



**ASAIO 64<sup>th</sup> Annual Conference**  
Washington, DC | June 13 – 16, 2018  
*Turning Ideas into Solutions through Innovation*  
The Washington Hilton  
April 24, 2018



**Wednesday, June 13**

8:30am-4:30pm **ASAIO 7<sup>th</sup> Annual Pediatric Medical Device Day**

**[Click here for more information](#)**

*Christina VanderPluym, MD, Boston Children's Hospital, Boston, MA*

*Angela Lorts, MD, Cincinnati Children's Hospital Medical Center, Cincinnati, OH*

*Iki Adachi, MD, Texas Children's Hospital, Houston, TX*



Dr. VanderPluym

8:30 – 8:35am | Introduction – Christina VanderPluym, MD

**8:35-10:05am | PEDIATRIC DAY 1 - FROM HEROIC TO STANDARD OF CARE: THE RISE OF AO IN CHILDREN**

*Co-Chairs: Richard Wampler, MD & Iki Adachi, MD*

**8:35-8:55am | The Industrial Revolution of Artificial Organs: Historical Perspective in Children**

*Kurt Dasse, PhD, Hbeat Medical, LLC, Cocoa, FL*

**9:00-9:20am | The Current Landscape of Pediatric Mechanical Circulatory Support**

*Robert Jaquiss, MD, UT Southwestern/Children's Health, Dallas, TX*

**9:25-9:45am | What is the Rate Limiting Step for the Future of Pediatric Artificial Organs?**

*Peter Wearden, MD, PhD, Nemours Children's Hospital, Orlando, FL*

**9:45-10:05am | From Micro to Macro – Advances in Artificial Cardiac Support**

*Antonio Amodeo, MD, Bambino Gesù Hospital, Rome, Italy*

**10:05-10:30am | Pediatric Refreshment Break**

**10:30am-12:00pm | PEDIATRIC DAY 2 - THE "COMPLICATION CASCADE" – NOVEL APPROACHES TO OVERCOMING FREQUENT ADVERSE EVENTS RELATED TO ARTIFICIAL SUPPORT: BLEEDING, THROMBOSIS, INFECTION**

*Co-Chairs: Angela Lorts, MD & Joshua Sparks, MD*

**10:30-10:50am | Bleeding**

*Bioengineering/Research Perspective: Trevor Snyder, PhD, VADovations Inc., Oklahoma City, OK*

*Clinician Perspective: David Sutcliffe, MD, Dallas Children's Hospital, Dallas, TX*

**10:50-11:10am | Thrombosis**

*Bioengineering/Research Perspective: Richard Wampler, MD, Oregon Health Sciences Univ, Loomis, CA*

*Clinician Perspective: Jennifer Conway, MD, Stollery Children's Hospital, Alberta, Canada*

**11:10-11:30am | Infection**

*Bioengineering/Research Perspective: Joshua Woolley, PhD, NuPulse CV, Raleigh, NC*

*Clinician Perspective: Scott Auerbach, MD, Colorado Children's Hospital, Aurora, CO*

**Pediatric Abstract Presentations**

**11:30am-11:40am | Hepatic Effects After Support on the Artificial Placenta**

*Jennifer McLeod, MD, University of Michigan, Ann Arbor, MI*

**11:40am-11:50am | Extended Support with Berlin Heart Can Be Achieved In Children with Low Rates of Significant Neurologic Events**

*W. Hampton Gray, MD, University of Southern California, Los Angeles, CA*

**11:50am-12:00pm | Berlin Heart Excor Thrombosis Behavior**

*Susan Shea, PhD, Georgia Institute of Technology, Atlanta, GA*

12:00-1:30pm | Lunch Break

1:30-2:30pm | PEDIATRIC DAY 3 - LESSONS FROM INNOVATORS, INDUSTRY AND EXECUTIVES

Co-Chairs: Eric Chen, MS & Mr. Robert Kroslowitz

1:30-1:45pm | OrthoPediatrics – Establishing and Sustaining a Pediatric Focused Medical Device Company

David Bailey, BS, Executive Vice President, OrthoPediatrics, Warsaw, IN

1:45-2:00pm | Physiologic Support for Extreme Prematurity via Pumpless Extracorporeal Technology

Marcus Davey, MD, PhD, Children's Hospital of Philadelphia, Philadelphia, PA

2:00-2:30pm | Innovators Forum – Show Us Your Best

2:00-2:10pm | Soft Robotic VAD with Septal Bracing

Nikolay Vasilyev, MD, Boston Children's Hospital, Boston, MA

2:10-2:20pm | Current State of the Penn State Infant VAD

Branka Lukic, MS, Penn State College of Medicine, Hershey, PA

2:30-3:00pm | Pediatric Refreshment Break

3:00-4:30pm | PEDIATRIC DAY 4 - NOVEL USE OF DEVICES AND DATA

Co-Chairs: Francis Fynn-Thompson, MD & Christopher Almond, MD, MPH

3:00-3:15pm | Cardiomechs: A Game Changer in Management of Heart Failure

Maya Guglin, MD, PhD, University of Kentucky, Lexington, KY

3:15 -3:30pm | Application of Ultrafiltration in Children

David Kwiatkowski, MD, Lucile Packard Children's Hospital, Stanford, CA

3:30-3:45pm | Use of Real World Data for Pediatric Medical Devices

FDA Representative to be determined

3:45-4:00pm | ACTION Network: Big Data for a Small Population

Angela Lorts, MD, MBA, Cincinnati Children's Medical Center, Cincinnati, OH

Pediatric Abstract Presentations

4:00-4:10pm | The Artificial Placenta: Echocardiographic Evaluation In A Premature Lamb Model

Matias Caceres Quinones, MD, University of Michigan, Ann Arbor, MI

4:10-4:20pm | Alternative Veno-Venous ECMO Cannulation Strategy on Children for Long-Term Ambulatory Support

Katsuhide Maeda, MD, PhD, Stanford University Medical Center, Stanford, CA

4:20-4:30pm | Direct Measurement of Neonatal Cardiac Output Utilizing the Costatus Monitor

