**Program 2017**  
**63rd Annual Conference**  
**June 21-24, 2017 - Chicago**  

"Patient-Centric Innovation—Artificial Organs Beyond the Conventional"  

*May 25, 2017*

**Wednesday, June 21**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:30am - 4:30pm</td>
<td><strong>ASAIO 6th ANNUAL PEDIATRIC MEDICAL DEVICE DAY</strong></td>
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<td><strong>Co-Chairs:</strong> Timothy Maul, CCP, PhD, Nemours Children’s Hospital, Orlando, FL</td>
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<td><strong>Co-Chairs:</strong> Eric Chen, MS, FDA, Silver Spring, MD</td>
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<td><strong>Co-Chairs:</strong> Christopher Almond, MD, MPH, Stanford University, Palo Alto, CA</td>
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<tr>
<td>8:30am - 8:35am</td>
<td><strong>Introduction</strong></td>
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<td>Timothy Maul, CCP, PhD, Nemours Children’s Hospital, Orlando, FL</td>
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<tr>
<td>8:35am - 10:15am</td>
<td><strong>Pediatric Day Session 1: Bringing Products To Market</strong></td>
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<tr>
<td>8:35am - 8:55am</td>
<td><strong>Orphan Products Funding For Clinical Trials</strong></td>
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<td></td>
<td>Eric Chen, MS, FDA, Silver Spring, MD</td>
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<td>8:55am - 9:15am</td>
<td><strong>Orphan Products PI Perspective</strong></td>
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<td>Christopher Almond, MD, Stanford University, Palo Alto, CA</td>
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<td>9:15am - 9:35am</td>
<td><strong>Demystifying the FDA Process</strong></td>
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<td>Kurt Dasse, PhD, Hbeat Medical, LLC, Cocoa, FL</td>
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<td>9:35am - 9:55am</td>
<td><strong>Where The CDRH Is Going</strong></td>
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<td>Vasum Peiris, MD, FDA, Silver Spring, MD</td>
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<td>9:55am - 10:05am</td>
<td><strong>Discussion and Questions</strong></td>
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<td>10:05am - 10:30am</td>
<td><strong>Pediatric Refreshment Break 1</strong></td>
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<tr>
<td>10:30am - 11:45am</td>
<td><strong>Pediatric Day Session 2: Updates From The Field</strong></td>
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<td>10:30am - 10:50am</td>
<td><strong>PediMacs</strong></td>
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<td>Joseph Rossano, MD, MS, Children's Hospital of Pennsylvania, Philadelphia, PA</td>
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<td>10:50am - 11:10am</td>
<td><strong>Early Report From PumpKIN</strong></td>
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<td>Robert Jaquiss, MD, UT Southwestern Medical Ctr, Dallas, TX</td>
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<td>11:10am - 11:30am</td>
<td><strong>Quality Improvement Science Of VADs</strong></td>
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<td>Angela Lorts, MD, Cincinnati Children's Hospital, Cincinnati, OH</td>
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<td>11:30am - 11:45am</td>
<td><strong>Discussion and Questions</strong></td>
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<td>11:45pm - 1:30pm</td>
<td><strong>Lunch Break</strong></td>
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<td>1:30pm - 2:15pm</td>
<td><strong>Pediatric Day Session 3: Getting A Pediatric Device to Market</strong></td>
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<td>1:30pm - 2:15pm</td>
<td><strong>Pediatric Device Consortia Panel</strong></td>
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<td>Julia Finkel, MD, Children’s National Health System, Washington, DC</td>
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<td>Matthew Maltese, PhD, The Children’s Hospital of Philadelphia, Philadelphia, PA</td>
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<tr>
<td>1:30pm - 1:52pm</td>
<td><strong>Berlin Heals C-MIC: A Disruptive Approach for the Treatment of Heart Failure with a Novel Microcurrent Application</strong></td>
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<td>Johannes Mueller, MD, Berlin Heals GmbH, Berlin, Germany</td>
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<td>1:53pm - 2:15pm</td>
<td><strong>CorInnova’s Novel Device for MCS</strong></td>
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<td>William Altman, BSEE, MBA, CorInnova Inc., Houston, TX</td>
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<td>Keith Svagerko, BS, MHA, MBA, CorInnova Inc., Houston, TX</td>
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<td>2:15pm - 2:30pm</td>
<td><strong>Pediatric Refreshment Break 2</strong></td>
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<td>2:30pm - 4:30pm</td>
<td><strong>Pediatric Day Session 4: New Ideas In Anticoagulation</strong></td>
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</tbody>
</table>
2:30pm-2:50pm  DTIs
Patricia Massicotte, MD, University of Alberta, Edmonton, Alberta

2:50pm-3:10pm  Is TEG No Longer Needed?
David Rosenthal, MD, Stanford University, Palo Alto, CA

3:10pm-3:30pm  Surface Passivation
Lise Tchoua, MD, MS, MHS, Columbia University Medical Ctr, New York, NY

3:30pm-3:50pm  Bioinspired Surface Coating for Mechanical Circulator Support
Michael Super, PhD, Wyss Institute at Harvard, Boston, MA

3:50pm-4:10pm  Acute Stroke Management
Rebecca Ichord, MD, Children's Hospital Philadelphia, Philadelphia, PA

4:10pm-4:30pm  Discussion and Closing Comments
Timothy Maul, CCP, PhD, Nemours Children's Hospital, Orlando, FL

8:00am - 5:00pm  MCS/VAD UNIVERSITY
Course Director: Pramod Bonde, MD, Yale University, New Haven, CT

8:00am-8:05am  Welcome
Pramod Bonde, MD, Yale University, New Haven, CT

8:05am-9:30am  How Engineering Influences Medicine
Fundamentals of Engineering Principles in Design, Development and Testing of Circulatory Devices
Steven Koenig, PhD, University of Louisville, Louisville, KY
Jeff LoRose, MSME, HeartWare, Miami Lakes, FL
Kevin Bourque, MSME, St. Jude Medical Inc., Burlington, MA

9:30am-10:30am  How Medicine Helps Engineering Innovation
Who Can and Cannot Benefit from VAD Therapy?
How Do We Expand the Potential Recipient Pool?
Tim Kaufmann, Prof Dr, RWTH Aachen University, Aachen, NRW, Germany
Hari Mallidi, MD, Brigham and Women's Hospital / Harvard Medical School, Boston, MA

10:30am-11:30am  Economics Of VAD Therapy: What You Need To Know?
Infrastructure Needed
Dynamics of Healthcare Delivery
Financial Viability
Pavan Atluri, MD, University of Pennsylvania, Philadelphia, PA

11:00am-1:00pm  Clinical Aspects of VAD Implantation & Approach
Hemodynamic Stabilization of Acute Circulatory Shock
Approaches and Pitfalls
Technical Pearls
What Not To Do
Basar Sareyyupoglu, MD, University Hospitals of Case Western, Cleveland, OH
Pramod Bonde, MD, Yale University, New Haven, CT

1:00pm-2:00pm  Mock Loop/ Prototype Challenge Presentations
Single Ventricle Pediatric Mock Circulation for Student Instruction and Clinical Simulation
Bill Ngha, MS, MS-1, St. George’s University, Charlotte, NC
Hybrid Cardiovascular Simulator
Jeson Fonseca, PhD, Institute Dante Pazzanese of Cardiology, Sao Paulo, SP, Brazil
Development of a Mock Circulatory Loop for in vitro Testing of Ventricular Assist Devices
Sotirios Spiliopoulos, MD, Medical University Graz, Austria
A Compact Mock Loop for Ventricular Assist Device System Performance Verification
Po-Lin Hsu, PhD, Soochow University, Suzhou, Jiangsu, China
A Non-Conventional, Concentric, “Total” Artificial Heart
Arnold Lande, MD, Northport Navigatable Waters Institution, Northport, MI
Centrifugal VAD Designed to be Fixed in the Left Ventricle Apex
Bruno Utiyama da Silva, PhD, Institute Dante Pazzanese of Cardiology, Sao Paulo, Brazil

1:00pm-2:00pm  Lunch Break

2:00pm-4:00pm  The Four Cs of VAD Care
Communication
Compliance
Coagulation
Complications
William Holman, MD, University of Alabama, Birmingham, AL
Basar Sareyyupoglu, MD, University Hospitals of Case Western, Cleveland, OH
Dawn Christensen, MS, FNP-BC, Innovative Program Solutions LLC, Pine Grove, PA
Pamela Combs, PhD, RN, Advocate Christ Medical Center, Oak Lawn, IL

4:00pm-5:00pm  Total Artificial Heart
Devices in the Pipeline
Thursday, June 22

GENERAL SESSION 1

Co-Chairs:

Marvin Slepian, MD, ASAIO Program Chair, University of Arizona, Tucson, AZ
William Fissell, MD, Vanderbilt University, Nashville, TN

7:45am - 7:55 am
Introduction & Welcome -
Marvin Slepian, MD, ASAIO Program Chair, University of Arizona, Tucson, AZ

7:55am-8:00am
ASAIO's iyi -for young innovators Announcement
Priscilla Petit, BMS, Hbeat Medical, Cocoa, FL

8:00am - 9:15 am
Top Graded Abstracts

8:00am-8:10am
Implanted Novel Autologous Bioprosthetic Valve Can Adapt the Histological Character to the Environment
Yoshiaki Takewa, MD, PhD, National Cerebral & CV Center, Suita, Osaka, Japan

8:10am-8:20am
Progress in the Development of a Miniature, Hemocompatible Continuous Flow Ventricular Assist Device for Infants and Children
Peter Wearden, MD, PhD, Nemours Children’s Hospital, Orlando, FL

8:20am-8:30am
Post Transplant Survival in Patients Bridged to Transplant with a Ventricular Assist Device: Poor Outcomes Extend Beyond the Standard Adolescent Age Group
Farhan Zafar, MD, Cincinnati Children's Hospital Medical Ctr, Cincinnati, OH

8:30am-8:40am
Using Wall Shear Stress and Platelet Stress Accumulation in the Design of a Bioartificial Kidney
Steven Goebel, PhD, SimuTech Group Inc., Rochester, NY

8:40am-8:50am
Stretchable Electronic Conformal Skin-adherent Wearable Patches: a Novel Method for Wireless Patient Monitoring
Jacob Garlant, University of Arizona, Tucson, AZ

8:50am-9:00am
International Analysis of LVAD Point-of-care vs Plasma INR: a Multicenter Study
Sarah Schettle, PA-C, Mayo Clinic, Rochester, MN

9:00am-9:15am
Discussion

9:15am - 9:45 am
ASAIO President’s Address
William Fissell, MD, Vanderbilt University, Nashville, TN

9:45am - 10:30am
Visit Exhibits & Enjoy Refreshments

9:45am-10:30am
Visit Posters

10:30am-12:30pm
GENERAL SESSION 1 - Continued
Medical Device Innovations - How Do We Drive It, Build It and Deliver It in the Future?

