massachusetts General Hospital, Boston, MA USA

Discuss pipeline of IL-6 and IL-6R inhibitors in both heart and lung transplantation, including the future of these agents in thoracic transplantation and their ongoing investigation.

10:30 a.m. **Autologous Chimeric Antigen Receptor Engineered T cell (CARs-T) Immunotherapy for Desensitization of Patients Awaiting Transplantation**
Ali Naji, MD, PhD, University of Pennsylvania, Philadelphia, PA USA

Speaker will discuss how CARs-T can be applied to highly sensitized candidates for thoracic organ transplantation, informed by randomized clinical trial data regarding use of CARs-T in highly sensitized renal transplant candidates.

10:45 a.m. **Panel Discussion**

Friday, 21 APRIL, 2023



9:30 – 11:00 a.m.

SESSION 58: For All Ages: MCS Support in Congenital Heart Disease in Children and Adults

Primary Core Therapy: MCS

Secondary Core Therapies: HEART

Primary Practice Area: Pediatrics

Secondary Practice Areas: Cardiology, Anesthesiology and Critical Care, Cardiothoracic Surgery, Nursing & Allied Health

Session Summary: MCS in congenital heart disease (CHD) is ever evolving and guidelines are limited. Updated best practices for device selection, strategies, and management for heart failure for children and adults with CHD will be presented and discussed. Following each talk, co-chairs will lead a brief Q&A segment with the speaker and encourage questions from the audience.

Co-Chairs: David Morales, MD, Cincinnati Children's Hospital, Cincinnati, OH USA
Nathalie Roy, MD, Boston Children's Hospital, Boston, MA USA

- 9:30 a.m. **Use of ECMO for Acute Decompensated Heart Failure in CHD**
Antonio Amodeo, MD, Ospedale Pediatrico Bambino Gesù, Roma, Italy
How is ECMO best utilized in supporting acute decompensated heart failure in children and adults with CHD? Optimal ECMO utilization, cannulation, and management practices for the complex CHD patient will be shared.
- 9:45 a.m. **Q&A**
- 9:48 a.m. **Use of Temporary Circulatory Support for Acute Decompensated Heart Failure in CHD**
Sebastian Tume, MD, Texas Children's Hospital, Houston, TX USA
Novel uses of Impella and other (non-ECMO) TCS for older children and adults with CHD heart failure will be presented. Indications, patient selection, device strategy, implantation, management will be explored.
- 10:03 a.m. **Q&A**
- 10:06 a.m. **Longer-Term Ventricular Assist Device Selection for CHD: From Neonates to Adults**
Jennifer Conway, University of Alberta, Edmonton, AB Canada
The complex decision-making and updated best practices in longer-term device selection for CHD patients will be presented. Updated strategies for supporting small neonates/infants with CHD will be highlighted.
- 10:21 a.m. **Q&A**
- 10:24 a.m. **What's the Difference? Pre-VAD Implant Evaluation and Considerations for the Patient with Fontan Circulation**
David Peng, MD, University of Michigan, Ann Arbor, MI USA
Durable VAD indications, patient selection, and careful pre-operative evaluation (including imaging, catheterization/intervention, extracardiac status) unique to the patient with Fontan circulation will be discussed.
- 10:39 a.m. **Q&A**
- 10:42 a.m. **What's the Difference? Post-Operative VAD Management and Complications in the Patient with Fontan Circulation**
Peta Alexander, MBBS, Boston Children's Hospital, Boston, MA USA
Patient and device management and optimization after VAD implant in the patient with Fontan circulation will be presented. Strategies for unique Fontan-associated complications will be shared.
- 10:57 a.m. **Q&A**

Friday, 21 APRIL, 2023



9:30 – 11:00 a.m.

SESSION 59: Die Hard: Preventing and Managing Hard-to-Treat Fungal and Bacterial Infections in the Perioperative Setting

Primary Core Therapy: LUNG

Secondary Core Therapies: HEART

Primary Practice Area: MULTI

Secondary Practice Areas: Anesthesiology and Critical Care, Pulmonology, Cardiology, Infectious Diseases, Pharmacy

Session Summary: This session will focus on novel aspects to manage perioperative infections. A range of topics from recipient colonization, emerging fungal agents and anti-infective considerations (inhaled and ECMO) will be discussed by a range of experts in their field. Following each talk, co-chairs will lead a brief Q&A segment with the speaker and encourage questions from the audience.

Co-Chairs: Paulo M. Pego-Fernandes, MD, PhD, Universidade de Sao Paulo, São Paulo, Brazil
Georgina Waldman, PharmD, BCTXP, Massachusetts General Hospital, Boston, MA USA

9:30 a.m. **Brace Yourself - Infections are Coming: Bacterial Colonization Management**
Fernanda Silveira, MD, MS, University of Pittsburgh Medical Center, Pittsburgh, PA USA

This talk will focus on management of pre-transplant colonization of complicated infections: Burkholderia cenocepacia, multi-drug resistant organisms (carbapenem-resistant Enterobacteriaceae (CRE), carbapenem-resistant Acinetobacter, and Clostridioides difficile

9:43 a.m. **Q&A**

9:48 a.m. **Every Breath You Take: Inhaled Anti-Infective Delivery Options**
Monique Malouf, FRACP, St. Vincent's Hospital, Sydney, Australia

This talk will focus on inhaled anti-infective for pre-transplant colonization of complicated bacterial and fungal infections with relevance to anastomosis management. Systemic absorption, pharmacokinetics, and side effect profiles of inhaled agents will also be discussed.