Simranjeet Sran, MD, Children's National Health System, Washington DC

8:00am-5:00pm

**MCS/VAD University**

*Course Director: Pramod Bonde, MD, Yale University, New Haven, CT*

8:00-8:05am | Welcome – Pramod Bonde, MD



Dr. Bonde

8:05-10:00am | SESSION 1 – FROM A DRAWING ON A NAPKIN TO MARKET

Design, Development, Testing and Commercialization of a MCS Device

Steven Koenig, PhD, University of Louisville, Louisville, KY

Heinrich Schima, PhD, Medical University Vienna, Vienna, Austria

Tim Kaufmann, Prof. Dr., RWTH Aachen University, Aachen, Germany

Daniel Timms, PhD, BiVACOR, Cerritos, CA

Kevin Bourque, MSME, Abbott Burlington, MA

Jeffery LaRose, MSMB, RT Cardiac Systems Inc, Raleigh, NC

**10:00-11:00am | SESSION 2 – CLINICAL NEED AND DEMAND FOR MCS SUPPORT**

**Potential Patient Pool, Indications, Contraindications and Unserved Patient Population**

**Mark Slaughter, MD, University of Louisville, Louisville, KY**

**Jonathan Haft, MD, University of Michigan, Ann Arbor, MI**

**11:00am-12:00pm | SESSION 3 – HOW TO BUILD A SUCCESSFUL MCS PROGRAM**

**CMS, Joint Commission Guidelines and Rules, Staffing Needs and a Programmatic Aspects**

**Pramod Bonde, MD, Yale University, New Haven, CT**

**12:00-1:00pm | SESSION 4 – TECHNICAL ASPECTS OF MCS IMPLANTATION**

**Approaching a Crashing and Burning Patient**

**Jeffrey Morgan, MD, Baylor College of Medicine-St. Luke's Med Center, Houston, TX**

**Technique of a Durable LVAD Implant**

**Pramod Bonde, MD, Yale University, New Haven, CT**

**1:00-2:00pm | MOOK LOOP AND CFD MODELLING FOR MCS DEVICE CHALLENGE**

**2:00-3:00PM | SESSION 5 – TOTAL ARTIFICIAL HEART**

**Indications, Technique and Complications**

**Daniel Tang, MD, Virginia Commonwealth University Medical Center, Richmond, VA**

**Devices in the Pipeline**

**Daniel Timms, PhD, BiVACOR, Cerritos, CA**

**3:00-4:00pm | SESSION 6 – COMPLICATIONS AND SURVIVAL IN MCS THERAPY**

**A Physician's Perspective**

**William Holman, MD, University of Alabama, Birmingham, AL**

**A VAD Professional's Perspective**

**Pamela Combs, PhD, RN, The University of Chicago Biological Sciences, Chicago, IL**

**4:00-5:00pm | SESSION 7 – CONTROVERSIES IN MCS THERAPY**

**Pulse or No Pulse**

**Egemen Tuzun, MD, PhD, Texas A&M University, College Station, TX**

**Tethered or Totally Implantable**

**Pramod Bonde, MD, Yale University, New Haven, CT**

**Partial or Total Support**

**Tim Kaufmann, Prof. Dr., RWTH Aachen University, Aachen, Germany**

**Devices for Temporary Support**

**Jeffery LaRose, MSMB, RT Cardiac Systems Inc, Raleigh, NC**

**6:00-8:00pm**

**ICCAC 11<sup>th</sup> Annual Meeting**

***Chair: Peggy Blood, MSN, RN, University of Alabama, Birmingham, AL***

The international Consortium of Circulatory Clinicians (ICCAC) will be hosting their 11<sup>th</sup> Annual Meeting which includes time for networking with MCS colleagues, information about ICCAC, and educational resources that help positively impact the MCS team in order to enhance care of our MCS patients.

**7:45am-12:30pm | GENERAL SESSION 1**

*Co-Chairs: Jonathan Haft, MD, University of Michigan, Ann Arbor, MI*

*Joseph Zwischenberger, MD, University of Kentucky, Lexington, KY*

**7:45-8:00am | Introduction and Welcome**

**Joseph Zwischenberger, MD, Program Chairman ASAIO,  
University of Kentucky, Lexington, KY**

**8:00-9:15am | Top Abstract Presentations**

**8:00-8:10am | LVAD Patients with Chronic Kidney Disease: Are Two Organs  
Better Than One?**

**Megan Kamath, MD, UCLA, Los Angeles, CA**

**8:10-8:20am | A Risk-Informed Credibility Assessment Framework Applied to A Centrifugal Blood Pump**

**Tina Morrison, PhD, US Food and Drug Administration, Silver Spring, MD**

**8:20-8:30am | Current Status of the Penn State Infant VAD**

**Branka Lukic, MS, Penn State College of Medicine, Hershey, PA**

**8:30-8:40am | Acute In Vivo Performance of A Pediatric Ambulatory Artificial Lung**

**Alexandra May, BS, University of Pittsburgh, Pittsburgh, PA**

**8:40-8:50am | Combining Cation and Anion Exchange Sorbents to Remove Uremic Toxins**

**Stephen Ash, MD, HemoCleanse Technologies LLC, Lafayette, IN**

**8:50-9:00am | ECMO Transport in Rural Appalachia: Improving Access through a Nurse-Led Transport Team**

**Sherry Griggs, RN, University of Kentucky, Lexington, KY**

**9:00-9:15am | Discussion and Questions**

**9:15-9:45am | ASAIO President's Address**

**Jonathan Haft, MD, President ASAIO, University of Michigan, Ann Arbor, MI**



Dr. Haft



Dr. Zwischenberger

**9:45-10:30am | Posters – Exhibits – Enjoy Refreshments**

**10:30am-12:30pm | GENERAL SESSION 1 CONTINUED**

**10:30-11:15am | From the Kidney Health Initiative to Kidney-X: A Call to Action for Kidney Disease!**

**Prabir Roy-Chaudhury, MD, PhD, University of Arizona, Tucson, AZ**

**11:15am-12:30pm | Medical Device Entrepreneur's Forum**

*Panelists: H. David Humes, MD, University of Michigan, Ann Arbor, MI*

*Edward Berger, PhD, Larchmont Strategic Advisors, Chestnut Hill, MA*

*Eric Chen, MS, Food & Drug Administration, Silver Spring, MD*

**11:15-11:35pm | Handle**

**Lauren Dobias, MS, TheraNova LLC, San Francisco, CA**

**11:35-11:55pm | MAST**

**Landon Tompkins, Meng, University of Louisville, Louisville, KY**

**11:55-12:15pm | Exatherm: Whole Body Hyperthermia System for Cancer Treatment**

**Scott Merz, PhD, MC3 Cardiopulmonary Inc, Dexter, MI**

**12:30-1:30pm | Lunch Break**

**1:30-3:00pm | CARDIAC 1 – ACUTE HEART FAILURE – CARDIOGENIC SHOCK: PATIENT/DEVICE SELECTION**

*Co-Chairs: William Cotts, MD, MS & Jonathan Haft, MD*

**Cardiac Abstract Presentations**

**1:30-1:40pm | Cardiohepatic Syndrome Correlates With Mortality among Patients with Cardiogenic Shock Requiring Acute Mechanical Circulatory Support**