10:30am-10:50am
Medical Device/Therapeutics Innovation - The Issue, The Need and The Process
Marvin Slepian, MD, University of Arizona, Tucson, AZ

10:50am-11:10am
The Revolution in Material Development
Arthur Coury, PhD, Northeastern University, Boston, MA

11:10am-11:30am
Modeling and Simulation Approaches - Enhancing Certainty, Reducing Animal Studies, Speeding Development
Tina Morrison, PhD, FDA, Silver Spring, MD

11:30am-11:50am
Intellectual Property Considerations – Cost Effective and Expeditious Ways to Protect Medical Devices, Products and Therapies
Patrea Pabst, JD, Pabst Patent Group, Atlanta, GA

11:50am-12:10pm
Efficiency in Regulatory Strategies
Valerie Merkle, PhD, FDA, Silver Spring, MD

12:10pm-12:30pm
Fueling the Process - How to Secure the Capital to Drive Innovation
Michael Marasco, MBA, Northwestern University, Evanston, IL

12:30pm-1:30pm
Lunch Break

1:30pm-3:00pm
CARDIAC 1

Panel: Patient Pump Interaction
Panelists:
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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</table>
| 1:30pm-1:45pm | **Case #1:** Surgical Challenges with Complex Case Scenarios - Multiple Reoperations and Pump Exchanges  
*Simon Maltais, MD, PhD, Mayo Clinic, Rochester, MN* |
| 1:45pm-1:50pm | **Discussion**                                                        |
| 1:50pm-2:05pm | **Case #2:** Patient Device Selection Difficulties - Thromboembolic Events and Gastrointestinal Bleeding  
*Nir Uriel, MD, MSc, University of Chicago, Chicago, IL* |
| 2:05pm-2:10pm | **Discussion**                                                        |
| 2:15pm-3:00pm | **Cardiac Abstracts**                                                  |
| 2:15pm-2:30pm | **Infection Complications After Primary Implantation of a Continuous-flow Left Ventricular Assist Device in 526 Patients: Comparison of Axial-flow (HeartMate II) and Centrifugal-flow (HVAD) Devices**  
*Tadahisa Sugiyama, MD, PhD, Texas Heart Institute, Houston, TX* |
| 2:30pm-2:45pm | **ICU Sequential Organ Failure Assessment (SOFA) Score Improves Risks Prediction Accuracy for Durable LVAD Recipients**  
*Subhasis Chatterjee, MD, Baylor College of Medicine, Houston, TX* |
| 2:45pm-3:00pm | **Discussion**                                                        |
| 1:30pm-3:00pm | **BIOENGINEERING 1 - A New Era in Cardiac Research**                  |
| 1:30pm-2:00pm | **MRI Compatible Ex-Vivo Beating Heart (Physioheart) Platform: A New Era in Cardiac Research**  
*Bastiaan de Mol, MD, PhD, JD, University of Amsterdam, The Netherlands* |
| 2:00pm-3:00pm | **Bioengineering Abstracts**                                           |
| 2:00pm-2:15pm | **A Novel VAD Platform Configured for Right Heart Mechanical Circulatory Support**  
*J. Ryan Stanfield, PhD, VADovations, Oklahoma City, OK* |
| 2:15pm-2:30pm | **In vitro Performance of a Novel Membrane-oscillating Left Ventricular Assist Device Under Physiological Conditions**  
*Nathalie Tapolisky, BS, University of Louisville, Louisville, KY* |
| 2:30pm-2:45pm | **Automatic Regulation Feasibility Testing of a Bioprosthetic Total Artificial Heart in a Bovine Model**  
*Jean-Christophe Perlès, MD, Carmat, Velizy-Villacoublay, France* |
| 1:30pm-3:00pm | **PULMONARY 1 - Pro/Con of ECLS as Bridge to Recovery-Early Ambulation/Mobilization vs Rest and Get Off ECLS ASAP** |
| 1:30pm-1:45pm | **Pro:** Charles Hoopes, MD, University of Alabama, Birmingham, AL  
**Con:** James Blum, MD, Emory Healthcare/VA Atlanta, GA |
| 1:45pm-2:00pm | **Pro:** Joseph Zwischenberger, MD, University of Kentucky, Lexington, KY  
**Con:** William Lynch, MD, MS, University of Michigan, Ann Arbor, MI |
| 2:00pm-2:15pm | **Panel Discussion**                                                   |
| 2:15pm-2:30pm | **Panel Discussion**                                                   |
| 2:30pm-2:45pm | **Panel Discussion**                                                   |
| 2:45pm-3:00pm | **Pulmonary Abstracts**                                                |
| 2:45pm-3:00pm | **CO₂ Based Servo Regulation of Artificial Lung Sweep Gas**  
*Alex Thompson, PhD, VA Ann Arbor Healthcare System, Ann Arbor, MI* |
| 1:30pm-3:00pm | **RENALE 1 - Global Issues in Renal Replacement Therapy**               |
| 1:30pm-1:50pm | **Global RRT: An Overview**                                             
*Prabir Roy-Chaudhury, MD, PhD, University of Arizona, Tucson, AZ* |
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<th>Time</th>
<th>Session</th>
<th>Speaker Details</th>
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<tr>
<td>1:50pm-2:10pm</td>
<td>Commercial Opportunities and Business Challenges</td>
<td>Derek Wiebenson, BS, Baxter Healthcare, Englewood, CO</td>
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<td>2:10pm-2:30pm</td>
<td>Legacy of Kolff and the Road Ahead</td>
<td>Jasper Boomker, PhD, Dutch Kidney Foundation, Bussum, Noord, Netherlands</td>
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<td>2:30pm-2:50pm</td>
<td>Reducing the Burden of Water Requirements</td>
<td>Christian Bluchel, PhD, Temasek Polytechnic, Singapore</td>
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<td>2:50pm-3:00pm</td>
<td>Discussion</td>
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<td>3:00pm-3:45pm</td>
<td>Visit Exhibits &amp; Enjoy Refreshments</td>
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<td>3:00pm-3:45pm</td>
<td>Visit Posters</td>
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| 3:45pm - 5:00pm| **CARDIAC 2-Debate-VADS: Bioengineering and VADs**                     | **Co-Chairs:** Heather Barone, RC-BC, MSN, Cedars-Sinai Medical Center, Los Angeles, CA  
|              |                                                                         | Charles Hoopes, MD, University of Alabama at Birmingham, Birmingham, AL           |
| 3:45pm-4:05pm| Pro: New Pump Designs Have Reached the "Perfect Pump"                   | David Feldman, MD, PhD, University of Cincinnati Med Ctr, Cincinnati, OH           |
| 4:05pm-4:25pm| Con: LVAD Technology Improvement Can Further Improve Clinical Outcomes  | John M. Stulak, MD, Mayo Clinic, Rochester, MN                                   |
| 4:30pm-5:00pm| Cardiac Abstracts                                                       |                                                                                  |
| 4:30pm-4:45pm| Cannula and Pump Position is Associated with Left Ventricular Unloading and Clinical Outcome in Patients with HeartWare Ventricular Assist Device | Teruhiko Imamura, MD, PhD, University of Chicago, Chicago, IL                     |
| 4:45pm-5:00pm| LVAD Outflow Graft Size Impacts Thrombogenic Potential                  | Venkat Keshav Chivukula, PhD, University of Washington, Seattle, WA               |
| 3:45pm - 5:00pm| **BIOENGINEERING 2**                                                   | **Co-Chairs:** O. Howard Frazier, MD, Baylor College of Medicine, Houston, TX     
|              |                                                                         | Egemen Tuzun, MD, PhD, Texas A & M University, College Station, TX                |
| 3:45pm - 4:15pm| Biventricular Heart Assist with Devices Acting on the Epicardium       | John Criscione, MD, PhD, Texas A&M University, College Station, TX               |
| 4:15pm-4:45pm| Modeling Predictions of Arterial Adaptations to Continuous and Induced Pulse Mode Left Ventricular Assist Devices in Heart Failure | Phuc Nguyen, PhD, CEO, Prolegon Biotechnologies, Houston, TX                     |
| 4:45pm - 5:00pm| Bioengineering Abstracts                                                |                                                                                  |
| 4:45pm-5:00pm| In-vitro Feasibility Study of a Pulsatile Intra-ventricular Assist Device Mimicking Jellyfish-like Movement | Wu Tingting, MD, Soochow University, Suzhou, China                                |
| 3:45pm - 5:00pm| **VAD 1 - Strategies for Every Day Life Within a VAD Program**         | **Co-Chairs:** Stephen Koenig, PhD, University of Louisville, Louisville, KY    
|              |                                                                         | Lori Edwards, MSN, RN, INOVA Fairfax Hospital, Falls Church, VA                  |
| 3:45pm-4:00pm| Integration Of Processes Within VAD Programs                            | Pamela Combs, PhD, RN, Advocate Christ Medical Ctr, Oak Lawn, IL                 |
| 4:00pm-4:15pm| Telemonitoring: Challenges and Benefits                                | Michelle Kassemos, BSN, RN, University of California San Francisco, San Francisco, CA |
| 4:15pm-4:30pm| Enhancing Difficult MCS Team Decisions                                 | Geetha Bhat, PhD, MD, Advocate Christ Medical Center, Oak Lawn, IL               |
| 4:30pm-4:45pm| Future Challenges with MCS                                              | Mark Slaughter, MD, University of Louisville, Louisville, KY                     |
| 4:45pm-5:00pm| Discussion                                                              |                                                                                  |
| 3:45pm - 5:00pm| **PULMONARY 2 - Lung Injury Mini-Summit - An ASAIO Innovation Opportunity** | **Chair:** Joe GN “Skip” Garcia, MD, University of Arizona, Tucson, AZ         |
|              |                                                                         |                                                                                  |
| 3:45pm-4:10pm| Keynote: Acute Lung Injury - From Genes to Tissue to Devices - A Role for Precision Medicine in Drug/Device Therapeutics | Joe GN “Skip” Garcia, MD, University of Arizona, Tucson, AZ                      |
| 4:10pm-4:35pm| Pathobiology of Acute Lung Injury - What Are The Targets For Intervention? | Jeffrey Jacobson, MD, University of Illinois, Chicago, IL                       |
### Devices and Lung Injury - Ventilators/Oxygenators and Beyond - Foe or Friend?

**Can We Build Devices to Help?**

*Christian Bime, MD, MSc, University of Arizona, Tucson, AZ*

### 3:45pm - 5:15pm

**RENA L 2-Beyond (Today's) Dialysis**

**Co-Chairs:**
- Shuvo Roy, PhD, University of California San Francisco, San Francisco, CA
- David Humes, MD, University of Michigan, Ann Arbor, MI

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<tr>
<td>3:45pm-4:00pm</td>
<td>Living Membranes</td>
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<td>Dimitrios Stamatialis, PhD, University of Twente MRA Institute, Enschede, Netherlands</td>
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<tr>
<td>4:00pm-4:15pm</td>
<td>Nanoporous Membranes</td>
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<td>Dean Johnson, PhD, University of Rochester, Rochester, NY</td>
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<td>4:15pm-4:30pm</td>
<td>Nanodialysis Technology and Experience</td>
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<td>Karin Gerritsen, MD, PhD, UMC Utrecht, Netherlands</td>
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<td>4:30pm-4:45pm</td>
<td>Hemodialysis on the Run - WAK</td>
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<td>Victor Gura, MD, Cedar-Sinai Medical Ctr, Los Angeles, CA</td>
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<td>4:45pm-5:00pm</td>
<td>Update on the AWAK for PD</td>
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<td>Martin Roberts, PhD, AWAK Technologies, Inc., North Hills, CA</td>
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<td>5:00pm-5:15pm</td>
<td>The Regulatory Viewpoint</td>
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<td>Murray Sheldon, MD, FDA, Silver Spring, MD</td>
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### 3:45pm - 5:00pm

**PEDIATRIC 1 : Short-Term MCS Bridge Debate**

**Co-Chairs:**
- Tim Kaufmann, Prof. Dr., RWTH Aachen University, Aachen, NRW, Germany
- Michael Sabieski, RN, CCP, University of Louisville Jewish Hospital, Louisville, KY