10:01 a.m. **Q&A**

10:06 a.m. **Fungus is Among Us: Emerging Life-Threatening Fungal Infections in Thoracic Transplant**
Me-Linh Luong, MD, Centre Hospitalier de l'Université de Montréal, Montreal, QC Canada

This talk will focus on the management of Lomentospora prolificans and Scedosporium apiospermum infection before and after thoracic transplantation.

10:19 a.m. **Q&A**

10:24 a.m. **Sequestered: Anti-Microbial Loss in the ECMO Circuit**
Haifa Lyster, MSc, FRPharmS, FFRPS, Royal Brompton & Harefield Clinical Group, Harefield, UK

This talk will focus on pharmacokinetic changes of anti-microbial agents in ECMO patients. Recommendations for dose adjustments will be discussed for agents most commonly used in the perioperative settings.

10:37 a.m. **Q&A**

10:42 a.m. **Not So Small At All: Perioperative Bacterial and Fungal Infections in Pediatric Thoracic Transplant**

Lara Danziger-Isakov, MD, MPH, Cincinnati Children's Hospital, Cincinnati, OH USA

This talk will focus on risk factors and outcomes of hard-to-treat fungal infection and MDR bacteria after pediatric thoracic transplantation

10:55 a.m. **Q&A**

Friday, 21 APRIL, 2023



9:30 – 11:00 a.m.

SESSION 60: What's New with the ESC/ERS Guidelines 2022 for Pulmonary Hypertension

Primary Core Therapy: PVD

Secondary Core Therapies: HEART, LUNG

Primary Practice Area: MULTI

Secondary Practice Areas: Cardiology, Cardiothoracic Surgery, Nursing & Allied Health, Pulmonology

Session Summary: The updated guidelines for PH were published in August 2022 with significant changes to the definition, diagnostic and therapeutic approach to PH. This session will review key changes and discuss the clinical implications of the change on our daily practices. Following each talk, co-chairs will lead a brief Q&A segment with the speaker and encourage questions from the audience.

Co-Chairs: Erika Rosenzweig, MD, Columbia University, New York, NY USA
Colin Church, BSC(Hons), PhD, FRCP, Golden Jubilee National Hospital, Glasgow, United Kingdom

9:30 a.m.

Hemodynamic Definition of PH: An Update

Ryan Tedford, MD, Medical University of South Carolina, Charleston, SC USA

Focus on the updated definition and classification of pulmonary hypertension, with focus on PAH.

9:45 a.m.

Q&A

9:48 a.m.

Initial Treatment Approach and Sequential Escalation of Therapies in PAH

Jean-Luc Vachery, MD, CUB Hôpital Erasme, Brussels, Belgium

Focus on the updated approach to initial therapy and escalation of therapy in PAH

10:03 a.m.

Q&A

10:06 a.m.

Treatment Goals in PAH

Mardi Gomberg-Maitland, MD, MSc, George Washington University, Washington, DC USA

Review the updated approach to clinical management in PAH with focus on treatment goals

10:21 a.m.

Q&A

10:24 a.m.

Management of WHO Group 2 PH (Left Heart Disease)

Marco Guazzi, MD, PhD, University of Milano School of Medicine, Milan, Italy

Focus on the updated approach to diagnosis and management of Group 2 PH (due to left heart disease) per the ERS/ESC guidelines

10:39 a.m.

Q&A

10:42 a.m.

Management of WHO Group 3 PH (Lung Disease)

Ioana Preston, MD, Tufts Medical Center, Boston, MA USA

Focus on the updated approach to diagnosis and management of Group 3 PH (due to lung disease)

10:57 a.m.

Q&A

Friday, 21 APRIL, 2023



1:00 – 2:00 p.m.

SESSION 64: At the Limits of Care: Sailing the Rough Seas with Awake Patients on Pumps

Primary Core Therapy: MCS

Secondary Core Therapies: HEART, LUNG

Primary Practice Area: MULTI

Secondary Practice Areas: Anesthesiology and Critical Care, Cardiology, Cardiothoracic Surgery, Nursing & Allied Health, Pediatrics

Session Summary: This session will focus on adult and pediatric patients with heart or lung failure supported with mechanical pumps (e.g., VA or VV-ECMO, short term VADs, durable LVADs) where the patient is conscious but escalation or continuation of care is not feasible or appropriate. Making and communicating decisions can be challenging for the team, and the process of stopping life-sustaining supports in this setting can be practically and psychologically difficult. This session explores these real-life challenges faced by multidisciplinary care teams. The session will conclude with a moderated panel discussion led by the co-chairs.

Co-Chairs: Andrew Morley-Smith, MRCP PhD, Harefield Hospital, Harefield, United Kingdom
Christiane Kugler, PhD, Albert-Ludwigs University Freiburg, Freiburg, Germany
Sharon McCartney, MD, Duke University, Durham, NC USA

1:00 p.m.

Choppy Waters: The Ethics of Risk and Decision Making

Colleen McIlvennan, PhD, DNP, ANP, University of Colorado, Denver, CO USA

MCS and transplant teams make decisions about risk daily. This talk will explore the concept and ethics of risk (to the individual and risks to good organ utilization), and explore the process of team decision making and how clinical leaders can support the wider care team in this process.

1:12 p.m.

Discontinuing MCS Therapy in Awake Adults on Short Term and Durable Devices

Kavitha Muthiah, MBChB, PhD, St. Vincent's Hospital, Sydney, Australia

This talk will take a practical approach to ceasing MCS in adults with heart or lung failure, reviewing situations where this might arise, how to manage communication with patient/family, the process of reducing pump-based support, managing symptoms during device discontinuation, and organ donation in this context. An international perspective will be presented, considering BTT and DT settings, legal aspects, and practical approaches.