**Kevin Morine, MD, Tufts Medical Center, Boston, MA**

**1:40-1:50pm | Management of Cardiac Standstill on Va-Ecmo Using a High Flow Strategy**

**Nicholas Cavarocchi, MD, Thomas Jefferson University, Philadelphia, PA**

**1:50-2:00pm | Congestive Profiles Correlate With Clinical Outcomes among Patients Requiring Acute Mechanical Circulatory Support for Cardiogenic Shock**

**Kevin Morine, MD, Tufts Medical Center, Boston, MA**

**2:00-2:10pm | Acute Mechanical Unloading Prior to Reperfusion Is Cardioprotective and Limits the Development of Heart Failure after Myocardial Infarction**

**Michele Esposito, MD, Tufts Medical Center, Boston, MA**

**2:10-2:20pm | Clinical Outcomes among Patients Requiring Acute Mechanical Circulatory Support for Cardiogenic Shock Supported By Impella or VA-ECMO**

**Kevin Morine, MD, Tufts Medical Center, Boston, MA**

**2:20-2:30pm | Vasoactive Agent Exposure Prior to Acute Mechanical Circulatory Support for Cardiogenic Shock Is Associated With End Organ Dysfunction and Mortality**

**Kevin Morine, MD, Tufts Medical Center, Boston, MA**

**Invited Presentation**

**2:30-2:50pm | Tying it All Together: Choosing the Best Device**

**Navin Kapur, MD, Tufts Medical Center, Boston, MA**

**2:50-3:00pm | Discussion**

**1:30-3:00pm | BIOENGINEERING 1 – DESIGN, INNOVATION AND OPTIMIZATION**

*Co-Chairs: Choon-Sik Jhun, PhD & Amy Throckmorton, PhD*

**1:30-1:50pm | Improved Blood Pumps through Innovation and Optimization**

**Gerson Rosenberg, PhD, Penn State College of Medicine, Hershey, PA**

**Bioengineering Abstract Presentations**

**1:50-2:00pm | Modified Cavopulmonary Assist Device Implemented In the Inferior Vena Cava Can Improve Fontan Hemodynamics**

**Masoud Farahmand, Clemson University, Clemson, SC**

**2:00-2:10pm | Safety and Efficacy of a Long-Term Intravascular Ventricular Assist System (Ivas) In Animals**

**Sonna Patel-Raman, PhD, NuPulseCV, Apex, NC**

**2:10-2:20pm | VA ECMO Restores Systemic Circulation Insevere Cardiogenic Shock But Exacerbates LV Distension: A Numerical Simulation Study**

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

**2:20-2:30pm | Preclinical Surgical Experience with an Intravascular Hemofilter for Organ Replacement Therapy**

**Jarrett Moyer, MD, University of California, San Francisco, San Francisco, CA**

**2:30-2:40pm | Inventive Knowledge Flow: Tracking the Progress of Biomedical Innovation**

**Michael DiCaro, BS, University of Arizona, Tucson, AZ**

**2:40-2:50pm | Challenges In Design Scaling: Using A Computational Toolbox for Scaling A Positive Displacement Device**

**Jeffrey Gohean, MSME, Windmill Cardiovascular Systems Inc, Austin, TX**

**2:50-3:00pm | Design and Electromagnetic Simulation of A Novel Stacked Motor for the Cleveland Clinic Continuous-Flow Total Artificial Heart**

**Barry Kuman, BSEE, Cleveland Clinic, Cleveland, OH**

**1:30-3:00pm | PULMONARY 1 – ADVANCES IN LUNG TRANSPLANT**

*Co-Chairs: Hari Mallidi, MD & Jeffrey Javidfar, MD*

**1:30-1:45pm | Contemporary Surgical Therapies for Lung Failure**

**Mani Daneshmand, MD, Duke University, Durham, NC**

**1:45-1:50pm | Discussion and Questions**

**1:50-2:05pm | Prevention of White Lung in VA ECMO**

**Ping Li, MD, Wuhan Union Hospital, Wuhan, China**

**2:05-2:10 | Discussion and Questions**

**2:10-2:25pm | Refractory Respiratory Failure on ECMO: A Growing Indication for Lung Transplantation in Children**

**Don Hayes, MD, MS, NationWide Children's Hospital**

**2:25-2:30 | Discussion and Questions**

**Pulmonary Abstract Presentations**

**2:30-2:40pm | Successful 30-Day Sheep Studies of a Wearable Pumping Artificial Lung**

**Ryan Orizondo, PhD, BS, University of Pittsburgh, Pittsburgh, PA2**

**2:40-2:50pm | An Advanced Lumped Parameter Model for the Simulation of ECMO Therapy**

**Kristen Hugenroth, RWTH Aachen University, Aachen, Germany**

**2:50-3:00pm | Technical Indicators to Evaluate the Degree of Large Clot Formation inside the Membrane Fiber Bundle of an Artificial Lung in an In Vitro Setup**

**Andreas Kaesler, Dipl.-Ing, RWTH University Aachen, Aachen, Germany**

**1:30-3:00pm | RENAL 1 – KIDNEY HEALTH INITIATIVE UPDATE**

*Co-Chairs: Alexander Yevzlin, MD & Matthew McGuire, MD*

**Renal Abstract Presentation**

**1:30-1:40pm | Developments within KHI from the European Side**

**Fokko Wieringa, PhD, IMEC, Eindhoven, Netherlands 2:50-3:00pm | Kidney Health Initiative – Defining**

**Invited Presentations**

**1:40-2:20pm | The Purpose and Mission**

**Melissa West, Kidney Health Initiative, Washington DC**

**2:20-3:00pm | FDA Perspective**

**Murray Sheldon, MD, FDA, Silver Spring, MD**

**1:30-3:00pm | NURSING ABSTRACTS**

*Co-Chairs: Pamela Combs, PhD, RN & Jesus Casida, PhD, RN, APN-C*

**1:30-1:40pm | Driveline Infections Following Left Ventricular Assist Device Implantation: Differences between Three Contemporary Device Types**

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

**1:40-1:50pm | Impact of Substance Abuse on Left Ventricular Assist Device Outcomes**

**Heather Moody, APRN, ACNP, University of Louisville, Louisville, KY**

**1:50-2:00pm | The Safety And Efficacy of Vitamin K Administration In Left Ventricular Assist Device Supported Patients With Elevated INR Levels**

**Erin Davis, RN, BSN, University of Utah Hospital, Salt Lake City, UT**

**2:00-2:10pm | A National Study of Bedside Nurse VAD Competencies**

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

**2:10-2:20pm | Sleep Quality and Daytime Function among Adults Implanted With Long-Term Left-Ventricular Assist Devices (LVADS)**