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<td>3:45pm-3:55pm</td>
<td>Impella Devices</td>
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<td>Melissa Webb, MD, University of Chicago, Chicago, IL</td>
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<td>3:55pm-4:05pm</td>
<td>PediMag</td>
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<td>Peter Wearden, MD, PhD, Nemours Children’s Hospital, Orlando, FL</td>
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<td>4:05pm-4:15pm</td>
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<td>Angela Lorts, MD, Cincinnati Children’s Hospital, Cincinnati, OH</td>
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<td>4:15pm-4:25pm</td>
<td>ECMO Is Best</td>
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<td>Ravi Thiagarajan, MBBS, MPH, Boston Children’s Hospital, Boston, MA</td>
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<td>4:25-4:30pm</td>
<td>Discussion</td>
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<td>4:30pm-5:00pm</td>
<td>Pediatric Abstracts</td>
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#### 4:30pm-4:45pm

**Improvement in Six Minute Walk Distance and Brain-type Natriuretic Peptide as Markers of Recovery in Children with Continuous Flow Ventricular Assist Devices**

*Jason Goldberg, MD, Baylor College of Medicine, Houston, TX*

#### 4:45pm-5:00pm

**A Rising Tide Lifts All Boats: Ventricular Assist Device Utilization is Associated with Improved Overall Center Waitlist Survival**

*Chet Villa, MD, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH*

### 6:00pm - 7:00pm

**ASAIO Welcome Reception**

### 8:00am-5:00pm

**Abstract Poster Presentations**

**Bioengineering Posters**

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<tr>
<th>Poster Number</th>
<th>Title</th>
<th>Author(s)</th>
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<tbody>
<tr>
<td>101</td>
<td>A Novel Tissue Engineered Conduit for Use in Assisted Fontan Circulation</td>
<td>Christopher Broda, MD, Baylor College of Medicine, Houston, TX</td>
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<tr>
<td>102</td>
<td>Novel islet Macroencapsulations Devices for the Treatment of Diabetes Type 1</td>
<td>Dimitrios Stamatialis, PhD, University of Twente MRA Institute, Enschede, Netherlands</td>
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<tr>
<td>103</td>
<td>Impact of Physiologic Pulsatile Flow on Microcirculation During Cardiopulmonary Bypass</td>
<td>Gengo Sunagawa, MD, Cleveland Clinic, Cleveland, OH</td>
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<td>104</td>
<td>Treating Short Bowel Syndrome Through Enterogenesis: Defining a Protocol for Safe Bowel Distraction</td>
<td>Meredith Barrett, MD, University of Michigan, Ann Arbor, MI</td>
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<tr>
<td>105</td>
<td>Controlling the Variance of Normalized Hemolysis Index from in vitro Hemolysis Testing</td>
<td>Luidi Zhang, PhD, Soochow University, Suzhou, China</td>
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<td>106</td>
<td>Development of the Sequential Flow Pump: Principle of the Sequential Pressurization and Hemolysis Results in Second Model</td>
<td>Shintaro Hara, PhD, University of Tokyo, Tokyo, Japan</td>
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<td>107</td>
<td>The Effects of S-Nitrosothiol on Thrombin-induced Fibrin Formation</td>
<td>Terry Major, MS, University of Michigan, Ann Arbor, MI</td>
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<td>108</td>
<td>A Novel Generic Model for the Investigation of Intraventricular Flow Patterns in Individual Hearts</td>
<td>Kristin Hugenroth, Institute of Applied Medical Engineering, Aachen, Germany</td>
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Stephanie Zawada, The University of Arizona, Tucson, AZ

110 A Method to Increase PLA Scaffold Radiopacity Within Cardiac Vessels  
Anne-Marie Ginn, Texas A&M University, College Station, TX

111 Impact of IABP Timing on Aortic Hemodynamics: A Computational Investigation  
Gionata Fragomeni, PhD, Magna Graecia University, Catanzaro, Italy

112 Effect of Leaflet Orientation of Prosthetic Bi-leaflet Mechanical Heart Valve on Flow Through Aorta  
Satheesh Kumar, MD, Indian Institute of Technology Bombay, Mumbai, India

113 Aortic Valve Pressures During Left Ventricular Assist Device Support in a CFD-validated Model  
Gionata Fragomeni, PhD, Magna Graecia University, Catanzaro, Italy

114 Polymer Processing Techniques Impact Vascular Cell Behavior: How You Form It Matters  
Kaitlyn Ammann, BS, University of Arizona, Tucson, AZ

115 Computational Fluid Dynamics to Guide Impeller Refinements for Reducing the Potential for Thrombus Formation  
Mark Goodin, SimuTech Group Inc., Hudson, OH

Kaitlyn Ammann, BS, University of Arizona, Tucson, AZ

117 Novel Implantable Roller Pump to Treat Heart Failure-induced Lymphedema  
Samantha Cassel, Drexel University, Philadelphia, PA

118 Artificial Deep Neural Networks to Estimate Hemodynamic Parameters During Mechanical Circulatory Support Without Flow or Pressure Sensors  
Barry Kuban, BSEE, Cleveland Clinic, Cleveland, OH

119 Fatty Acids Influence Platelet Membrane Fluidity and Shear-mediated Activation  
Alice Sweedo, University of Arizona, Tucson, AZ

120 Development of an ex-vivo Perfusion System Suitable for Small Animal Vascularized Composite Allograft Models  
Emre Gok, MD, University of Michigan, Ann Arbor, MI

121 Metabolites Associated with Improved Survival in Alcoholic Hepatitis Patients are Enriched in ELAD-treated Subjects  
Lee Landeen, PhD, Vital Therapies, Inc., San Diego, CA

122 Drag-reducing Polymers for the Shunting of Rigid Erythrocytes Past Microvessel Bifurcations: a Potential Treatment for Sickle Cell Disease (SCD)  
Dan Crompton, BS, University of Pittsburgh, Pittsburgh, PA

123 Mechanical and Rheological Characterization of RBCs Following Hemoglobin Replacement for Potential Treatment of Sickle Cell Disease  
Luke Ziegler, BS, McGowan Institute of Regenerative Medicine, Pittsburgh, PA

124 Target-specific Electrospinning: a Novel Means of Creating Designer Fibrous Construct  
PRESENTATION CANCELLED

125 Inventive Knowledge Flow in Medical Technology Development: Patent or Publish?  
Michael DiCaro, BS, University of Arizona, Tucson, AZ

126 Additive Manufacturing as a Development Tool for a Rotary Blood Pump  
J. Ryan Stanfield, PhD, University of Utah, Salt Lake City, UT

Cardiac Posters

127 Infectious Adverse Events Associated with Durable Mechanical Circulatory Support Devices, a Ubiquitous Achilles’ Heel  
Jose Mendez, MD, Baylor University Medical Ctr, Dallas, TX

128 Readmission Rates in African-Americans Patients Supported with Left Ventricular Assist Devices (LVADs) After Hemodynamic Unloading  
Nir Uriel, MD, MSc, University of Chicago Medicine, Chicago, IL

129 Design Consideration of EVAHEART®2 LVAD Inflow Cannula  
Tadashi Motomura, MD, PhD, Evaheart Inc., Houston, TX

130 Weight Loss in Patients with Left Ventricular Assist Device Positioned Above or Below the Diaphragm for Patients with Severe Heart-Failure: Does it Make a Difference?  
David Chang, MD, Cedars-Sinai Heart Institute, Los Angeles, CA

131 Left Ventricular Assist Device Versus Total Artificial Heart: Do Patients Report the Same Energy Level?  
Heather Barone, RN, Cedars-Sinai Medical Ctr, Los Angeles, CA

132 Unplanned Readmissions 6 Months Post Discharge: Left Ventricular Assist Device Versus Total Artificial Heart  
Newman Huie, BSN, Cedars-Sinai Heart Institute, Los Angeles, CA

133 A Comparison of Driveline Infections: Left Ventricular Assist Device vs. Total Artificial Heart  
Carmelita Runyan, RN-BC,CCRN, Cedars-Sinai Heart Institute, Los Angeles, CA

134 Cardiac Transplant Outcomes in Patients on Continuous Flow Left Ventricular Assist Device Support  
John Spratt, MD, University of Minnesota, Minneapolis, MN

135 The Utility of the Prognostic Nutritional Index in Hemodialysis Dependent Patients Who Undergo Cardiovascular Surgery  
Soki Kurumisawa, MD, Jichi Medical University, Tochigi, Japan
136 Global VAD Coordinator Practices with the Use of the HeartWare HVAD System Waveforms and Logfiles

*Thomas Schlöglhofer, BSc, Medical University of Vienna, Vienna, Austria*

137 New Quantitative Method for Evaluating Driveline to Skin Adhesion in Ventricular Assist Systems

*Tomoyuki Yambe, MD, PhD, Tohoku University, Sendai, Miyagi, Japan*

138 Our Experience with Sleep Apnea Syndrome After Implantation of Left Ventricular Assist Device

*Puneet Garcha, BS, ANW, Plymouth, MN*

139 Mixing Phenomena During Interaction of Internal and External Circulations - Developing a Combined Simulation Platform of the Human Circulation

*Philippe Grieshaber, MD, Giessen University Hospital, Giessen, Germany*

140 Promoting Growth Through Partnership: ICCAC's VAD Mentorship Program

*Jesus Casida, PhD, RN, APN-C, University of Michigan, Ann Arbor, MI*

141 Construction and Evaluation of a VAD Care App as Self-management Tool for Patients with Ventricular Assist Devices (VADs)

*Yirong Zhou, MD, Wright State University, Dayton, OH*

142 Using HeartWare HVAD Log Files to Observe Patient Behavior and Battery Function

*Kristen Kiehl, BS, Aurora St. Luke's Medical Center, Milwaukee, WI*

143 Mechanical Circulatory Support Nurse Practitioners’ Work Intensity, Role Stress, and Burnout

*Jesus Casida, PhD, RN, APN-C, University of Michigan, Ann Arbor, MI*

144 Use of a Mock Ventricle to Simulate Functionality of the Fibrillating Heart for Testing Direct Cardiac Compression Devices

*Joanna Grabiska, Medical University of Vienna, Vienna, Austria*

145 Reduction of Mitral Regurgitation Following Continuous Flow Left Ventricular Assist Device Implantation Is not Associated with Improved Clinical Outcomes

*Renaldo Williams, MD, Vanderbilt University Medical Ctr, Nashville, TN*

146 Patient and Caregiver Activation May Play a Role in Outcomes of Patients Who Receive Left Ventricular Assist Devices

*Kyle Bass, MD, Baylor Scott & White Research Institute, Dallas, TX*

147 Early Diagnosis of Device Thrombosis in Left Ventricular Assist Device Patients

*Geetha Bhat, MD, PhD, Advocate Christ Medical Ctr, Oak Lawn, IL*

148 Longitudinal Neutrophil to Lymphocyte Ratio Assessment After Left Ventricular Assist Device Implantation

*Liz Black, BS, University of Maryland Medical Ctr, Baltimore, MD*

149 Complications in Thyroid Disorder Patients with Left Ventricular Assist Devices

*Hannah Voorhees, BS, University of Maryland Medical Ctr, Baltimore, MD*

150 Impact of Diuretic Dosage on Post-operative Right Heart Failure in LVAD Patients

*Jaclyn Wu, BS, Ohio State University, Columbus, OH*

151 Effect of Left Ventricle Size on LVAD Thrombosis Risk

*Venkat Keshav Chivukula, PhD, University of Washington, Seattle, WA*

152 Thromboelastography Platelet Mapping (TEG-PM) Based Anticoagulation Protocol for Mechanical Circulatory Support Devices (MCSD): a Follow Up Study