1:24 p.m.

Discontinuing MCS Therapy in Children on Short-Term and Durable Devices

Seth Hollander, MD, Stanford University, Palo Alto, CA USA

This talk will focus on the unique challenges of discontinuing pump therapy in critically ill children on forms of short and long-term mechanical circulatory support for heart or lung failure. MCS deactivation checklists will be reviewed and recent palliative and end of life care guidelines specific to pediatrics will be expounded upon.

1:36 p.m.

Amidst the Wind and the Waves: Supporting Family and Professional Caregivers

Melissa Sanchez, Central and North West London NHS Foundation Trust, London, United Kingdom

This talk recognises the psychological challenges the caregiver team will experience during the end of life phase, particularly for awake or pediatric patients on MCS device therapy. The talk will consider how to encourage open recognition of the challenges, programs to support staff members, and how to provide effective supportive care for the bereaved family.

1:48 p.m.

Panel Discussion

Friday, 21 APRIL, 2023



1:00 – 2:00 p.m.

SESSION 65: Cardiac Allograft Vasculopathy – What Does the Future Hold?

Primary Core Therapy: HEART

Secondary Core Therapies: NONE

Primary Practice Area: Cardiology

Secondary Practice Areas: Research and Immunology

Session Summary: This session, in Pecha Kucha format, will enable attendees to learn about novel methods of screening and management, along with emerging technologies that may shape CAV prevention and treatment in the future.

Pecha Kucha Format: the Japanese term for the sound of conversation (“chit chat”), this style symposium is designed to keep presentations concise and fast-paced. The session will begin with a brief description of the Unifying Theme, followed by five speakers who will each have 8 minutes to discuss the theme, using 20 slides total and only spending 20 seconds per slide. The last 20 minutes will be audience Q&A and a vote for the winning speaker.

Unifying Theme: This session will focus on the latest understanding of CAV and emerging clinical and translational research that may shape the way it is screened for and managed in the coming years.

Co-Chairs: Stephan Ensminger, MD, DPhil, University of Lubeck, Lübeck, Germany
Sharon Chih, MBBS, University of Ottawa Heart Institute, Ottawa, ON Canada

1:00 p.m. **Computational Analysis of Routine Endomyocardial Biopsies for Prediction of Cardiac Allograft Vasculopathy**

Guillaume Coutance, MD, PhD, Pitié-Salpêtrière Hospital, Paris, France

Discuss the role/performance/potential of morphological biomarkers extracted from EMBs for predicting future cardiac allograft vasculopathy development and impact on clinical practice (individualized approach, cost, minimizing complications, etc.)

1:08 p.m. **Ex Vivo Perfusion and Gene Therapy for Cardiac Allograft Vasculopathy**

Jun-Neng Roan, MD, PhD., National Cheng Kung University Hospital, Tainan, Taiwan

The procedure for cardiac transplantation offers a unique opportunity for gene delivery that does not exist for other indications for therapeutic gene intervention for heart disease. Discuss gene delivery to a whole cardiac graft utilizing ex vivo perfusion methods and future directions.

1:16 p.m. **Biomarkers to Detect or Predict CAV**

Kevin Clerkin, MD, MSc, Columbia University Irving Medical Center, New York, NY USA

Discuss the most recent findings linking clonal hematopoiesis and CAV; microRNAs; immune mediators and Donor-reactive CD4 T-cell immunity; Utilization as a potential biomarker for CAV detection, risk classification, and mortality

1:24 p.m. **Vascular Remodeling and Rapidly Progressive Intimal Thickening in the Contemporary Era**

Jon Kobashigawa, MD, Cedars-Sinai Heart Institute, Los Angeles, CA USA

Discuss mechanisms for vascular remodeling; Related novel methodologies to detect CAV, and therapies aiming to regulate intimal thickening, the pathological hallmark of CAV, and explore future directions.

1:32 p.m. **Systems Biology Approaches to Early Detection and Prevention of Cardiac Allograft Vasculopathy**

Kaushik Amancherla, MD, Vanderbilt University Medical Center, Nashville, TN USA

Technological development led to an increased interest in systems biological approaches to characterize disease mechanisms and candidate genes relevant to specific diseases. A systems biology approach hypothesizes that the response against the transplanted graft results from a constellation of events mediated by various cellular pathways. Discuss how molecular biology techniques and omics science could be integrated for cardiac allograft monitoring and impact clinical practice.

1:40 p.m. **Panel Discussion and Audience Vote**

Friday, 21 APRIL, 2023



1:00 – 2:00 p.m.

SESSION 66: Catch Me If You Can: Successful Patient Transitions from Pediatric into Adult Thoracic Transplant Programs - A Center-Based Approach

Primary Core Therapy: MULTI

Secondary Core Therapies: HEART, LUNG

Primary Practice Area: Nursing & Allied Health

Secondary Practice Areas: Pediatrics, Pharmacy and Pharmacology, Cardiology, Pulmonology

Session Summary: Moving patient care from a pediatric to adult transplant center is complex and happens as a vulnerable time for young adult patients. This session, in Pecha Kucha format, will present real-world experience with successful transitions of care and will highlight patient-centered practices and teamwork between adult and pediatric specialists.

Pecha Kucha Format: the Japanese term for the sound of conversation ("chit chat"), this style symposium is designed to keep presentations concise and fast-paced. The session will begin with a brief description of the Unifying Theme, followed by five speakers who will each have 8 minutes to discuss the theme, using 20 slides total and only spending 20 seconds per slide. The last 20 minutes will be audience Q&A and a vote for the winning speaker.