**Zachary Chornoby, BS, University of Michigan, Ann Arbor, MI**

**2:20-2:30pm | Correlates of Caregiving Characteristics in Left Ventricular Assist Devices**

**Jingzhi Xu, PhD Candidate, Johns Hopkins University, Jersey City, NJ**

**Thursday, June 14 - Continued**

**Nursing Abstracts Continued**

**2:30-2:40pm | Depression Is Associated With Poor Sleep Quality and Daytime Sleepiness in Advanced Heart Failure Patients Implanted With Left Ventricular Assist Devices (LVADS)**

**Jonah Kazmierski, BS, University of Michigan, Ann Arbor, MI**

**2:40-2:50pm | Surgical and Nursing Management in the Care of Patients Post LVAD Implant without the Use of Blood Products**

**Colleen LaBuhn, RN, University of Chicago Medical Center, Chicago, IL**

**2:50-3:00pm | Women and Mechanical Circulatory Support: A Large Volume, Single Center Experience**

**Karen Meehan, MSN, Advocate Christ Medical Center, Oak Lawn, IL**

**3:00-3:45pm | Posters – Exhibits – Enjoy Refreshments**

**3:45-5:00pm | CARDIAC 2 – RISE OF THE MACHINES: ETHICAL ISSUES, DIFFICULT DECISIONS AND RESOURCE UTILIZATION IN MCS THERAPY**

*Co-Chairs: Jacob Strand, MD & Jennifer Beckman, MSN, ARNP, FNP*

**Cardiac Abstract Presentations**

**3:45-3:55pm | Psychosocial Characteristics of Patients Selected for Left Ventricular Assist Device Implantation**

**Alexander Rodriguez, BS, Northwestern University, Chicago, IL**

**3:55-4:05pm | The Effectiveness of Cardiac Rehabilitation in Patients with Left Ventricular Assist Devices (LVADS): A Systematic Review And Meta-Analysis**

**Sek Chair, PhD, The Chinese University of Hong Kong, Hong Kong, China**

**4:05-4:15pm | Should a History of Illicit Drug Use Be an Absolute Contraindication for LVAD Implantation?**

**Felixnando Rubio, BS, Baylor College of Medicine at Texas Heart Inst, Houston, TX**

**4:15-4:25pm | Major Orthopedic Surgical Intervention Post Left Ventricular Assist Device (LVAD) Implantation: A 10 Year Single Center Review**

**Sarah Schettle, PA-C, Mayo Clinic, Rochester, MN**

**Invited Presentation**

**4:30-4:50pm | To VAD or NOT to VAD: Defining a Global Perspective**

**Simon Maltais, MD, PhD, Mayo Clinic, Rochester, MN**

**4:50-5:00pm | Discussion**

**3:45-5:00pm | BIOENGINEERING 2 – HEMOLYSIS AND THROMBOSIS**

*Co-Chairs: Brent Craven, PhD & Heinrich Schima, PhD*

**3:45-4:05pm | Developing a Material-Sensitive Computational Thrombosis Model**

**Keefe Manning, PhD, The Pennsylvania State University, University Park, PA**

**4:05-4:25pm | Subclinical Hemolysis Contributes to LVAD Thrombosis**

**Carlo Bartoli, MD, PhD, University of Pennsylvania, Philadelphia, PA**

**4:25-4:45pm | Reevaluating Scale Parameters for Continuum-based Hemolysis Prediction**

**Keith Sharp, PhD, University of Louisville, Louisville, KY**

**Bioengineering Abstract Presentation**

**4:45-4:55pm | Platelet Membrane Fluidity: A Mechanistic Component of Shear-Mediated Platelet Activation**

**Alice Sweedo, University of Arizona, Tucson, AZ**

**3:45-5:00pm | VAD 1 – LESSONS FROM THE WIZARD OF OZ!**

*Co-Chairs: Dawn Christensen, MS, FNP-BC & Erin Davis, BSN, RN*

**3:45-4:05pm | The Scarecrow & The Lion: Courage to Think and Act – Ideas and Tools to Improve Team Efficiency and honor the VAD Coordinator Role**

**Nancy Richards, MSN, RN, University of Kansas Health System, Kansas City, KS**

**4:05-4:35pm | The Tin Man: “I Know I’ve Got a Heart Because it is Breaking” – What Can Be Done When the Right Side Goes Down?**

**Sarah Schettler, PA-C, Mayo Clinic, Rochester, MN**

**4:35-5:00pm | The Wicked Witch: “I’ll Get You My Pretty, and Your Little Dog Too!” – Emergency Plans & Preparation for a Natural Disaster**

**Brigitte Marciniak-Bednar, BSN, Jackson Memorial Hospital, Miami, FL**

**Beth Hawkins, RN, MSN, FNP-C, Boston Children’s Hospital, Boston, MA**

**Krista Marz, RN, CCRN, Ochsner Medical Center, New Orleans, LA**

**3:45-5:00pm | PULMONARY 2 – THE VALUE OF PULMONARY EXTRACORPOREAL SUPPORT**

*Co-Chairs: James Blum, MD & Jonathan Haft, MD*

**3:45-4:00pm | ECLS Fiscal Considerations, Outcomes and Reimbursements**

**Simon Maltais, MD, PhD, Mayo Clinic, PhD, Rochester, NY**

**4:00-4:05pm | Discussion & Questions**

**4:05-4:20pm | ECLS – What are the Real Costs and How Do We Optimize These?**

**Michael Nurok, MBChB, PhD, Cedars-Sinai, Los Angeles, CA**

**4:20-4:25pm | Discussion & Questions**

**Pulmonary Abstract Presentations**

**4:25-4:35pm | A New Model for Developing An Ex Vivo Lung Perfusion Program**

**Frans van Wagenberg, MD, UT Southwestern Medical Center, Dallas, TX**

**4:35-4:45pm | In Vitro Evaluation of Hemocompatibility of MPC Coating for Membrane Oxygenator Application**

**Seongmi Song, MD, Asan Medical Center, Seoul, South Korea**

**4:45-5:00pm | Discussion & Questions**

**3:45-5:00pm | RENAL 2 – TRADITIONAL TECHNOLOGY APPLIED IN NOVEL WAYS**

*Co-Chairs: Alexander Yevzlin, MD & Matthew McGuire, MD*

**3:45-4:10pm | Citrate Anticoagulation Innovation**

**Balazs Szamosfalvi, MD, University of Michigan, Ann Arbor, MI**

**4:10-4:35pm | Acute PD for CHF**

**Lenar Yessayan, MD, University of Michigan, Ann Arbor, MI**

**4:35-5:00pm | Selective Cytopheretic Device**

**H. David Humes, MD, University of Michigan, Ann Arbor, MI**

**3:45-5:00pm | PEDIATRIC 1 – THE GOOD, THE BAD, AND THE UGLY: WHEN ALL ORGANS FAIL, WHAT DO WE DO?**

*Co-Chairs: David Peng, MD & Damien Lepar, MD*

**3:45-4:00pm | Case Presentation 1**

**Steven Kendel, MD, Children’s Hospital of Wisconsin, Milwaukee, WI**

**4:00-4:15pm | Case Presentation 2**

**Joshua Sparks, MD, University of Louisville, Louisville, KY**

**4:15-4:30pm | Case Presentation 3**

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

**4:30-4:45pm | Case Presentation 4**

**Sabrina Law, MD, Columbia University, New York, NY**

**4:45-5:00pm | Case Presentation 5**

**Lindsay May, University of Utah, Salt Lake City, UT**

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

Cardiac Posters

Echocardiographic Estimates of Right Heart Pressures Fail to Approximate Invasive Hemodynamics in Continuous Flow VAD Patients