*Oksana Volod, MD, Cedars Sinai Medical Ctr, Los Angeles, CA*

153 Case Series of a Novel Peripheral Right Ventricular Assist Device for Acute Right Heart Failure

*Amber Melvin, MD, University of Rochester, Rochester, NY*

154 Long-term Impacts of Reducing Pulmonary Vascular Resistance with VAD Therapy in Bridge-to-transplant Patients

*Jennifer J. Chung, MD, Hospital at University of Pennsylvania, Philadelphia, PA*

155 Long Term Outcomes of Elderly Patients Receiving Continuous Flow Left Ventricular Support

*Nicolas Broazi, MD, University of Miami, Miami, FL*

156 Ventricular Assist Device Cannulation Strategy for the Failing Single Ventricle: Atrium or Ventricle?

*Katsuhide Maeda, MD, PhD, Stanford University, Stanford, CA*

157 Implantable Hemodynamic Monitoring in Patients with an LVAD

*Louren Wolman Ahдут, BS, Scripps Health, San Diego, CA*

158 Postoperative Acute Kidney Injury After Implantation of Left-ventricular Assist Device: a Comparison of Heartmate II and HeartWare Devices

*Andre Critisinelis, BS, BA, Baylor College of Medicine, Houston, TX*

159 Hemodynamic Effects of a Compact Maglev Centrifugal LVAD Under Pulsatile Operation: an in-vitro Study

*Po-Lin Hsu, PhD, Soochow University, Suzhou, Jiangsu, China*

160 Lactate Dehydrogenase Levels as Predictors of Acute Kidney Injury in the Setting of Pump Hemolysis in LVAD Patients

*Ghulam Murtaza, MD, Advocate Christ Medical Ctr, Oak Lawn, IL*

161 PCC Use in VAD Implantation

*Yaron Barac, MD, Advocate Christ Medical Ctr, Durham, NC*

162 Left Ventricular Assist Device Driveline Infection and Obesity

*Mehmet H. Akay, University of Texas Health Science Center, Houston, TX*

163 Inflow Cannula Position Variability Between 2nd and 3rd Generation Left Ventricular Assist Devices

*Jama Jahanyar, MD, Mayo Clinic, Phoenix, AZ*

164 Evaluation of Doxycycline’s Effect on vWF and Platelets in the Presence of Haemolysis

*Christian Robinson, Swansea University, Swansea, United Kingdom*
165 Elevated Heart Rate in Left Ventricular Assist Device (LVAD) Patients: Good or Bad?
   Alexandra Eisenbeiss, BS, Intermountain Medical Center, Murray, UT

166 Efficacy of Tolvaptan Therapy in Stage D Heart Failure Patients After LVAD Implantation
   George Gavrilos, Pharm D, MA, Advocate Christ Medical Center, Oak Lawn, IL

167 Single Center Experience of Bivads
   Gregory Macaluso, MD, Advocate Christ Medical Center, Oak Lawn, IL

168 Time-related Risk of Adverse Events During Long-term Support with HeartMate II
   Salvatore Poddì, MD, Mayo Clinic, Rochester, MN

Pediatric Posters

169 Antithrombotic Guideline for the PumpKIN Trial: Design and Rationale
   Patti Massicotte, MD, University of Alberta, Edmonton, Alberta

170 Durable Continuous Flow VAD Therapy Induces Pathogenic Changes in AV Leaflets: Gene Expression Changes in Common with Calcific Aortic Valve Disease Leaflets
   Katsuhide Maeda, MD, PhD, Stanford University, Stanford, CA

171 Effect of Inhaled Nitric Oxide on Hemodynamics in Lambs with Superior Cavopulmonary Shunt
   Hitoshi Kanamitsu, MD, Stanford University, Stanford, CA

172 Perfluorocarbons Promote Type II Pneumocyte Maturation and Surfactant Protein Synthesis in Preterm Lambs Supported on an Artificial Placenta
   Elena Perkins, BS, University of Michigan, Ann Arbor, MI

173 Cardiac Injury in Premature Lambs Supported by the Artificial Placenta
   Elena Perkins, BS, University of Michigan, Ann Arbor, MI

174 In vitro Characterization of the Pittsburgh Pediatric Ambulatory Lung Device
   Ryan Orizondo, PhD, University of Pittsburgh, Pittsburgh, PA

175 Platelet Aggregation Results in Chronic Studies with the Penn State Pulsatile Pediatric Ventricular Assist Device
   Branka Lukic, MS, Penn State University, Hershey, PA

176 Diamond in the Rough? Outcomes of VAD Implantation as a Bridge-to-decision in Children and Young Adults with Social Concerns
   Chet Villa, MD, Cincinnati Children’s Hospital, Cincinnati, OH

177 Modeling Fetal and Neonatal Circulations with and Without Pulmonary Atresia
   Juliana Sánchez-Posada, PhD, Universidad de los Andes, Bogotá, Colombia

Friday, June 23

8:00am - 12:00pm GENERAL SESSION 2
   Co-Chairs:
      Jonathan Haft, MD, University of Michigan, Ann Arbor, MI
      Marvin Slepian, MD, University of Arizona, Tucson, AZ

8:00am - 8:30am ASAIOyfi - for young innovators - Rapid Fire Presentations

8:00am-8:05am Using Compliant Oxygenators to Improve Flow Conditions in Pulsatile ECMO Circuit
   Philine Ritter, MSc, enmodes GmbH, Aachen, NRW, Germany

8:05am-8:10am RAS-Q - A Novel Passive Right Heart Assist System
   Tim Kaufmann, PhD, RWTH Aachen University, Aachen, NRW, Germany

8:10am-8:15am The Influence of Anastomosis Angle of Outflow Graft to Aorta on Hemodynamics of Aortic Valve Regurgitation in Left VentricularAssist Device Support
   Kei Iizuka, MD, National Cerebral & Cardiovascular Center, Suita, Osaka, Japan

8:15am-8:20am Effect of Eccentricity in a Blood Shearing Device Using Transient Cfd Analysis
   Peng Wu, PhD, Soochow University, Suzhou, Jiangsu, China

8:20am-8:25am Large Eddy Simulation and Hemolysis Estimation of the FDA Nozzle Model
   Peng Wu, PhD, Soochow University, Suzhou, Jiangsu, China

8:30am - 9:30am ASAIOyfi - for young innovators - Student Design Competition Presentations

8:30am - 9:30am Urinary Catheter Redesign
   Thomas Wright, BME, North Carolina State University, Raleigh, NC

8:37am - 8:44am HealthWaze: A Smart Tag System for Tracking an In-Patient Population in a Hospital
   Sajani Jivan, University of Arizona, Tucson, AZ

8:44am-8:51am Self-Clearing VP Shunt
   Jonathan Freund, North Carolina State University, Raleigh, NC

8:51am-8:58am The "MICELI" – Point of Care Microfluidic Aggregometry System
   Andrea Santoleri, Politecnico di Milano, Milano, Italy

8:58am-9:05am Adjustable Trocar
   Zaid Atto, BASc, EngSci, University of Toronto, Toronto, Ontario

9:05am-9:12am Hydraulic Cardiac Sleeve
   Rachel McCoy, Carnegie Mellon University, Pittsburgh, PA
9:12am-9:19am  Extrusion 3D Printing of a Microfluidic Chip for Use in Medical Research  
Rachelle Walter, BS, University of Colorado, Denver, CO

9:19am-9:30am  Discussion

9:30am - 9:50am  Keynote Address  
Medical Devices, Artificial Organs, Organs-On-A Chip And Beyond: How To Impact Healthcare In The Future - Perspectives From The NIH  
Roderic Pettigrew, MD, PhD, Director NIBIB/NIH, Bethesda, MD

9:50am - 10:15am  Keynote Address  
Stretching Our Way into the Future - Flexible and Stretchable Electronics - New Materials and Sensors for Medicine  
John Rogers, PhD, Northwestern University, Evanston, IL

10:15am-11:00am  Visit Exhibits & Enjoy Refreshments

10:15am-11:00am  Visit Posters

11:00am-12:00pm  GENERAL SESSION 2 - Continued

11:00am-11:30am  ASAIO History Group  
Scientific Biography of William S Pierce, MD  
Gerson Rosenberg, PhD, Penn State College of Medicine, Hershey, PA

11:30am-12:00pm  ASAIO Hastings Lecture  
The Total Artificial Heart - Past, Present and Future  
Jack Copeland, MD, University of Arizona, Tucson, AZ  
Introduction Richard Smith, MSEE, University of Arizona, Tucson, AZ

12:00pm-12:15pm  Fellowship Award Announcements

12:15pm-1:30pm  Lunch Break

1:30pm-3:00pm  CARDIAC 3- Acute Temporary Support

Co-Chairs:  
Jonathan Rich, MD, Northwestern University, Chicago, IL  
Claudius Mahr, DO, University of Washington, Seattle, WA

1:30pm-1:45pm  Case #1:  
INTERMACS I Patient on Short-Term Support: Transition to Durable System and Timing  
Ulrich Jorde, MD, Montefiore Medical Center, Bronx, NY

1:45pm-1:50pm  Discussion

1:50pm-2:05pm  Case #2:  
Aly El Banayosy, MD, INTEGRIS Baptist Medical Center, Oklahoma City, OK

2:05pm-2:15pm  Discussion

2:15pm-3:00pm  Cardiac Abstracts

2:15pm-2:30pm  Concomitant Mitral Valve Procedures at the Time of Continuous-flow Left Ventricular Assist Device Implantation in Patients with Preoperative Severe Mitral Regurgitation  
Masashi Kawabori, MD, Texas Heart Institute, Houston, TX

2:30pm-2:45pm  High-molecular-weight von Willebrand Factor Multimer Loss in Patients on Short Term Mechanical Circulatory Support Devices  
Oksana Volod, MD, Cedars Sinai Medical Center, Los Angeles, CA

2:45pm-3:00pm  Heartware™ vs. Heartmate II™: A Comparison of Post-implant Surgical Recovery  
Alexandra Eisenbeiss, BS, Intermountain Medical Center, Murray, UT

1:30pm-3:00pm  BIOENGINEERING 3
Co-Chairs:
Tom Sugar, PhD, ASU Polytech Engineering Program, Mesa, AZ
Arun Jayaraman, PhD, PT, Northwestern University, Chicago, IL

1:30pm-1:45pm
Mobility Exoskeletons, Robots: Artificial Organs Too!
Marvin J. Slepian, MD, University of Arizona, Tucson, AZ

1:45pm-2:00pm
Exoskeletons & Augmentation Systems - Present and Emerging Technology and Applications
Tom Sugar, PhD, Arizona State University, Mesa, AZ

2:00pm-2:15pm
The Hidden Mechanics of Human Locomotion and Relevance to Wearable Robots
Elliot J. Rouse, PhD, Rehabilitation Institute of Chicago, Chicago, IL

2:15pm-2:30pm
Medical and Rehab Applications of Exoskeletons and Robotics
Arun Jayaraman, PhD, PT, Northwestern University, Chicago, IL

2:30pm-2:45pm
Funding Opportunities and Commercialization of Robotics and Mobility Systems
Bruce Floersheim, PhD, GoX Studios, Tempe, AZ

2:45pm-3:00pm
Q&A

1:00pm-3:00pm
VAD 2 Shark Tank

Chairs:
Peggy Blood, MSN, RN, University of Alabama, Birmingham, AL
Karl Nelson, RN, MBA, INTEGRIS Baptist Medical Center, Oklahoma City, OK
Mark Slaughter, MD, University of Louisville, Louisville, KY

1:00pm-1:15pm
a. VAD Equipment Management
Kathleen Schultz, BSBME, MBA, Aurora St. Luke’s Medical Ctr, Milwaukee, WI

1:15pm-1:30pm
b. Sustainable Staffing Models
Peggy Blood, MSN, RN, University of Alabama, Birmingham, AL