Unifying Theme: Thoughtful planning and a multifaceted approach to pediatric care provides the best prospect for a successful transfer to adult care.

Co-Chairs:

Marc Schechter, MD, University of Florida, Gainesville, FL USA

Joshua Diamond, MD, University of Pennsylvania, Philadelphia, PA USA

Melissa Cousino, PhD, University of Michigan, Ann Arbor, MI USA

1:00 p.m.

A Standardized Approach to Transitions of Care: Learning From CF

Brandi Mahar, BSN, MSN, Cincinnati Children's Hospital Medical Center, Cincinnati, OH USA

This talk will describe the importance of developing center protocols for how patients transition from pediatric to adult hospitals and will discuss the challenges of implementing such protocols in both pediatric and adult spaces.

1:08 p.m.

Patient-Centered Benefits of Moving to an Adult Hospital or Center

Angela Velleca, MHDS, BSN, RN CCTC, Cedars-Sinai Smidt Heart Institute, Los Angeles, CA USA

This talk will review the pros and cons of moving from a pediatric center to an adult transplant center. The speaker will also discuss how to prepare the young adult patient for inherent changes in care delivery that come with moving to a larger adult center that may be closer to home.

1:16 p.m.

What's This For? Medication Adherence and Autonomy Through the Teenage Years

Steven Ivulich, BPharm, Alfred Hospital, Melbourne, Australia

This talk will review the importance of medication adherence, including independently requesting refills and actively participating in medication approvals and discussions, as part of the successful transition from pediatric to adult care

1:24 p.m.

Beyond Adherence! Factors Impacting Rejection in Young Adults

Donna Guadiz, BSN, Children's Hospital Los Angeles, Los Angeles, CA USA

This talk will discuss common pitfalls in transitions of care that leave patients vulnerable to rejection episodes or other complications.

1:32 p.m.

Don't Talk to Me That Way: Communication During Times of Transition

Jo Wray, PhD, DHP (NC), Great Ormond Street Hospital for Children, London, United Kingdom

This talk will cover communication between adult and pediatric transplant centers and between teenagers, parents, and physicians to promote engagement in the transition of care. Challenges with special patient populations including those who rely on adult caregivers because of neurodevelopmental needs will also be included.

1:40 p.m.

Panel Discussion and Audience Vote

Friday, 21 APRIL, 2023



1:00 – 2:00 p.m.

SESSION 67: Challenges of PH Management in Special Populations

Primary Core Therapy: PVD

Secondary Core Therapies: LUNG

Primary Practice Area: MULTI

Secondary Practice Areas: Cardiology, Infectious Diseases, Pediatrics, Pulmonology

Session Summary: This session will cover the unique challenges in management of patients with pulmonary hypertension. This session will conclude with a moderated panel discussion led by the co-chairs.

Co-Chairs: Teresa De Marco, MD, FACC, University of California San Francisco, San Francisco, CA USA
Shahid Husain, MD, MS, University Health Network, Toronto, ON Canada

1:00 p.m.

Hello Hello: Hearing from a Patient Living with Pulmonary Hypertension

Kristin Ramones, MD, Rainbow Babies Hospital, Case Western University, Cleveland, OH USA

Talk from a patient living with pulmonary hypertension to discuss and share the disease state, therapy related, and social challenges that come with pulmonary hypertension, and opportunities for continued improvement to care for patients and ensure optimal quality of life.

1:12 p.m.

Growing Up with Pulmonary Hypertension

Karin Tran-Lundmark, MD, PhD, Skane University Hospital, Lund, Sweden

This talk will discuss how to transition care from pediatrics to adulthood while living with PH.

1:24 p.m.

Pulmonary Hypertension From Methamphetamine Use

Nicholas Kolaitis, MD, University of California San Francisco, San Francisco, CA USA

Diagnosis and management of the unique population of patients with pulmonary hypertension related to methamphetamine use.

1:36 p.m.

Should We Screen for PH in Sarcoid and How to Proceed?

Helen Whitford, MBBS, FRACP, The Alfred Hospital, Melbourne, Australia

This talk will describe the importance of looking for this in sarcoid and examining the flaws of screening, then discuss best modalities to investigate fully.

1:48 p.m.

Panel Discussion

Friday, 21 APRIL, 2023



2:15 – 3:15 p.m.

SESSION 71: Around the World in 60 Minutes: Approaches to Infected Donors - Heart and Lung Transplant Considerations

Primary Core Therapy: MULTI

Secondary Core Therapies: HEART, LUNG

Primary Practice Area: MULTI

Secondary Practice Areas: Cardiology, Cardiothoracic Surgery, Infectious Diseases, Pharmacy and Pharmacology, Nursing & Allied Health, Pediatrics, Pulmonology

Session Summary: This symposium, in Pecha Kucha format, will address considerations for organ acceptance, both heart and lung, from donors at risk for latent tuberculosis, Chagas disease, Strongyloides, hepatitis infection, and COVID-19 and will address how to minimize the risk of disease transmission and ensure organ safety while minimizing inappropriate organ discard.

Pecha Kucha Format: the Japanese term for the sound of conversation ("chit chat"), this style symposium is designed to keep presentations concise and fast-paced. The session will begin with a brief description of the Unifying Theme, followed by five speakers who will each have 8 minutes to discuss the theme, using 20 slides total and only spending 20 seconds per slide. The last 20 minutes will be audience Q&A and a vote for the winning speaker.

Unifying Theme: Considerations for heart and lung transplantation from donors with endemic infections, including latent tuberculosis, Chagas disease, Strongyloides, hepatitis, and COVID-19.