[Song Li, MD, University of Washington, Seattle, WA](#)

Ambulatory Power-Tracking Algorithm for HVAD May Facilitate Prevention of Adverse Events

[Abhijit Kadrolkar, PhD, Medtronic, Mounds View, MN](#)

Computed Tomographic Imaging Is Comparable to Chest X-Ray in Determining Left Ventricular Assist Device Angulation

[Luke Cunningham, MD, Baylor University Medical Center, Dallas, TX](#)

"In The Field" Resuscitative Circulatory Device for First Responders for Out of Hospital Cardiac Arrest: Strategies for Rapid Hypothermia Induction

[Pramod Bonde, MD, Yale University, New Haven, CT](#)

Patients of All Body Mass Index Classifications Gain Weight after First LVAD Implant

[D'Anne Kudlik, MS, Medtronic, Mounds View, MN](#)

Ischemic Mitral Regurgitation: Insights from Robotic Papillary Muscle Construct Using Computational Mechanics

[Pramod Bonde, MD, Yale University, New Haven, CT](#)

Comparison of Hemodynamic and Microcirculatory Assessment in Cardiopulmonary Bypass: Pulsatile- vs Centrifugal-Flow Pumps

[Takuma Miyamoto, MD, PhD, Cleveland Clinic, Beachwood, OH](#)

Update: Progress in the Development of an Advanced Ventricular Assist Device with Pulse Augmentation and Regurgitant Flow Shutoff

[Nicole Byram, BS, ChE, Cleveland Clinic, Cleveland, OH](#)

Accuracy of Postoperative Risk Scores on Survival Prediction in Cf-LVAD Recipients

[Faisal Cheema, MD, Baylor College of Medicine at Texas Heart Institute, Houston, TX](#)

Evidence for Pulsatile Inertance as a Cause of Outflow Conduit Pressure Loss in the Heartware HVAD

[Christopher Hayward, MD, St Vincent's Hospital, Darlingurst, Australia](#)

Predictors and Outcomes of Renal Replacement Therapy after Left Ventricular Assist Device Implantation

[Rabea Asleh, MD, Mayo Clinic, Rochester, MN](#)

Changes in Functional Status and Quality of Life Measures in Ventricular Assist Device Patients Implanted with a Cardiomems™ Device

[Jennifer Nowaczyk, Scripps Health, La Jolla, CA](#)

Unexplained Syncope in Patients with Left Ventricular Assist Devices (LVAD)

[Bibin Varghese, BS, Baylor College of Medicine at Texas Heart Institute, Houston, TX](#)

In Vivo Evaluation of a Novel Intra-Atrial Blood Pump for Partial Support of the Left Ventricle

[Yaxin Wang, PhD, Texas Heart Institute, Houston, TX](#)

Comparison of Device Exchange and Non-Exchange Management of Continuous-Flow Left Ventricular Assist Device-Specific Infections: A Systematic Review and Meta-Analysis

[Tyler Bauer, BS, Thomas Jefferson University, Philadelphia, PA](#)

Functional Prototype for Pulsed Rotary Displacement Pump: Thetaegek Pump

[Jiheum Park, PhD, Yale University, New Haven, CT](#)

Corwave Neptune LVAD: Timing of Synchronized Pulsatility to Create Maximum Pulse Pressure

[Carl Botterbusch, BSME, MBA, Corwave SAS, Paris, France](#)

Development of Mock Circulatory Loops to Assess VAD Performance

[Luke Herbertson, PhD, US Food and Drug Administration, Silver Spring, MD](#)

Hydraulic Pressure Analysis for Soft Robotic Bi-Ventricular Copulsation Sleeve

[Jooli Han, Carnegie Mellon University, Pittsburgh, PA](#)

**Novel Vascular Access Device for Minimally Invasive Delivery of a Counterpulsation Device through Subclavian Artery**

[Robert Smith, PhD, Nupulse CV, Raleigh, NC](#)

**Improved Nutritional Status in Patients with Advanced Heart Failure Following Left Ventricular Assist Device Implantation**

[Geetha Bhat, MD, PhD, Advocate Christ Medical Center, Oak Lawn, IL](#)

**Neutrophil to Lymphocyte Ratio as a Predictor of Mortality after Continuous Flow Left Ventricular Assist Device Implantation**

[Harveen Lamba, MD, Baylor College of Medicine at Texas Heart Institute, Houston, TX](#)

**Management and Outcomes of Left Ventricular Assist Device Related Endocarditis: A Systematic Review and Meta-Analysis**

[Jae Hwan Choi, MD, Thomas Jefferson University, Philadelphia, PA](#)

**Aortic Spiral Flow Dynamics: The Impact of Mechanical Circulatory Support Devices**

[Pablo Huang Zhang, Drexel University College of Medicine, Philadelphia, PA](#)

**Enrich To Recovery: Use of Sacubitril/Valsartan in Patients with Left Ventricular Assist Devices**

[Nathan Nowalk, MD, Baylor College of Medicine at Texas Heart Institute, Houston, TX](#)

**A Co-Rhythmic, Isolable, Self-Maintenance, Assist (Corisma) Device: An Innovative Option for Class Iii Heart Failure Patients**

[Pramod Bonde, MD, Yale University, New Haven, CT](#)

**Percutaneous Right Ventricular Support: Initial Experience from the Tandemheart Experiences and Methods (Theme) Registry**

[Christian Bermudez, MD, Hospital of the University of Pennsylvania, Philadelphia, PA](#)

**Model of End-Stage Liver Disease Score as A Predictor for Outcomes Following Left Ventricular Assist Device Implantation**

[Kevin Ting, MD, Baylor College of Medicine at Texas Heart Institute, Houston, TX](#)

**Development of a Foldable, Self-Assembling, Structural Brace for a Soft Robotic Ventricular Assist Device: A Design Strategy for Minimally Invasive Implantation**

[Lucy Hu, BS, Massachusetts Institute of Technology, Cambridge, MA](#)

**Ultrasound**

[Seraina Dual, ETH Zürich, Zürich, Switzerland](#)