1:30pm-1:45pm
c. Keeping Rehab, SNF and Dialysis Centers Ready to Receive
Carole Balley, MSN, UVA, Charlottesville, VA

1:45pm-2:00pm
d. Self Care Management Model
Jesus Casida, PhD, RN, University of Michigan, Ann Arbor

2:00pm-2:15pm
e. Efficacy of a Thrombus Management Protocol
Mary Bradbury, PharmD, Inova Fairfax Hospital, Falls Church, VA

2:15pm-2:30pm
f. Importance of Understanding Why Patients Refuse DT LVAD
Matthias Loebe, MD, PhD, Miami Transplant Institute, Miami, FL

2:30pm-2:45pm
g. Outpatient Rehabilitation of VAD Patients & Monitoring Daily Life Activity
Thomas Schloeglhofer, BSc, Medical University of Vienna, Vienna, Austria

2:45pm-3:00pm
h. Orientation/Education of Team Members
Erin Justice, RN, MS, BSN, Medstar Heart and Vascular Institute, Washington, DC

1:30pm-3:00pm
PULMONARY 3-Bioartificial Lungs

Chair: Bryan Whitson, MD, PhD, Ohio State University, Columbus, OH

1:30pm-1:45pm
Dongfang Wang, MD, PhD, University of Kentucky, Lexington, KY

1:45pm-2:00pm
William Federspiel, PhD, University of Pittsburgh, Pittsburgh, PA

2:00pm-2:15pm
Panel Discussion

2:15pm-3:00pm
Pulmonary Abstracts

2:15pm-2:30pm
Low Resistant Respiratory Assist System for Paracorporeal Lung Support: an in-vivo Study
Ralf Borchardt, PhD, ennmodes GmbH, Aachen, NRW, Germany

2:30pm-2:45pm
In-vitro and in-vivo Chronic Studies of an Integrated, Wearable Blood Pump-lung
Shalv Madhani, BS, University of Pittsburgh, Pittsburgh, PA

2:45pm-3:00pm
A CFD Model to Predict Oxygen Transfer in Artificial Lungs
Andreas Kaesler, Dipl.-Ing, RWTH University Aachen, Aachen, Germany

1:30pm-3:00pm
RENAI 3-Quantum Leaps: Merging Biology & Technology

Co-Chairs:
Jasper Boomker, PhD, Dutch Kidney Foundation, Bussum, Noord, Netherlands
William Fissell, MD, Vanderbilt University, Nashville, TN

1:30pm-1:50pm
Bioengineering of Renal Membranes Using Supramolecular Biomaterials
Patricia Dankers, PhD, Eindhoven University of Technology, Netherland

1:50pm-2:10pm
Microfluidic Diagnostics
Ian Papautsky, PhD, University of Illinois, Chicago, IL

2:10pm-2:30pm
Bioengineered Organs
Jason Wertheim, MD, PhD, Northwestern University, IL

2:30pm-3:00pm
Renal Abstracts
2:30pm-2:45pm  Small Animal Study and Hemocompatibility of Small Form Factor Microfluidic Filtration System with Nitride Membranes
   Dean Johnson, PhD, University of Rochester, Rochester, NY

2:45pm-3:00pm  Update on Continuous Electrolyte and pH Monitoring
   Fokko Wieringa, PhD, imec, Eindhoven, Noord-Brabant, Netherlands

1:30pm-3:00pm  PEDIATRIC 2: ECMO
   Co-Chairs:
      Ronald Hirschl, MD, CS Mott Children’s Hospital, Ann Arbor, MI
      Meredith Barrett, MD, University of Michigan - ECMO Lab, Ann Arbor, MI

1:30pm-1:45pm  Quadrox as a Central Shunt
   David Hoganson, MD, Boston Children’s Hospital, Boston, MA

1:45pm-2:00pm  ECMO and the FDA: Update
   Claire Hambright, BS, FDA, Silver Spring, MD

2:00pm-2:20pm  Debate: Using a "Right Sized" ECMO Circuit
   Adult Circuits Are Fine for Small Patients
      Neale Zingle, BS, LP, CCP, Lurie Children’s Hospital, Chicago, IL
   ECMO Circuits Should Be Appropriately Sized for the Patient
      Robert Bartlett, MD, University of Michigan, Ann Arbor, MI

2:20pm-3:00pm  Pediatric Abstracts

2:22pm-2:34pm  Temporary Ventricular Assist Devices as a Bridge to Transplantation: Assessing the Impact of an Evolving Strategy
   Chet Villa, MD, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH

2:34pm-2:46pm  Development Update on the Ension pCAS System
   Mark Gartner, PhD, MBA, Ension Inc., Pittsburgh, PA

2:46pm-2:58pm  Perfluorocarbons and the Artificial Placenta: Preventing Injury and Promoting Lung Development
   Joseph Church, MD, University of Michigan Health System, Ann Arbor, MI

3:00pm-3:45pm  Visit Exhibits & Enjoy Refreshments

3:00pm-3:45pm  Visit Posters

3:45pm-5:00pm  CARDIAC 4-Debate-VADS: Options for the Elderly
   Co-Chairs:
      James Long, MD, PhD, INTEGRIS Baptist Medical Center, Oklahoma City, OK
      Randall Starling, MD, Cleveland Clinic, Cleveland, OH

3:45pm-4:05pm  Pro: Heart Transplantation Should Be Favored Over Durable VAD Strategy
   Emma Birks, MD, PhD, University of Louisville, Louisville, KY

4:05pm-4:25pm  Con: All Elderly Patients Should Be Approached with VADS First
   Simon Maltais, MD, PhD, Mayo Clinic, Rochester, MN

4:30pm-5:00pm  Cardiovascular Imaging in Children

4:30pm-4:45pm  Bridging to Heart Transplantation (BTT) in Seniorenagenars with LVADs
   Eugene DePasquale, MD, Ronald Reagan UCLA Medical Center, Buena Park, CA

3:45pm-5:00pm  BIOENGINEERING 4
   Co-Chairs:
      Peter Wearden, MD, PhD, Nemours Children’s Hospital, Orlando, FL
      George Pantalos, PhD, University of Louisville, Louisville, KY

3:45pm - 4:15pm  Managing the Future of Cardiovascular Imaging in Children
   Rajesh Krishnamurthy, MD, Nationwide Children’s Hospital, Columbus, OH

4:15pm - 4:45pm  Falling in Love With Your Own Technology! Pros, Cons and Hitchhiking
   Kurt Dasse, PhD, Hbeat Medical LLC, Cocoa, FL

4:45pm-5:00pm  Discussion

3:45pm-5:00pm  PULMONARY 4 - ELCS and Big Data: Driving Innovation and Outcome
   Chair: Joseph Zwischenberger, MD, University of Kentucky, Lexington, KY

3:45pm-4:00pm  Jonathan Haft, MD, University of Michigan, Ann Arbor, MI
4:00pm-4:15pm  James Blum, MD, Emory Healthcare/VA, Atlanta, GA
4:15pm-4:30pm  Ryan Barbaro, MD, University of Michigan, Ann Arbor, MI
4:30pm-4:45pm  Steven Conrad, MD, PhD, Louisiana State University HCS, Shreveport, LA
4:45pm-5:00pm  Panel Discussion
3:45pm-5:00pm  RENAL 4-Vascular Access: From Bedside to Bench to Bedside

Co-Chairs:
William Fissell, MD, Vanderbilt University, Nashville, TN
Andrea Remuzzi, Eng D, University of Bergamo, Daimine, Bergamo, Italy

3:45pm-4:00pm  Biology Of Vascular Access Dysfunction
Prabir Roy-Chaudhury, MD, PhD, University of Arizona, Tucson, AZ

4:00pm-4:15pm  Novel Therapies for Vascular Access Dysfunction
Joris Rotmans, MD, PhD, Leiden University Medical Ctr, Leiden, Netherlands

4:15pm-4:30pm  Clinical Trials in Vascular Access: Time for a Change
Gerald Beathard, MD, PhD, University of Texas Medical Branch, Houston, TX

4:30pm-4:45pm  Patient Perspectives on Vascular Access: Not to Be Forgotten
Terry Faust Litchfield, Lifeline, Vernon Hills, IL

4:45pm-5:00pm  Discussion

3:45pm-5:00pm  PEDIATRIC 3: Beyond Bridge to Transplant

Co-Chairs:
Robert Jaquiss, MD, UT Southwestern/Children's Health, Dallas, TX
Amanda Schubert, RN, Cincinnati Children's Hospital Medical Center, Cincinnati, OH

3:45pm-4:00pm  Destination Therapy
Jenna Murray, MSN, CPNP-AC, Lucile Packard Children's Hospital, Palo Alto, CA

4:00pm-4:15pm  Psychosocial Issues for VAD Patients: Sex, Drugs, and Rock n' Roll
Christina Vanderpluym, MD, Boston Children's Hospital, Boston, MA

4:15pm-4:30pm  Remote Monitoring
Holger Buchholz, MD, Stollery Children’s Hospital, Edmonton, Alberta

4:30pm-4:45pm  Home Echo
David Rosenthal, MD, Stanford University, Palo Alto, CA

4:45pm-5:00pm  End of Life Issues
Beth Kaufman, MD, Stanford University, Palo Alto, CA

5:15pm-5:45pm  ASAIO Member Business Meeting

8:00am-5:00pm  Abstract Poster Presentations

**Bioengineering Posters**

178 Shear Induced Degradation of Signal Molecules in PI3K-Akt Pathway in Human Platelets
Shirong Zheng, MD, University of Louisville, Louisville, KY

179 Controlled Gas Exchange in Whole Lung Bioreactors
Alexander Engler, MS, Yale University, New Haven, CT

180 The Platelet Activity State Assay Can Detect Shear-mediated Platelet Activation Associated with Thrombosis in LVAD Patients
Filippo Console, PhD, Università di Vita Salute, Milano, Italy

181 Development of Axial Flow Blood Pumps That Implanted at Aortic Valve Position to Realize Concept of Valvopump
Eiji Okamoto, PhD, Tokai University, Sapporo, Hokkaido, Japan

182 Long-term Use Assessment of the Apico-aortic Blood Pump: Bearing System Analysis
Bruno Utiyama, PhD, Instituto Dante Pazzanese de Cardiologia, São Paulo, Brazil

183 The Progress in the Sputnik Ventricular Assist Device Development
Dmitry Telyshev, PhD, National Research University of Electronic Technology, Zelenograd, Moscow, Russia

184 Muscle-powered Counterpulsation VAD for Long-term Cardiac Support
Jooli Han, Carnegie Mellon University, Pittsburgh, PA

185 Open Storage Effect on Nitric Oxide Releasing Materials
Kagya Amoako, PhD, University of New Haven, West Haven, CT

186 Comparison of Large-eddy and Reynolds-averaged Navier-stokes Simulations Regarding Their Potential to Predict Hemolysis in Blood Pumps
Benjamin Torner, Institute of Turbomachinery, Rostock, Germany

187 Asymmetric Membranes for Extracorporeal Blood Circulation Devices
Monica Faria, PhD, Universidade de Lisboa, Lisbon, Portugal

188 Effect of Turbulent Flow on von Willebrand Factor
Choon-Sik Jhun, PhD, Penn State College of Medicine, Hershey, PA

189 ECG-synchronized Rotational Speed Change System Has Preventive Effect on Right Heart Failure During Continuous-flow LVAD Support
Daichi Akiyama, MD, National Cerebral and Cardiovascular Center, Research Institute, Osaka, Japan