Co-Chairs: Erika Lease, MD, University of Washington, Seattle, WA USA
Paolo Grossi, MD, PhD, University of Insubria, Varese, Italy

2:15 p.m.

TB or Not-TB? Donor with Latent TB: Considerations for Heart and Lung Transplant

Margaret Hannan, MD, Mater Hospital, Dublin, Ireland

This talk will focus on the risks of latent TB donor to a heart recipient and a lung recipient – accept or not? Considerations on prophylaxis will be discussed to safely use this kind of donor.

2:23 p.m.

Donor from Chagas Endemic Area: Considerations for Heart and Lung Transplant

Silvia Campos, PhD, Heart Institute of Sao Paulo Medical School, São Paulo, Brazil

This talk will focus on considerations for organ acceptance, both HEART and LUNG, from donors at risk for, Chagas disease and address how to minimize the risk of disease transmission and ensure organ safety while minimizing inappropriate organ discard.

2:31 p.m.

Thoracic Transplantation from a Strongyloides-Seropositive Donor

Bradley Gardiner, MBBS, FRACP, MS, PhD, Alfred Health/Monash University, Melbourne, Australia

This talk will focus on considerations for organ acceptance, both HEART and LUNG, from donors at risk for Strongyloides disease and address how to minimize the risk of disease transmission and ensure organ safety while minimizing inappropriate organ discard.

2:39 p.m.

Thoracic Transplantation from Viral Hepatitis Donors

Erik Verschuuren, MD, PhD, University Medical Centre Groningen, Groningen, Netherlands

This talk will focus on the use of heart and lung donors infected with Hepatitis B virus (HBV) and also donor in a region with a hepatitis E outbreak. Prevalence, morbidity, and therapy of hepatitis B and E virus infection will be discussed to safely use this kind of donor.

2:47 p.m.

The Final Frontier: SARS-CoV-2 Positive Donors - Considerations for Heart and Lung Transplant

Cameron Wolfe, MD, Duke University Medical Center, Chapel Hill, NC USA

This talk will focus on the use of donors with recent SARS-CoV-2 infection or discordant testing (i.e. positive nasopharyngeal testing and negative lower respiratory tract testing) is not well described. Considerations include transmission to the recipient, infection of the surgical teams, and overall graft outcomes will be included. This talk will also discuss how to consider donor utilization in future pandemics.

2:55 p.m.

Panel Discussion and Audience Vote

Friday, 21 APRIL, 2023



2:15 – 3:15 p.m.

SESSION 72: Now Is Not the Time to Relax: Vasoplegia after Heart Transplant

Primary Core Therapy: HEART

Secondary Core Therapies: LUNG, MCS, PVD

Primary Practice Area: MULTI

Secondary Practice Areas: Anesthesiology and Critical Care, Cardiology, Cardiothoracic Surgery, Pharmacy and Pharmacology

Session Summary: This session, in Pecha Kucha format, seeks to solicit contemporary perspectives on the definition of, risk factors for and treatment of peri-operative vasoplegia in heart transplant recipients.

Pecha Kucha Format: the Japanese term for the sound of conversation ("chit chat"), this style symposium is designed to keep presentations concise and fast-paced. The session will begin with a brief description of the Unifying Theme, followed by five speakers who will each have 8 minutes to discuss the theme, using 20 slides total and only spending 20 seconds per slide. The last 20 minutes will be audience Q&A and a vote for the winning speaker.

Unifying Theme: To understand contemporary perspectives on risk factors and associated practice patterns around perioperative vasoplegia during heart transplantation.

Co-Chairs:

Yasbanoo Moayed, MD, University Health Network, Toronto, ON Canada

Hermann Reichensperner, MD, PhD, University Hospital Hamburg-Eppendorf, Hamburg, Germany

Tara Veasey, PharmD, BCPS, Allegheny General Hospital, Pittsburgh, PA USA

2:15 p.m.

Past, Present and Future of Vasoplegia

Fernando Bacal, MD, University of Sao Paulo, São Paulo, Brazil

This presentation should address the pathophysiology and definition of vasoplegia, including the new insights of the PGD consortium.

2:23 p.m.

How Do I Know If My Patient Is At Risk For Vasoplegia Prior To Transplant

Alessandra Verzelloni Sef, Harefield Hospital, Royal Brompton and Harefield Hospitals, London, UK

This presentation should address the complexity of risk factors to assess the patient prior to transplantation. Not exclusively focused on drug/VADs.

2:31 p.m.

VADs and Vasoplegia: A Recipe for Disaster

Robert Miller, MD, FRCPC, FACC, University of Calgary, Calgary, AB Canada

This presentation will focus on patients on VADs as bridge to transplant with relation to the onset and management of vasoplegia.

2:39 p.m.

Are Meds to Blame for Vasoplegia: Stopping ARNIs/SGLT2i Prior to Transplant Listing

Kimberly Harrison, PharmD, Vanderbilt University Medical Center, Nashville, TN USA

This presentation will focus on the drug related effects resulting in vasoplegia, how to anticipate and manage prior to transplantation.

2:47 p.m.

Early Management for Vasoplegia

Nandor Marczin, MD, PhD, Imperial College London, Harefield, United Kingdom

This presentation should address the perioperative and early postoperative measures to treat vasoplegia during/after heart transplantation.

2:55 p.m.

Panel Discussion and Audience Vote

Friday, 21 APRIL, 2023



2:15 – 3:15 p.m.