**In Vivo Evaluation of a Novel Centrifugal LVAD in A Bovine Model of Short-Term Duration**

[Yaxin Wang, PhD, Texas Heart Institute, Houston, TX](#)

**Controlling an LVAD Wireless Power System for Temperature Studies**

[Lori Lucke, PhD, Minnetronix, Saint Paul, MN](#)

**Biochemical Characterization of Ex Vivo Hemoperfused Hearts**

[Benjamin Kappler, LifeTec Group B.V., Eindhoven, Netherlands](#)

**Higher Pulsatility Index at the Time of Pump Implant Is Associated With Improved Hemodynamics and Reduced Morbidity in 1 Year Follow-Up**

[Jacob Schaefer, Mayo Clinic, Rochester, MN](#)

**Pattern of Preoperative Echocardiographic Findings Determines Outcomes after Left Ventricular Assist Device Implantation**

[Paul Tang, MD, PhD, University of Michigan Frankel Cardiovascular Ctr, Ann Arbor, MI](#)

**MELD-Xi Score and Outcomes in Adults Supported With Short Term Continuous Flow Ventricular Assist Devices**

[Sabin Bozso, MD, University of Alberta, Edmonton, Canada](#)

**An Exploratory Study of Adhesion Strategies for Epicardial Cardiac Assist Devices**

[Molly Kaissar, Carnegie Mellon University, Pittsburgh, PA](#)

**Intraventricular Lvad Pump Position and Pump Thrombosis**

[Thomas Schlöglhofer, BSc, Medical University of Vienna, Vienna, Austria](#)

## Bioengineering Posters

**Bedside Nurses Perceived Challenges of VAD Patient Care: A Qualitative Analysis**

[Pamela Combs, PhD, RN, The University of Chicago Biological Sciences, Chicago, IL](#)

**Minor Geometric Details Significantly Affect Hemodynamics And Hemocompatibility Of A Miniature Ventricular Assist Device: A Cfd Study**

[Zhongjun Wu, PhD, University of Maryland School of Medicine, Baltimore, MD](#)

**Static Cold Storage versus Dynamic Hypothermic Ex-Situ Perfusion on Rat Hind Limb Allografts**

[Emre Gok, MD, University of Michigan, Ann Arbor, MI](#)

**Clinical Efficacy of Subcutaneous Ecg Sensing For Long-Term Counterpulsation**

[Ryan McCormick, PhD, NuPulseCV, Raleigh, NC](#)

**Artificial Thrombi for In Vitro Ventricular Assist Device Testing**

[Jana Gigliotti, Texas A&M University, College Station, TX](#)

**Comparison of Newtonian and Viscoelastic Blood Models In The FDA Benchmark Centrifugal Pump**

[Bryan Good, PhD, The Pennsylvania State University, University Park, PA](#)

**Comparison of Two Arterial Cannulae for Cardiopulmonary Bypass Using Computational Fluid Dynamics**

[Gionata Fragomeni, PhD, Magna Graecia University – Catanzaro, Catanzaro, Italy](#)

**A Protocol for Automated Adaptive Discretization of Complex Geometry**

[Akash Gupta, BS, Clemson University, Clemson, SC](#)

**Predicting Plasma Free Hemoglobin Levels in Patients Due To Medical Device Hemolysis**

[Richard Malinauskas, PhD, Food and Drug Administration, Silver Spring, MD](#)

**Surface-Engineering of Small Intestinal Submucosa via Carboxylic Acids for New Regenerative Vascular Grafts**

[Karen Valencia Rivero, MSc, Universidad de los Andes, Bogota, DC, Colombia](#)

**Inventive Knowledge Flow: Tracking the Progress of Biomedical Innovation**

[Michael DiCaro, BS, University of Arizona, Tucson, AZ](#)

**In Vitro Hemolysis Evaluation of CH-VAD, an Ultra-Compact Fully Magnetically Suspended Left Ventricular Assist Device**

[Liudi Zhang, PhD, Soochow University, Jiangsu, China](#)

**Numerical Simulation for Thrombosis under Non-Newtonian, Pulsatile Blood Flow**

[Ling Yang, BS, The Pennsylvania State University, University Park, PA](#)

**High Hydrostatic Pressure (Hhp) Engineering-Based Acellular Scaffolds for Airway Reconstruction in Porcine Model**

[Tetsuji Yamaoka, PhD, National Cerebral and Cardiovascular Center Research Institute, Japan](#)

**Blood Pump Rotor Eccentricity and Hemolysis Evaluation**

[Zhongwei Qi, MS, Abiomed Inc., Danvers, MA](#)

**A Surrogate Modeling Approach to Predict Device-Specific Hemolysis Power Law Coefficients in Blood-Contacting Medical Devices**

[Brent Craven, PhD, US Food and Drug Administration, Silver Spring, MD](#)

**Virtual Reality in Medical Education: Responses to Innovative Learning Methods**

[Michael DiCaro, BS, University of Arizona, Tucson, AZ](#)

**How Well Understood Is The Mechanism of Plasma-Free Hemoglobin Mediated Vasoconstriction?**

[Jan Stanley Simoni, DVM, PhD, TX HemoBio Therapeutics & Bioinnovation Ctr, Lubbock, TX](#)

**"Digital Reflexes": Quantitation and Signatures of Superficial Reflexes via Stretchable Electronic Wearable Sensors**

[Rebecca Slepian, University of Arizona, Tucson, AZ](#)

**Surface Characterization of Implantable Long-Term Use Fontan Pump Materials**

[Clare McHugh, The Pennsylvania State University, University Park, PA](#)

**Computational Fluid Dynamics Estimation of Blood Damage In Spiral Groove Bearing**

[Qing Han, PhD, University of Jinan, Jinan, China](#)

**Revisiting the Definition of Surplus Hemodynamic Energy (She) - Are We Using the Right Pulsatility Index?**

[Po-Lin Hsu, PhD, Soochow University, Soochow, China](#)

Assessment of VAD Hydraulic and Blood Damage Performances By Means of Dynamic Pressure Simulations

[Alessandra Molteni, Calon Cardio – Technology, Swansea, United Kingdom](#)

On the Estimation of Hemodynamic Parameters Using Dilution Protocol and Relative Blood Volume

[Hamed Samandari, PhD, Miami University, Miami, FL](#)

An Automated Aortic Graft Replacement for Aortic Aneurysmal Disease

[Pramod Bonde, MD, Yale University, New Haven, CT](#)

Virtual Anatomic Fitting of a Centrifugal LVAD: An Inlet Cannula Study

[Bruno Utiyama da Silva, PhD, Sao Paulo, Brazil](#)

Relationship of Platelet Adhesion with Surface Topography in the Penn State PVAD

[Cecilia Richardson, The Pennsylvania State University, State College, PA](#)

#### Nursing Posters

Work Related Burnout Is a Predictor of the Quality of Work Life among Nurse Practitioners in Mechanical Circulatory Support Programs