190 Comparative in-vitro Hemolysis as a Measurable Parameter for Minor Polishing Defect Diagnosis for a Compact Maglev LVAD
Po-Lin Hsu, PhD, Soochow University, Suzhou, Jiangsu, China
191 Use of Robust Mock Circulatory Loops to Effectively Evaluate the Physiological Flow Performance of VADs
Luke Herbertson, PhD, FDA, Silver Spring, MD

192 Artificial Shear Effect on Leukocytes at a Biomaterial Interface Using a Rheometer PRESENTATION CANCELLED
Gemma Radley, Calon Cardio - Technology, Ltd., Swansea, United Kingdom

193 Prediction Method of Shear Induced Thrombus Formation on Pipe Orifice Flows by Hybrid CFD Methods with Considering Aggregation Process
Masaki Tamagawa, PhD, Kyushu Institute of Technology, Kitakyushu, Fukuoka, Japan

194 Progress in the Development of an Automatic Ventricular Assist Device with Pulse Augmentation and Regurgitant Flow Shutoff
Nicole Byram, BS, Cleveland Clinic, Cleveland, OH

195 Methodology for the Design of Control System Based on the Concepts of Reliability Analysis and Inherent Safety for VADs
Jefferson Dias, Jr., MD, University of São Paulo, São Paulo, Brazil

196 Method for Design a Control System Considering Fail and Safety Interaction Between VAD and Patient Body
Andre Cavalheiro, Sr., PhD, Fundacao Santo Andre, Santo Andre, Brazil

197 Transient Power Elevation During Iron Dextran Infusion in a Patient with a Heart Mate II Continuous-flow Left Ventricular Assist Device: Case Report and in vitro Testing
Paulino Alvarez, MD, Cleveland Clinic, Cleveland, OH

198 Wireless Mechano-Acoustic Characterization of Altered Flow in Ventricular Assist Devices
Genevieve Messina, University of Arizona, Tucson, AZ

199 Prediction Method of Shear Induced Thrombus Formation on Pipe Orifice Flows by Hybrid CFD Methods with Considering Aggregation Process
Masaaki Tamagawa, PhD, Kyushu Institute of Technology, Kitakyushu, Fukuoka, Japan

200 Method for Design a Control System Considering Fail and Safety Interaction Between VAD and Patient Body
Andre Cavalheiro, Sr., PhD, Fundacao Santo Andre, Santo Andre, Brazil

201 Framework for Development of Hybrid Control System for Ventricular Assist Device
Marcelo Silva, MD, Escola Politecnica da USP, São Paulo, Brazil

202 Characterization of an Arteriovenous Mock Circulation Loop for Testing Intervascular Bioartificial Organs
Jarrett Moyer, MD, University of California San Francisco, San Francisco, CA

203 Formation of Aggregates in Perfluorocarbon Emulsions When These are Diluted with Plasma Expanders
Yissel Luengas, Universidad de los Andes, Bogotá, Colombia

204 A Bicameral Pump for Sustained Moderate Flow Extracorporeal Circulation
Edward Leonard, PhD, Columbia University, New York, NY

205 Design and Development of a Hybrid Mock Circulation Loop for Hardware-in-the-loop Validation of Ventricular Assist Devices
Ethan Rapp, University of Texas at Austin, Austin, TX

206 Stability of PEG and Zwitterionic Surface Modifications on PDMS PDMS
Thomas Plegue, VA Ann Arbor Healthcare System, Ann Arbor, MI

207 Susceptibility to G-load and Tilting Movement of CH-VAD Fully Magnetically Suspended Blood Pump
Chen Chen, PhD, CH Biomedical Inc., Suzhou, Jiangsu, China

Cardiac Posters

208 Motion-activated System for Better Chest Drainage: Bench Testing, in vivo, and First Clinical Experience Report
Jamshid Karimov, MD, PhD, Cleveland Clinic, Cleveland, OH

209 Synchronized Paracorporeal Electromagnetic Pulsatile Pump Can Decrease Infarct Size in Porcine Model with Acute Myocardial Infarction
Chi-Hsiao Yeh, MD, Chang Gung Memorial Hospital, Keelung, Keelung, Taiwan

210 International VAD Coordinator Team Compositions and Advanced Nurse Practitioners in VAD Teams
Thomas Schlaghofer, BS, Medical University of Vienna, Vienna, Austria

211 Space and Time Resolved Detection of Platelet Activation and von Willebrand Factor Conformational Changes in Deep Suspensions
Jacopo Biasetti, PhD, Johns Hopkins University, Baltimore, MD

212 Changes in Hemodynamic and Pump-related Parameters in Regards to Posture in Calves Implanted with a Continuous-flow Total Artificial Heart
Nicole Byram, BS, Cleveland Clinic, Cleveland, OH

213 Neutrophil to Lymphocyte Ratio Predicts Survival in Patients Supported with Extracorporeal Membrane Oxygenation
Gardner Yost, MS, Advocate Christ Medical Center, Oak Lawn, IL

214 High Oxygen Partial Pressure Generates Reactive Oxygen Species and Pro-inflammatory Cytokines During Cardiopulmonary Bypass
Yutaka Fujii, PhD, Niigata University of Health and Welfare, Niigata, Japan

215 Towards the Perfect Fit of VADs: Virtual Fitting and Hemodynamic Investigation
Simon Sonntag, PhD, enmodes GmbH, Aachen, Germany
216 Continuous-flow Left Ventricular Assist Device Therapy in Adult Patients with Transposition of the Great Vessels
Tadahisa Sugiura, MD, Texas Heart Institute, Houston, TX

217 Influence of Systemic Blood Pressure and LVAD Speed on Thrombogenicity of LVAD Therapy
Venkat Keshav Chivukula, PhD, University of Washington, Seattle, WA

218 3D Printed Mitral Valve Models: Realistic Surgical Simulation
Divneet Mandair, University of Arizona, Tucson, AZ

219 Thrombogenic Potential of Altered Hemodynamics at the Left Ventricular Apex-LVAD Cannula Interface: a Numerical Study
Filippo Consola, PhD, Università Vita Salute, Milano, Italy

220 Trend Analysis of the Recent Redemption Price of the Medical Devices in Japanese Insurance System
Eiki Akagawa, PhD, National Cerebral & Cardiovascular Center, Suita, Japan

221 Optimal Cannula and Pump Position Associating with Better Left Ventricular Unloading and Clinical Outcome in Patients with HeartMate II Ventricular Assist Device
Teruhiko Imamura, MD, PhD, University of Chicago Medicine, Chicago, IL

222 Geographic Distance Implications in LVAD Therapy Clinical Outcomes
Dalin Rees, Intermountain Medical Center, Murray, UT

223 Thrombus Formation in Chest Tubes: Histological Analysis and High-speed Camera Visualization of Intraluminal Clot
Jamshid Karimov, MD, PhD, Cleveland Clinic, Cleveland, OH

224 The Role of NOX4 (NADPH Oxidase 4) in Platelet Activation
Naing Bajaj, BS, University of Arizona, Tucson, AZ

225 Non Coronary Aortic Valve Cusp Tear from Peripheral Implants When Utilized as Left Ventricular Vent for Patients on Extra Corporeal Membrane Oxygenation Support for Cardiogenic Shock
Muhammad Massood, MD, Washington University in St. Louis, St. Louis, MO

226 Identifying the Origin of Gastrointestinal Bleeding in Left Ventricular Assist Devices- Is Timing of the Essence?
Alyssa Choi, MD, University of Washington, Seattle, WA

227 HMII Driveline Fracture and Outflow Graft Bend Relief Disconnection with Pseudoaneurysm Formation
Bessie Sycip, RN, Medstar Washington Hospital Center, Washington, DC

228 Effects of Using a Torsional Ventricular Assist Device (tVAD) on Regional Cardiac Mechanics
Elaine Soohoo, MS, BME, Carnegie Mellon University, Pittsburgh, PA

229 Continuous Suction Monitoring Reveals High Probability of Suction in Well-adjusted VAD-outpatients
Heinrich Schima, PhD, Medical University Vienna, Vienna, Austria

230 Modeling of Mechanical Circulatory Support Pump Interactions with the Variable Hemodynamic Environment
David Horvath, BS, Cleveland Clinic, Cleveland, OH

231 Advantages of Integrating Pressure-regulating Devices into Mechanical Circulatory Support Pumps
David Horvath, BS, Cleveland Clinic, Cleveland, OH

232 Versatile Potential of a New Rotary Blood Pump Heartmate 3 in Patients with Multiple Assist Device Related Complications
Jens Garbade, MD, PhD, Heart Center Leipzig, Leipzig, Germany

233 Blood Trauma and Inflammation During Cardiopulmonary Bypass: The Role of Air and Negative Pressure
Benjamin Carr, MD, University of Michigan, Ann Arbor, MI

234 Predictive Value of Preoperative Prealbumin on Outcomes in Patients Undergoing LVAD Implantation
Andre Critsinelis, BS, Baylor College of Medicine, Houston, TX

235 Outcomes in Adult Patients with Advanced Heart Failure and Small Body Size Undergoing LVAD Implantation
Nastasya Volkovicher, THI/BCM, Houston, TX

236 In vitro Modelling of Calcific Particles and Testbed for Cerebral Protection Devices (CPD) Under Physiological Conditions
Catharina Lierath, MD, Institute of Applied Medical Engineering/AME, Aachen, Germany

237 Renal Function with Long-term Support on a Durable Left Ventricular Assist Device
Masatoshi Akiyama, MD, PhD, Tohoku University Hospital, Sendai, Japan

238 Percutaneous Assessment and Management of Outflow Graft Obstruction in Patients with Continuous Flow Left Ventricular Assist Devices: a Single Center Case Series
Carlos Davila, MD, Tufts Medical Center, Boston, MA

239 Synchronization of a Soft Robotic Ventricular Assist Device to the Native Cardiac Rhythm Using an Epicardial Electrogram
Nickolay Vasilyev, MD, Boston Children’s Hospital, Boston, MA

240 Chronic Administration of Electrical Microcurrent to the Heart is Safe and Does Not Impair Cardiac Function
Johannes Mueller, MD, Berlin Heals, Berlin, Germany

241 ECMO Utilization and Short-term Outcomes in Pediatric Patients with Congenital Heart Disease
Alejandro Martinez Herrada, MD, Nicklaus Children’s Hospital, Miami, Fl

242 Management of Heart Failure Patients Based on Pulmonary Artery Pressure Measurements Using CardioMEMS - Single Center Experience
Hema Krishna, MD, Medical College of Wisconsin, Milwaukee, WI
243 Six-minute Walk Distance Under 200 Meters Predicts 30-day Heart Failure Readmission
Hema Krishna, MD, Medical College of Wisconsin, Milwaukee, WI

244 The Effect of Extreme Hemodilution with Crystalloids and Colloids on Platelet Aggregability
Jan Simoni, PhD, Texas HemoBioTherapeutics & BioInnovation Center, Lubbock, TX

245 Impact of Multiple Sternotomies on Heart Transplant Survival
Eugene DePasquale, MD, University of California Los Angeles, Los Angeles, CA

246 Evaluation of Late Follow-up in Patients with Pulmonary Insufficiency Submitted to Intervention to Correct the Tetralogy of Fallot in Cardiovascular Simulator
Jesin Fonseca, PhD, Institute Dante Pazzanese of Cardiology, Sao Paulo, Brazil

247 Maximum Level of Mobility During Acute Mechanical Circulatory Support with Auxiliary Deployment of the Impella 5.0 is Associated with Improved Survival
Michele Esposito, MD, Tufts Medical Center, Boston, MA

248 Outcomes of Patients with Acute Decompensated Heart Failure and the Relationship to Diuretic Induced Weight Loss - Single Center Experience
Christopher Boyd, MD, Medical College of Wisconsin, Milwaukee, WI