SESSION 73: Rejecting the Old Ways: The Future of CLAD Monitoring From Infancy to Adulthood

Primary Core Therapy: LUNG

Secondary Core Therapies: NONE

Primary Practice Area: Pediatrics

Secondary Practice Areas: Pulmonology

Session Summary: This case-based session will discuss novel methods of CLAD monitoring - including multiple breath washout, lung magnetic resonance imaging, and cell-free DNA - for pediatric and adult lung transplant recipients who may be unable to perform conventional monitoring techniques. The use, feasibility, limitations, and evidence for CLAD monitoring with these techniques will be discussed. The symposium will include audience polling before and after the session to evaluate practitioner preferences. Following each talk, the co-chairs will lead a brief Q&A with the speaker and encourage questions from the audience.

Co-Chairs: Christian Benden, MD, MBA, FCCP, University of Zürich, Zurich, Switzerland
Nicholas Avdimiretz, MD, FRCPC, University of Alberta, Edmonton, AB Canada

2:15 p.m. **Case Presentation: A 4-year-old with ABCA3 Surfactant Deficiency Undergoes Lung Transplantation and Develops CLAD After AMR**

Xin Si, MD, Stanford University, Palo Alto, CA USA

This presentation will be a short clinical case presentation to set the stage for 3 talks in this session.

2:20 p.m. **Multiple Breath Washout (MBW) in Pediatric Patients After Lung Transplantation: Ready for Routine Clinical Practice?**

Rossa Brugha, MBMCh MA(Oxon), MRCPCH, PhD, Great Ormond Street Hospital, London, United Kingdom

This presentation describes the arguments for and against the use of MBW in pediatric patients after lung transplantation. A focus will also be on the practical issues associated with MBW and how it can be applied in daily clinical practice.

2:32 p.m. **Why MRI? Feasibility and Clinical Use of Advanced Lung Imaging in Pediatric Lung Transplant**

Nicolaus Schwerk, MD, Hannover Medical School, Hannover, Germany

This presentation describes the current evidence and preliminary findings from lung MRI data in children for CLAD detection following lung transplantation. This will also describe lung MRI work in adult lung transplant patients, and some of its practical issues and limitations.

2:44 p.m. **If the Shoe Fits: Challenges of Applying Adult Biomarkers to Pediatric Lung Transplant**

Stuart Sweet, MD, P, Washington University in St. Louis, St. Louis, MO USA

This presentation describes the novel biomarkers being studied for CLAD monitoring, with special focus on cell-free DNA. This will also touch on biomarkers from bronchoalveolar lavage, and how results may translate to the pediatric population.

2:56 p.m. **Panel Discussion**

Friday, 21 APRIL, 2023



2:15 – 3:15 p.m.

SESSION 74: Connecting the Clots: Journey of an Acute to Chronic Pulmonary Embolism

Primary Core Therapy: PVD

Secondary Core Therapies: HEART, LUNG

Primary Practice Area: Pulmonology

Secondary Practice Areas: Cardiology, Cardiothoracic Surgery, Nursing & Allied Health, Pharmacy and Pharmacology

Session Summary: Chronic thromboembolic pulmonary disease (CTEPD) is characterized by the presence of chronic thromboembolic disease without pulmonary hypertension at rest. CTEPD patients represent a small proportion of the patients referred to expert centers, with symptoms and quality of life that may be as poor as those of patients with chronic thromboembolic pulmonary hypertension (CTEPH). It is still unknown why some patients with acute PE develop CTEPD. This session will conclude with a moderated panel discussion led by the co-chairs.

Co-Chairs: Olaf Mercier, MD, PhD, Marie Lannelongue Hospital, Fontenay-aux-Roses, France
Micheal McInnis, MD, University Health Network, Toronto, ON Canada

2:15 p.m.

Just Getting Started: Post-PE Syndrome in the COVID-19 Era

Jason Weatherald, MD, MSc, University of Alberta, Edmonton, AB Canada

A significant proportion of patients will report long term functional limitations after pulmonary embolism (PE) yet only a small fraction will be ultimately diagnosed with CTEPH. The purpose of this talk is to describe the post-pulmonary embolism syndrome and how to evaluate the post-PE patient during the COVID era.

2:30 p.m.

Are We There Yet? The Diagnosis and Management of CTEPD

Scott Visovatti, MD, Davis Heart and Lung Research Institute, Columbus, OH USA

Following acute pulmonary embolism, around one quarter of patients will have imaging evidence of chronic thromboembolic disease at follow-up. The purpose of this talk is to describe the approach to a symptomatic patient with chronic thromboembolic disease, in the setting of normal resting pulmonary artery pressures, and to discuss when intervention may be warranted.

2:45 p.m.

Is This a Roadmap? Imaging in Chronic Thromboembolic Disease

Micheal McInnis, MD, University Health Network, Toronto, ON Canada

There may be a role for pulmonary endarterectomy and balloon pulmonary angioplasty in carefully selected symptomatic CTEPD patients. This presentation will review the role of imaging in the diagnosis of CTEPD and how it may assist in planning multidisciplinary management.

3:00 p.m.

Panel Discussion

Friday, 21 APRIL, 2023



3:45 – 4:45 p.m.

SESSION 78: Acute Mechanical Circulatory Support: Guidelines, Consensus and Practical Issues

Primary Core Therapy: MCS

Secondary Core Therapies: HEART

Primary Practice Area: Cardiology

Secondary Practice Areas: Anesthesiology and Critical Care, Cardiothoracic Surgery, Infectious Diseases, Nursing & Allied Health, Pharmacy and Pharmacology, Research and Immunology

Session Summary: Selection of the acute MCS can vary from country to country, region to region, and among the providers within the same institution. The field lacks prospective randomized trials. The acute mechanical circulatory support devices have changed, our knowledge has grown. We have safely been able to expand their use, to recover patients, bridge patients to durable support/tx. This session will highlight the major points of the ISHLT Donor Acute Mechanical Circulatory Support Guidelines Paper. This session will conclude with a moderated panel discussion led by the co-chairs.