[Jesus Casida, PhD, RN, APN-C, University of Michigan, Ann Arbor, MI](#)

LVAD Self-Efficacy and Caregiver Dependency Do Not Mediate the Relationship between Anxiety, Depression, and Quality of Life

[Jesus Casida, PhD, RN, APN-C, University of Michigan, Ann Arbor, MI](#)

Survival Post Heart Transplant by Era in Recipients  $\geq 65y$  Bridged with Mechanical Circulatory Support

[Anthony Dan Paul Salimbangon, RN, BSN, CCRN, UCLA Medical Center, Los Angeles, CA](#)

Reduction of VAD Coordinator Time Burden and Empowerment of HVAD Patients without Compromising Care

[Thomas Schlöglhofer, BSc, Medical University of Vienna, Vienna, Austria](#)

Feasibility of Supporting Heartmate II Patients on an Ungrounded Cable to Prevent the Short-To-Shield Phenomenon

[Laura Coyle, MSN, ACNP-BC, Advocate Christ Medical Center, Oak Lawn, IL](#)

How to Improve Homecare after VAD Implantation a Patients' Perspective

[Thomas Berg, MD, University Hospital RWTH Aachen, Aachen, Germany](#)

Bridging VA ECMO to Durable LVAD: Keys to Success

[Brazil Jassman, RN, BSN, INTEGRIS Baptist Medical Center, Oklahoma City, OK](#)

The Lived Experiences of Caregivers Transitioning Home With Persons with a Ventricular Assist Device

[Pamela Combs, PhD, RN, The University of Chicago Biological Sciences, Chicago, IL](#)

Language of the Heart: Revising Consent for Improved LVAD Outcomes

[Adrianne Edlund, RN, University of Rochester Medical Center, Rochester, NY](#)

Emergency Preparedness for Centrimag VAD Patients in the CTICU

[Marita Nell-Daniels, RN, BSN, CCRN, New York Presbyterian Columbia University Medical Center, New York, NY](#)

Standardized Mechanical Circulatory Support Guidelines: The Perspective from Coordinators

[Andrew Lundstrom, BSN, RN, Bryan Heart, Lincoln, NE](#)

The Inner Workings of Femoral VA ECMO

[Monika Tukacs, RN, BSN, New York Presbyterian Hosp Columbia University, New York, NY](#)

Changes in the Clinical Characteristics of LVAD Patients

[Kathleen Hickey, PhD, Columbia University at CUMC, New York, NYF](#)

When Indecision Is the Decision

[Jill Giordano, Newark Beth Israel Medical Center, Newark, NJ](#)

Maintaining VAD Competency for a Growing Program: One Centers Experience

[Andrew Lundstrom, BSN, RN, Bryan Heart, Lincoln, NE](#)

Improving Ventricular Assist Device VAD Patient Education Through Teach Back

[Penny Messner, APRN, CNS, DNP, Mayo Clinic, Rochester, MN](#)

**8:00am-12:30pm | GENERAL SESSION 2**

*Co-Chairs: Steven Koenig, PhD, University of Louisville, Louisville, KY*

*Egemen Tuzun, MD, PhD, Texas A&M University, College Station, TX*

**8:00-8:30am | ASAIOfyi – for young innovators Rapid Fire Abstract Presentations**

**8:00-8:05am | Transmission Electron Microscopy of Explanted Intravascular Medical Devices**

**Staci Jessen, PhD, CV Pathology Lab Texas A&M Univ, College Station, TX**

**8:05-8:10am | Fluid Dynamics of the Pulsatile Penn State Pediatric Ventricular Assist Device at Elevated Beat Rate Conditions**

**Sailahari Ponnaluri, Pennsylvania State University, State College, PA**

**8:10-8:15am | Asymptomatic Moderate Aortic Insufficiency with a Left Ventricular Assist Device Portends a Worse Long-Term Survival**

**Bryan Auvil, University of Pennsylvania, Philadelphia, PA**

**8:15-8:20am | Comparison of Hmii and HVAD Outcomes in Patients Supported for Over Two Years**

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

**8:20-8:25am | Hemodynamic Speed Optimization in VAD Support**

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

**8:25-8:30am | Maintaining VAD Competency for a Growing Program: One Centers Experience**

**Andrew Lundstrom, BSN, RN, Bryan Heart, Lincoln, NE**

**8:30-9:30am | ASAIOfyi – for young innovators Student Design Competition**

**Final Design of Pediatric Artificial Urinary Sphincter**

**Quentin Li, Rice University, Houston, TX**

**Device for At-Home Monitoring of Jugular Venous Pressure**

**Angela Zhang, Rice University, Houston, TX**

**Implantable Port for the Localization and Sustainment of Implanted Cells for Cellular Therapies**

**Lucas Tatem, Clemson University, Clemson, SC**

**Wireless Leadless Multisite Pacemaker Prototype**

**Yoseph Maguire, Rice University, Houston, TX**

**Development of an Acute Ischemic Stroke Hemodynamic Flow Model**

**Thomas Donnelly, Pennsylvania State University, State College, PA**

**A Cervical Cancer Diagnostic Device for Low Resource Settings**

**Calvin Lin, Boston University, Boston, MA**

**Development of a Non-Blood Contacting Pediatric Heart Augmentation Device**

**Kendal Ezell, Texas A&M University, College Station, TX**

**Influence of compliant Sinuses of Valsalva on Poli-valve Hydrodynamic Performance**

**Davide Dell'Oca, Politecnico di Milano, Milan, Italy**



Dr. Koenig



Dr. Tuzun

**9:30-10:00am | Keynote Address: Innovations in Communication**

**Ralph Weickel, President, Corporation for Positive Change, Lexington, KY**



Mr. Weickel

**10:00-10:45am | Posters – Exhibits – Enjoy Refreshments**

10:45am-12:30pm | GENERAL SESSION 2 Continued

10:45-11:15am | ASAIO Hastings Lecture

Steven Phillips, MD, NIH retired, Urbandale, IA

11:15-11:35am | Open Discussion with Two ASAIO Pioneers

Jean Kantrowitz, MPH, ViaDerm LLC, Plymouth, MI

Edward Leonard, PhD, Columbia University, New York, NY

11:35am-12:20pm | Keynote Speaker – Fireside Chat: The Evolution of Cardiac Surgery Over Four Decades from a Surgeon, Innovator, Clinical Trials Director, Service Line and CEO Perspective

Delos Cosgrove, MD, CEO Cleveland Clinic, Cleveland, OH

12:20-12:30pm | ASAIO Fellowship and Award Announcements



Dr. Phillips



Dr. Cosgrove

12:30-1:30pm | Lunch Break

1:30-3:00pm | CARDIAC 3 – OPTIMIZING OUTCOMES IN PATIENTS WITH DURABLE MECHANICAL SUPPORT: HOW TO MAKE THE BEST OF IT?