249 Assessing Contraction Kinetics and Sarcomeric Protein Expression in Electrically Paced Engineered Heart Tissues
Vic Keschrumrus, PhD, University of Arizona, Tucson, AZ

250 "Strategy Formulation" for the Assessment of Power Loss in the Total Cavopulmonary Connection Zone
SanjeevDasraoMusikawad,MD,IndianInstituteofTechnology,Bombay,Mumbai,India

Pulmonary Posters

251 Lower Extremity Paralysis Related to Femoral Veno-arterial ECMO Support in Lung Transplant Candidates
Gabriela Dincheva, BS, University of California San Francisco, San Francisco, CA

252 Effects of Pulsatile Blood Flow on Oxygenator Performance
Niklas Steuer, MSc, RWTH Aachen, Aachen, NRW, Germany

Fares Alghanem, BS, University of Michigan, Ann Arbor, MI

254 Development of an Ultra Compact Durable ECMO System and Evaluation in a Chronic Animal Experiment for Over 2 Weeks
Nobumasa Katagгин,PhD,NationalCerebralandCardiovascularCenterResearchInstitute,Suita,Japan

255 Determining Optimal Thoracic Artificial Lung Aspect Ratio Using Computational Fluid Dynamics Modeling
Niyu Li, BS, Carnegie Mellon University, Pittsburgh, PA

256 Effects of Hollow Fiber Oscillation on Artificial Lungs
Ryan Orizondo, PhD, University of Pittsburgh, Pittsburgh, PA

257 The Advancing Front Model is Effective at Modeling Oxygen Transfer for Microchannel Artificial Lungs
Rei Ukita, BS, Carnegie Mellon University, Pittsburgh, PA

258 Successful Extra-corporeal Membrane Oxygenation (ECMO) in HIV-positive Patient
Mariam Abdelkader, MD, Wellspan - York Hospital, York, PA

259 Targeted FXII Inhibition for Localized Anticoagulation Effects in Artificial Lungs
Alida R. Cooke, BS, Carnegie Mellon University, Pittsburgh, PA

Saturday, June 24

8:00am-5:00pm  ADULT ECMO COURSE
Course Director: Aly El Banayosy, MD, INTEGRIS Baptist Med Ctr, Oklahoma City, OK

8:00am-8:10am  Welcome
Aly El Banayosy, MD, INTEGRIS Baptist Med Ctr, Oklahoma City, OK

8:10am-10:00am  SESSION I

8:10am-8:30am  ELSO Report
Jonathan Haft, MD, University of Michigan, Ann Arbor, MI

8:30am-8:50am  Hemocompatibility of Short-Term Support Devices
James Long, MD, PhD, INTEGRIS Baptist Medical Ctr, Oklahoma City, OK

8:50am-9:10am  Biomaterials and Inflammatory Response in Adult ECMO Patients
Marvin Slepian, MD, University of Arizona, Tucson, AZ

9:10am-9:40am  What Is in the Pipeline?
Martin Strueber, MD, Newark Beth Israel Medical Ctr, Newark, NJ

9:40am-10:00am  Panel Discussion

10:00am-10:15am  Break

10:15am-12:00pm  SESSION II
<table>
<thead>
<tr>
<th>Time</th>
<th>Session/Topic</th>
<th>Speaker/Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:15am-10:35am</td>
<td>Approaching Cardiogenic Shock Patients Beyond Medical Management: Which Way to Go?</td>
<td>Aly El Banayosy, MD, INTEGRIS Baptist Medical Ctr, Oklahoma City, OK</td>
</tr>
<tr>
<td>10:35am-10:55am</td>
<td>Impact of New Technology on Complications Profile</td>
<td>Christian Bermudez, MD, Hospital of the University of Pennsylvania, Philadelphia, PA</td>
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<tr>
<td>10:55am-11:15am</td>
<td>Data from Oklahoma ECMO Network Model</td>
<td>Karl Nelson, RN, MBA, INTEGRIS Baptist Medical Ctr, Oklahoma City, OK</td>
</tr>
<tr>
<td>11:15am-11:35am</td>
<td>Transition from ECMO to Durable MCS Devices: Criteria and Long-Term Results</td>
<td>Behzad Soleimani, Penn State Hershey Medical Ctr, Hershey, PA</td>
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<tr>
<td>11:35am-12:00pm</td>
<td>Panel Discussion</td>
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<tr>
<td>12:00pm-1:10pm</td>
<td>Lunch Break</td>
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<tr>
<td>1:10pm-2:45pm</td>
<td><strong>SESSION III</strong></td>
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<tr>
<td>1:10pm-1:30pm</td>
<td>Quality Measures for ECMO Programs</td>
<td>Jonathan Haft, MD, University of Michigan, Ann Arbor, MI</td>
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<tr>
<td>1:30pm-1:50pm</td>
<td>Difficult Cannulation: Tips and Tricks</td>
<td>Alireza Ghodisizad, MD, PhD, University of Miami, Miami, FL</td>
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<tr>
<td>1:50pm-2:10pm</td>
<td>rECMO: Programming Challenge and Clinical Results</td>
<td>Christoph Brehm, MD, Penn State Hershey Medical Ctr, Hershey, PA</td>
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<tr>
<td>2:10pm-2:30pm</td>
<td>ECMO Beyond Your Imagination</td>
<td>Michael Koerner, MD, PhD, INTEGRIS Baptist Medical Ctr, Oklahoma City, OK</td>
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<tr>
<td>2:30pm-2:45pm</td>
<td>Panel Discussion</td>
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<td>2:45pm-3:00pm</td>
<td>Break</td>
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<tr>
<td>3:00pm-5:00pm</td>
<td><strong>SESSION IV</strong></td>
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<tr>
<td>3:00pm-3:20pm</td>
<td>ARDS: Lessons Learned from Recent Trials</td>
<td>James Blum, MD, FCCM, Emory Healthcare/VA, Atlanta, GA</td>
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<tr>
<td>3:20pm-3:40pm</td>
<td>VV ECMO in ARDS Patients: Excellent Outcomes</td>
<td>Christoph Brehm, MD, Penn State Hershey Medical Ctr, Hershey, PA</td>
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<tr>
<td>3:40pm-4:00pm</td>
<td>Prone vs VV ECMO Trial in ARDS Patients: Are We There Yet?</td>
<td>Jacob Gutsche, MD, University of Pennsylvania, Philadelphia, PA</td>
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<tr>
<td>4:00pm-4:20pm</td>
<td>Screening and Infection Management in Adult ECMO Patients</td>
<td>Allison Nazinitsky, MD, INTEGRIS Baptist Medical Ctr, Oklahoma City, OK</td>
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<td>4:20pm-4:40pm</td>
<td>Role of ECMO in Organ Donation</td>
<td>Christopher Wigfield, Advocate Christ Medical Ctr, Chicago, IL</td>
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<td>4:40pm-4:55pm</td>
<td>Panel Discussion</td>
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<td>4:55pm-5:00pm</td>
<td>Closing Remarks</td>
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<tr>
<td>8:30am-10:00am</td>
<td><strong>MEDICAL DEVICE ENTREPRENEUR’S FORUM</strong></td>
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<td>8:30am-9:00am</td>
<td>Mayalife</td>
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<td>9:00am-9:30am</td>
<td>Lamprey</td>
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<td>9:30am-10:00am</td>
<td>DoseDial</td>
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<tr>
<td>8:30am-10:00am</td>
<td><strong>CARDIAC 5-Debate-VADS: Finances, Cost of Therapy, and VADs</strong></td>
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<td>8:30am-8:50am</td>
<td>Pro: VADs Is a Cost-Effective Therapy</td>
<td>Andrew Sauer, MD, University of Kansas Hospital, Kansas City, KS</td>
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<td>8:50am-9:10am</td>
<td>Con: Our Community May Have to Limit VAD Therapy</td>
<td>Keith Aaronson, MD, University of Michigan, Ann Arbor, MI</td>
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<tr>
<td>9:15am-10:00am</td>
<td>Cardiac Abstracts</td>
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9:15am-9:30am Outcomes in Patients with Surgical Closure of Left Ventricular Outflow Tract After Continuous Flow Left Ventricular Assist Device Implantation
Chitaru Kurrihara, MD, Baylor College of Medicine, Houston, TX

9:30am-9:45am Center Variability in Pediatric VAD Discharge: How Do We Learn from Each Other?
Amanda Schubert, BSN, RN, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH

9:45am-10:00am Left Ventricular Assist Devices; How Do We Define Success?
Anwer Lucman, MD, Mayo Clinic, Rochester, MN

8:30am-10:00am BIOENGINEERING 5 - Abstracts
Co-Chairs:
Heinrich Schima, PhD, Medical University of Vienna, Vienna, Austria
Amy Throckmorton, PhD, Drexel University, Philadelphia, PA

8:30am-8:45am Contribution of Computational Model for Heart Tissue Local Stress Caused by Suture in VAD Implantation
Antoine Chalon, Université de Lorraine, Nancy, France

8:45am-9:00am Material Hemocompatibility Testing for Improved Blood-contacting Device Design
Trevor Snyder, PhD, VADovations, Oklahoma City, OK

9:00am-9:15am In vitro Investigation on the Effect of Aortic Compliance Changes to Flow Patterns and Hemodynamics with PIV
Martin Buesen, BS, Cardiovascular Engineering, Aachen, Germany

9:15am-9:30am Optimization of a Small Scale, PDMS Microfluidic Artificial Lung
Lindsay Ma, VA Ann Arbor Healthcare System, Ann Arbor, MI

9:30am-9:45am In vitro Blood Flow Loop System for Evaluating the Thrombogenicity of Medical Devices and Biomaterials
Megan Jamiołkowski, PhD, FDA, Silver Spring, MD

9:45am-10:00am Surface-engineered Small Intestinal Submucosa for New Regenerative Vascular Grafts
Karen Valencia Rivero, MSc, Universidad de los Andes, Bogotá, DC

8:30am-10:00am PULMONARY 5
Chair: Dongfang Wang, MD, PhD, University of Kentucky, Lexington, KY

8:30am-8:45am Lung Scaffolding/Printing
Bryan Whitson, MD, PhD, Ohio State University, Columbus, OH

8:45am-9:00am Liquid Ventilation
Ron Hirschl, MD, CS Mott Children’s Hospital, Ann Arbor, MI

9:00am-9:15am Lung Stem Cell Transplantation
Don Hayes, Jr, MD, MS, Ohio State University, Columbus, OH

9:15am-9:30am Panel Discussion

9:30am-10:00am Pulmonary Abstracts

9:30am-9:45am Normothermic Donor Lung Preservation Using the Organ Care System Significantly Reduces Ischemia/Reperfusion Injury by Promoting Cytokine Antagonists
Bettina Wiegmann, MD, Hannover Medical School, Hannover, Lower Saxony, Germany

9:45am-10:00am Short Term in vivo Evaluation of Nitric Oxide Generating Artificial Lung in Sheep
Angela Loi, PhD Candidate, Carnegie Mellon University, Pittsburgh, PA

8:30am-10:00am RENAL 5- Patient Preferences: If Not Now When…?
Co-Chairs:
Gema Gonzalez, MS, FDA, Silver Spring, MD
Richard Knight, BS, MBA, American Association of Kidney Patients, Tampa, FL

8:30am-8:50am The Science of Measuring Patient Preferences
Anindita Saha, BS, FDA, Silver Spring, MD

8:50am-9:10am First Things First
Fokko Wieringa, PhD, imec, Eindhoven, Noord-Brabant, Netherlands

9:10am-9:30am Patient Driven Clinical Research
Lalita Subramanian, PhD, MPH, Arbor Research Collaborative, Ann Arbor, MI