Co-Chairs: Hannah Copeland, MD, Lutheran Medical Group, Fort Wayne, IN USA
Federico Pappalardo, MD, AO SS Antonio e Biagio e Cesare Arrigo, Alessandria, Italy

- 3:45 p.m. **30,000 Feet: The ISHLT/HFSA Acute MCS Guidelines**
Alexander Bernhardt, MD, University Heart and Vascular Center, Hamburg, Germany
This talk will focus on specific considerations of the basics of acute mechanical circulatory options, timing to implement the device and device selection. Considerations for VA ECMO, Impella, IABP, for timing, and duration, for sicker patients on VA ECMO, Impella vs IABP
- 3:57 p.m. **Cardiogenic Shock: ISHLT Consensus Conference on HF-Shock**
David Baran, Cleveland Clinic Heart, Vascular and Thoracic Institute, Weston, FL USA
The ISHLT held an expert consensus conference recently on the topic of HF CS, ie CS not due to an acute ischemic insult. Conclusions from the conference are summarized
- 4:09 p.m. **Post Implant Management: Thin the Blood, Kill the Bugs**
Ian Hollis, PharmD, BCPS-AQ, University of North Carolina Medical Center, Chapel Hill, NC USA
The presentation will review the post-implant management of anti-coagulation. The presentation will also discuss anti-biotic prophylaxis. Will review anticoagulation in VA ECMO, VV ECMO, Impella and IABP, review heparin vs bivalirudin, and review anti-biotic prophylaxis.
- 4:21 p.m. **Blazing a Trail: Helping Guide Patient and Family Following Temporary Support Implantation**
Paola Morejon Barragan, MD, Clinica Guayaquil, Guayaquil, Ecuador
The presentation will review the need for social worker, and palliative care after acute mechanical circulatory support. 1) What does the patient want? 2) Making decisions when the family, significant others and next of kin are not available. 3) How to help families and loved ones through the process.
- 4:33 p.m. **Panel Discussion**

Friday, 21 APRIL, 2023



3:45 – 4:45 p.m.

SESSION 79: Unravelling Deaths in Heart Transplantation: Turning Tragedy into Triumph

Primary Core Therapy: HEART

Secondary Core Therapies: MCS

Primary Practice Area: Pathology

Secondary Practice Areas: Cardiology, Cardiothoracic Surgery, Pediatrics

Session Summary: This session, in Pecha Kucha format, addresses the current knowledge on modes of deaths in heart transplant recipients and how lessons learned from transplant deaths can help living transplant recipients.

Pecha Kucha Format: the Japanese term for the sound of conversation ("chit chat"), this style symposium is designed to keep presentations concise and fast-paced. The session will begin with a brief description of the Unifying Theme, followed by five speakers who will each have 8 minutes to discuss the theme, using 20 slides total and only spending 20 seconds per slide. The last 20 minutes will be audience Q&A and a vote for the winning speaker.

Unifying Theme: Giovanni Morgagni (18th century Italian Anatomist) described his work as turning the tragedy of death to the service and benefit of the living. That is the theme of this session: turning the lessons gleaned from studying post-heart transplant deaths (including from epidemiologic, autopsy, and device investigations) to aid and improve clinical decision-making for surviving patients and stimulate further research in the field.

Co-Chairs: Douglas Greig, MD, P. Universidad Catolica de Chile, Santiago, Chile
Gregory Fishbein, MD, David Geffen School of Medicine at UCLA, Los Angeles, CA USA

3:45 p.m. ***Living on the Edge: Contemporary Epidemiology, Risk Factors and Modes of Death Following Heart Transplant***

Livia Goldraich, MD, MSc, Hospital de Clínicas Porto Alegre, Porto Alegre, Brazil

This talk will briefly review recent data regarding mortality following heart transplantation, highlighting modes, mechanisms and risk factors for death, particularly in the long-term follow-up.

3:53 p.m. ***The Supporting Role of Autopsy in Understanding Allograft-Related Deaths***

Chieh-Yu Lin, MD, PhD, Washington University in St. Louis, St. Louis, MO USA

This talk will review the spectrum of pathologic findings encountered at autopsy in heart transplant recipients, with examples of how autopsy findings have impacted clinical management of heart transplant recipients.

4:01 p.m. ***What's CAV Got To Do With It?***

Carmela Tan, MD, Cleveland Clinic, Cleveland, OH USA

This talk will summarize the current understanding of CAV derived from autopsy and explant heart pathology and highlight clinical strategies for preventing CAV that came about as a result of this knowledge.

4:09 p.m. ***Are Post-Transplant Sudden Deaths Predictable and Preventable?***

Ana Alba, MD, PhD, Toronto General Hospital, Toronto, ON Canada

This talk will provide a critical review of the evidence for predictive and preventive strategies to decrease sudden cardiac deaths, focusing on the use of implantable cardioverter defibrillators among heart transplant recipients.

4:17 p.m. ***Failing Forward: Pathologic Examination of MCS Devices Removed for Complications and After Recovery***

Dylan Miller, MD, Intermountain Central Lab, Murray, UT USA

This talk will review the contribution of autopsy and explant-based pathology of device complications to refinements in mechanical support device technology and lessons learned about successful recovery patients from examining their devices.

4:25 p.m. ***Panel Discussion and Audience Vote***

Friday, 21 APRIL, 2023



3:45 – 4:45 p.m.