9:30am-9:50am Patient Preferences as a Regulatory Tool
Carolyn Neuland, PhD, FDA, Silver Spring, MD

9:50am-10:00am Discussion

8:30am-10:00am PEDIATRIC 4 - Mechanical Support of Single Ventriles
Co-Chairs:
George Pantalos, PhD, University of Louisville, Louisville, KY
Chet Villa, MD, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH

8:30am-8:50am Failing Fontan Pump
Amy Throckmorton, PhD, Drexel University, Philadelphia, PA
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<tr>
<td>8:50am-9:10am</td>
<td>Improving Fontan Circulation</td>
<td>Richard Figliola, PhD, PE, Clemson University, Clemson, SC</td>
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<tr>
<td>9:10am-10:00am</td>
<td><strong>Pediatric Abstracts</strong></td>
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<tr>
<td>9:10am-9:22am</td>
<td>Use of Hemodynamic Ramp Test to Optimize Continuous-flow Assist Device in a Fontan Patient</td>
<td>Peter Chou, MD, University of Michigan, Ann Arbor, MI</td>
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<tr>
<td>9:22am-9:34am</td>
<td>Pediatric Ventricular Assist Device Therapy for End-staged Heart Failure: a Contemporary Ten Year Experience</td>
<td>Mahesh Sharma, MD, University of Pittsburgh Medical Center, Pittsburgh, PA</td>
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<tr>
<td>9:34am-9:46am</td>
<td>Design of a Percutaneous Axial-centrifugal Flow Pump for Failing Fontan Circulation</td>
<td>Dongfang Wong, MD, PhD, University of Kentucky College of Medicine, Lexington, KY</td>
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<tr>
<td>9:46am-9:58am</td>
<td>Fontan Simulation Using MCS Training Platform</td>
<td>Richard Smith, MSEE, CCE, Banner University Medical Center, Tucson, AZ</td>
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<tr>
<td>10:00am-10:45am</td>
<td><strong>Enjoy Refreshments</strong></td>
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<tr>
<td>10:45am-12:00pm</td>
<td><strong>Cardiac 6 - Debate - VADs: Total Artificial Heart (TAH), Continuous-Flow Biventricular Support or Heart Transplant</strong></td>
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<tr>
<td>10:45am-11:05am</td>
<td>Pro: Durable Mechanical Circulatory Support Should Be Favored for Most Indications</td>
<td>Francisco Arabia, MD, Cedars-Sinai Medical Center, Los Angeles, CA</td>
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<tr>
<td>11:05am-11:25am</td>
<td>Con: Heart Transplantation Should Be the Primary Strategy for Most Indications</td>
<td>Randall Starling, MD, MPH, Cleveland Clinic, Cleveland, OH</td>
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<tr>
<td>11:25am-11:30am</td>
<td>Discussion</td>
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<td>11:30am-12:00pm</td>
<td><strong>Cardiac Abstracts</strong></td>
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<td>11:30am-11:45am</td>
<td>Development of a Model to Predict Central Venous Pressure in SynCardia 50cc TAH-t Patients</td>
<td>Katrina DeCook, MSBE, SynCardia Systems LLC, Tucson, AZ</td>
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<tr>
<td>11:45am-12:00pm</td>
<td>Prediction of Right Ventricular Failure in the Current Continuous-flow Left Ventricular Assist Device Era</td>
<td>Cristiano Amarelli, MD, Monaldi, Azienda dei Colli, Naples, Italy</td>
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<tr>
<td>10:45am-12:00pm</td>
<td><strong>BIOENGINEERING 6 - Abstracts</strong></td>
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<td>10:45am-11:00am</td>
<td>Downsizing of Bidirectional Self-expanding Arterial Cannula Designs</td>
<td>Saad Abdel-Sayed, PhD, Cardiovascular Research Center, Lausanne, Vaud, Switzerland</td>
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<tr>
<td>11:00am-11:15am</td>
<td>Development of a Miniaturized Heart Assist Device with Interchangeable Hydraulics of a Miniaturized Heart Assist Device with Interchangeable Hydraulics</td>
<td>J. Ryan Stanfield, PhD, VADovations, Oklahoma City, OK</td>
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<tr>
<td>11:15am-11:30am</td>
<td>Analysis of the Effect of Component Elements of Hemodynamic Shear Stress Profiles on Shear-mediated Platelet Activation in Cardiovascular Implantable Therapeutic Devices</td>
<td>Filippo Consolo, PhD, Università Vita Salute, Milano, Italy</td>
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<tr>
<td>11:30am-11:45am</td>
<td>Ex vivo Pathological Platform for Vascular Device Testing</td>
<td>Noemi Vanerio, Eindhoven, Netherlands</td>
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<tr>
<td>11:45am-12:00pm</td>
<td>Variable-length Trajectory Sequences and Field-oriented Control to Efficiently Produce Arbitrary Pulsatile Output on Mechanical Circulatory Support Pumps</td>
<td>Barry Kuban, BSEE, Cleveland Clinic, Cleveland, OH</td>
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<tr>
<td>10:45am-12:00pm</td>
<td><strong>PULMONARY 6: Mechanical Treatment of PH &amp; RV Failure:</strong> Impella, Tandem, Nova Lung</td>
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<tr>
<td>10:45am-11:05am</td>
<td>Impella</td>
<td>Navin Kapur, MD, Tufts Medical Ctr, Boston, MA</td>
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<tr>
<td>11:05am-11:25am</td>
<td>Tandem Heart and Extracorporeal Devices</td>
<td>Brian Whitson, MD, PhD, Ohio State University, Columbus, OH</td>
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<td>11:25am-11:45am</td>
<td>Nova Lung and Intra-thoracic Assist Devices</td>
<td>Christian Bermudez, MD, Hospital of the Univ of Pennsylvania, Philadelphia</td>
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<td>11:45am-12:00pm</td>
<td>Panel Discussion</td>
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<td>10:45am-12:00pm</td>
<td><strong>RENADEL 6 - Abstracts</strong></td>
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10:45am-11:00am  The Influence of Catheter Design on Convection-dominated Heparin Leakage
Alberto Aliseda, PhD, University of Washington, Seattle, WA

11:00am-11:15am  Centrifugal Separator for Implantable Artificial Kidney
Koki Ariyoshi, BS, University of Tokyo, Tokyo, Japan

11:15am-11:30am  Bioactive Supramolecular Polymer Materials for Renal Membrane Bioengineering
Ronald van Gaal, Eindhoven University of Technology, Eindhoven, Netherlands

11:30am-11:45am  Blood Foam in the Air Trap During Hemodialysis and Automatic Priming of FX-Dialyzers
Bernd Stegmayr, MD, PhD, Umea University of Sweden, Umea AC, Sweden

11:45am-12:00pm  Development of a Novel Cell-free and Concentrated Ascites Reinfusion Therapy (CART) Machine Which Can Be Easily Used in Safety
Toshiya Okahisa, MD, PhD, Institute of Health Biosciences, Tokushima, Japan

12:00pm - 1:00pm  IFAO SESSION
Co-Chairs:
Bernd Stegmayr, MD, PhD, Umea University, Umea, AC, Sweden
Marvin Slepian, MD, University of Arizona, Tucson, AZ

12:00pm-12:20pm  Biomedical Application of Decellularized Tissues
Akio Kishida, Tokyo, Japan - representing JSAO

12:20pm-12:40pm  Effectively Increasing Safety and Survival of VAD Patients
Heinrich Schima, PhD, Medical University of Vienna, Vienna, Austria - representing ESAO

12:40pm-1:00pm  Academia-Industry Collaboration for Medical Device Innovation Supported by Government Strategy in Japan
Yoshiyuki Taenaka, MD, PhD, National Cerebral & Cardiovascular Center, Suita, Osaka, Japan

8:00am - 3:00pm  ASAIO / ICCAC MCS Proficiency Verification Courses
Course Co-Chairs:
Dawn Christensen, MS, FNP-BC, Innovative Program Solutions, LLC, Pine Grove, PA
Thomas Schloeglhofer, BSc, Medical University of Vienna, Vienna, Austria

This is the second offering for this novel course. The overall objective of this course is to develop critical thinking skills in providers who care for the MCS population. It is designed to foster critical thinking skills of the novice through expert MCS clinician through highly interactive small group problem-based learning scenarios developed surrounding the patients with advanced CHF and LVAD support.

Invited Faculty Include
Carole Ballew, MSN, RN, University of Virginia, Charlottesville, VA
Peggy Blood, MSN, RN, University of Alabama, Birmingham, AL
Pamela Combs, PhD, RN, Advocate Christ Medical Center, Oak Lawn, IL
Lori Edwards, MSN, RN, INOVA Fairfax Hospital, Falls Church, VA
Stephanie Hopper, BSN, University of Alabama, Birmingham, AL
Jodie Lantz, MSN, RN, Childrens Health, Dallas, TX
Janelle McLean, RN, The Alfred Hospital, Melbourne, VIC, Australia
Karen Meehan, MSN, Advocate Christ Medical Center, Oak Lawn, IL
Heather Moody, APRN ACNP, University of Louisville, Louisville, KY
Amanda Schubert, BSN, RN, Cincinnati Children’s Hospital, Cincinnati, OH
Michael Sobieski, RN, CCP, University of Louisville Jewish Hospital, Louisville, KY
Maureen Thompson, RN, University of Minnesota, Minneapolis, MN
Eugene DePasquale, MD, Ronald Reagan UCLA Medical Center, Los Angeles, CA
Claudius Mahr, DO, University of Washington, Seattle, WA
Eugenij Potapov, PD, Dr. Med, German Heart Center Berlin, Berlin, Germany
Edwardo Rame, MD, University of Pennsylvania, Philadelphia, PA
Benjamin Sun, MD, Minneapolis Heart Institute, Minneapolis, MN
Jeffrey Teuteberg, MD, University of Pittsburgh Medical Ctr, Pittsburgh, PA
Nir Uriel, MD, MSc, University of Chicago, Chicago, IL
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<tr>
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<th>Room 3</th>
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<td>Introduction - Session Instructions</td>
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<td>0815</td>
<td>HVAD S1 Session 1</td>
<td>HeartMate II Session 1</td>
<td>Impella Session 1</td>
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Session Descriptions:
Each session is 20 minutes in length and will be repeated 14 times throughout the day (2 sessions per time slot repeated 7 times).

Session attendance is limited to 12 participants to encourage interaction and optimization of Problem Based Learning construct.

8 sessions will be in progress in each of the time slots throughout the day in four different rooms allowing for a maximum of 96 participants.

Additional rooms and scenarios will be added if number of registrants exceeds 96.

Scenario sessions will be run by Coordinator Faculty

Physician and Surgeon faculty are present at each scenario to foster discussion and provide feedback regarding participant’s treatment decisions throughout the scenarios.

Scenarios are designed using ACLS Megacode construct allowing the participants to manage the patient from Heart Failure diagnosis through end of pump support with multiple scenario outcome possibilities depending on the clinical decisions made during the scenario.

Scenario Topics**:

HVAD S1 – HVAD Scenario 1 – Waveform Interpretation and Thrombus Detection

HVAD S2 – HVAD Scenario 2 – Hemolysis and Bleeding Management

HeartMate II S1 – Controller Malfunction/Pump Failure Detection and Management

HeartMate II S2 – Thrombus Detection/ treatment

Impella – Pump Migration – Detection and Management

Centrimag – Pump optimization in RVAD configuration

EXCOR – Peds Scenario – Clot detection and Controller Replacement

Syncardia – Driver Exchange – detection and replacement, Air leak detection

**Scenario topics are tentative and subject to change.