SESSION 80: Rocky Mountain High: Scaling New Heights in CMV

Primary Core Therapy: LUNG

Secondary Core Therapies: HEART

Primary Practice Area: MULTI

Secondary Practice Areas: Infectious Diseases, Pediatrics, Pharmacy and Pharmacology, Pulmonology

Session Summary: CMV remains a significant challenge to success in lung transplantation with end organ disease, impact on allograft function, and toxicity related to treatment. The past two years have been notable for new approaches for prophylaxis and treatment, and greater understanding of the antigen-specific immune response. This session, in Pecha Kucha format, will discuss new antiviral medications (including letermovir and maribavir), adoptive T cell transfer, and immune monitoring. Data from the adult and pediatric literature will be included.

Pecha Kucha Format: the Japanese term for the sound of conversation (“chit chat”), this style symposium is designed to keep presentations concise and fast-paced. The session will begin with a brief description of the Unifying Theme, followed by five speakers who will each have 8 minutes to discuss the theme, using 20 slides total and only spending 20 seconds per slide. The last 20 minutes will be audience Q&A and a vote for the winning speaker.

Unifying Theme: New approaches for CMV prophylaxis and treatment in lung transplantation

Co-Chairs: Jennifer Chow, MD, MS, Tufts Medical Center, Boston, MA USA
Michael Perch, MD, Rigshospitalet, Copenhagen, Denmark

- 3:45 p.m. **New Strategies for CMV Prophylaxis Including Letermovir**
Miranda So, PharmD, MPH, BScPhm, University Health Network, Toronto, ON Canada
This talk will discuss new agents for CMV prophylaxis, including discussion of relative efficacy and side effects of each agent.
- 3:53 p.m. **New Antivirals for CMV Treatment Including Maribavir**
Emily Blumberg, MD, University of Pennsylvania, Philadelphia, PA USA
This talk will discuss new antivirals for treatment of CMV reactivation and will discuss when to select these agents over more traditional antivirals.
- 4:01 p.m. **CMV-Specific T-Cell Response and Control of Primary Infection and Reactivation**
Laurie Snyder, MD, MHS, Duke University, Durham, NC USA
This talk will discuss how to use CMV-specific T cell responses to guide prevention and management of CMV infection in thoracic transplant recipients.
- 4:09 p.m. **Clinical Applications of CMV Immune Monitoring in Lung Transplantation**
Glen Westall, FRACP, PhD, Alfred Hospital, Melbourne, Australia
This talk will discuss how CMV-specific immune monitoring can be used to monitor degree of immunosuppression and risk of infection and rejection after lung transplantation.
- 4:17 p.m. **Adoptive T-Cell Therapy for Refractory Cases in Adults and Children**
Peter Hopkins, FRACP, The Prince Charles Hospital, Brisbane, Australia
This talk will provide new insight and recent data regarding development and use of T cell therapy for refractory CMV.
- 4:25 p.m. **Panel Discussion and Audience Vote**

Saturday, 22 APRIL, 2023



9:30 – 11:00 a.m.

GENERAL SESSION (PLENARY) III

Primary Core Therapy: MULTI
Secondary Core Therapies: ALL
Primary Practice Area: MULTI
Secondary Practice Areas: ALL

Co-Chairs: Goran Dellgren, MD, PhD, University Hospital Goteborg, Goteborg, Sweden
Jason Christie, MD, MS, University of Pennsylvania, Philadelphia, PA USA

9:30 a.m. **Awards Presentations**
Kathleen Grady, PhD, RN, MS, FAAN, Northwestern University, Chicago, IL USA

9:50 a.m. **Xenotransplantation: The Future is Now**
Robert Montgomery, MD, PhD, NYU Langone Transplant Institute, New York, NY USA

10:15 a.m. **Featured Abstract #4 (TBD)**

10:25 a.m. **Q&A with Interactive Discussant**

10:30 a.m. **PRESIDENT'S DEBATE: Is the Future of Therapy for Advanced Heart and Lung Disease Biologic or Mechanical?**

The current era is one of rapid advances in management and reconditioning of allografts for example with EVLP, extended donor criteria, DCD, lung/heart scaffolds and recellularization and xenotransplantation, all providing new options for organ transplantation. Advances in mechanical assist strategies raises the possibility of mechanical approaches offering compelling alternatives to organ transplantation in patients with advanced heart and lung transplantation without some of the downsides. This debate will provide an erudite, scholarly, informed and highly polite discussion of which option is the future of therapy for advanced heart and lung disease. All attending will be far more knowledgeable afterward.

10:30 a.m. **Biologic Team: We Are Doctors, Not Mechanics**
David Baran, MD, Cleveland Clinic Heart, Vascular and Thoracic Institute, Parkland, FL USA
Emily Granger, MBBS, St Vincent's Hospital Sydney, Sydney, Australia

This two-member team will address EVLP, heart box, treatment during ex-vivo heart or lung perfusion, xenotransplantation, DCD, gene therapy, future decellularization, recellularization and lung/heart scaffolds: Go Natural, Stay Natural.

10:40 a.m. **Mechanical Team: The Rise of The Machines**
Manreet Kanwar, MD, Allegheny General Hospital, Pittsburgh, PA USA
Konrad Hoetzenecker, MD, Medical University of Vienna, Vienna Austria
Organs? Who needs them? We can do better. Machines are the future. This two-member team will discuss advances in MCS, ECMO and other mechanical solutions to advanced heart and lung disease. (Combined presentation with one slide set, 10 minutes total argument)

10:50 a.m. **Rebuttals**