Co-Chairs: Claudius Mahr, DO & Daniel Zimpfer, MD

Cardiac Abstract Presentations

1:30-1:40pm | Sequences of Adverse Events in Left Ventricular Assist Device (LVAD) Patients Experiencing Episodes of Neurological Dysfunction

Faezeh Movahedi, PhD, University of Pittsburgh, Pittsburgh, PA

1:40-1:50pm | Effects of Continuous Flow Left Ventricular Assist Devices on Long-Term Kidney Function

Andre Critsinelis, BS, BA, Baylor College of Medicine, Houston, TX

1:50-2:00pm | Correlation of Doppler Opening Blood Pressure to Invasive Mean Arterial Pressure in Continuous Flow VADS

Claudius Mahr, DO, University of Washington, Seattle, WA

2:00-2:10pm | Effectiveness of Time in Therapeutic Range (Ttr) In Predicting Adverse Outcomes Platelet Shear Exposure and Residence Time

Elizabeth Einarson, Intermountain Medical Center, Murray, UT

2:10-2:20pm | Atrial Fibrillation Increases Thrombogenicity of LVAD Support via Increased Platelet Shear Exposure and Residence Time

Jennifer Beckman, MSN, ARNP, FNP, University of Washington, Seattle, WA

2:20-2:30pm | Predictors of Long-Term Survival of Patients on Left Ventricular Assist Device Support

Sriram Nathan, MD, The University of Texas Health Science Center, Houston, TX

Invited Presentation

2:30-2:50pm | What Does the Ideal VAD Look Like?

John Stulak, MD, Mayo Clinic Hospital, Rochester, MN

2:50-3:00pm | Discussion

**1:30-3:00pm | BIOENGINEERING 3 – SENSORS AND PUMP CONTROL – PHYSIOLOGICAL CONTROL AND SPEED MODULATION**

*Co-Chairs: Joshua Cysyk, PhD & Kevin Soucy, PhD*

**1:30-2:00pm | Pump Flow Adaptation to Physiological Needs – Challenges, Implementations in Software and Hardware, Validation Steps**

**Marianne Schmid Daners, PhD, ETH, Zurich, Switzerland**

**Bioengineering Abstract Presentations**

**2:00-2:10pm | Physiological Control with A Synchronous Positive Displacement Rotary Piston Pump**

**Jeffrey Gohean, MSME, Windmill Cardiovascular Systems Inc, Austin, TX**

**2:10-2:20pm | Portable Pneumatic Driver for Long-Term Counterpulsation Support**

**Joshua Woolley, PhD, NuPulseCV, Raleigh, NC**

**2:20-2:30pm | The Six-Minute Walk Test Revisited: A Human Motion Study of Heart Failure Patients**

**Hailey Swanson, University of Arizona, Tucson, AZ**

**2:30-2:40pm | A Modified Definition Of Ejection Fraction for Continuous Flow Left Ventricular Assist Devices As A Determinant For Heart Recovery**

**Viswajith Siruvallar Vasudevan, University of Central Florida, Orlando, FL**

**2:40-2:50pm | Effect of Driving Pressure on VAD Flow Fields**

**John Woodard, PhD, Berlin Heart GmbH, Berlin, Germany**

**2:50-3:00pm | Evaluation of Flow Modulation Approaches In Ventricular Assist Devices (VADS) Using an In-Vitro Endothelial Cell Culture Model (ECCM)**

**Palaniappan Sethu, PhD, University of Alabama at Birmingham, Birmingham, AL**

**1:30-3:00pm | VAD 2 – SHARK TANK – “Nobody has a monopoly on good ideas” – Kevin O’Leary**

*Co-Chairs: Dawn Christensen, MS, FNP-BS & Erin Davis, BSN, RN*

**1:30-2:00pm | Topic 1: Expanding a Program Without Adding New Personnel**

**Roger Swayze, RN, BSN, MBA, CHI St Vincent, Little Rock, AR**

**Thomas Berg, MA, University Hospital RWTH Aachen, Aachen, Germany**

**2:00-2:30pm | Topic 2: Simplifying Significant & Essential Education Needs**

**Mike McCall, BME, University of Pittsburgh Medical Center, Pittsburgh, PA**

**Cheryl Bittel, MSN, APRN, Northeast Georgia Medical Center, Gainesville, GA**

**2:30-3:00pm | Topic 3: Excellent Driveline Care: Say Yes to the Dressing!**

**Brazil Jassman, RN, BSN, INTEGRIS Baptist Medical Center, Oklahoma City, OK**

**Anthony Dan Paul Salimbangon, RN, BSN, UCLA Medical Center, Buena Park, CA**

**1:30-3:00pm | PULMONARY 3 – EPIDEMIOLOGY OF ECMO FOR RESPIRATORY SUPPORT**

*Chair: Raquel Bartz, MD*

**1:30-1:45pm | Present and Future Directions of ECMO Centers**

**Michael Stentz, MD, MS, Emory University, Atlanta, GA**

**1:45-1:50pm | Discussion and Questions**

**1:50-2:05pm | The Explosive Growth of Adult ECMO in the United States**

**Jacob Gutsche, MD, University of Pennsylvania, PA**

**2:05-2:10pm | Discussion and Questions**

**2:10-2:25pm | The Changing Landscape of Extracorporeal CPR**

**Steven Conrad, MD, PhD, Louisiana State University HCS, Shreveport, LA**

**2:25-2:30pm | Discussion and Questions**

**Pulmonary Abstract Presentations**

**2:30-2:40pm | OCS Ex-Vivo Lung Perfusion Maintains Endothelial Integrity Associated With Reduced Severe PGD Grade**

**Bettina Wiegmann, MD, Hannover Medical School, Hannover, Germany**

**2:40-2:50pm | In Vitro Characterization of A Modular Pump Lung Capable of Multiple Respiratory Assist Applications**

**Ryan Orizondo, PhD, BS, University of Pittsburgh, Pittsburgh, PA**

**2:50-3:00pm | Development of an Ultra Compact Durable ECMO System with Built-In Monitors and Long-Term Evaluation in Chronic Animal Experiments for four Weeks**

**Nobumasa Katagiri, PhD, National Cerebral & CV Ctr Research Inst Osaka, Japan**

**1:30-3:00pm | RENAL 3 – BLOOD VESSEL INNOVATION**

*Co-Chairs: Alexander Yevzlin, MD & Matthew McGuire, MD*

**Renal Abstract Presentation**

**1:30-1:40pm | Intergaft Pivotal Trial: A Novel AVG Minimally Invasive Anastomotic Device for AVG Creation**

**Alexander Yevzlin, MD, University of Michigan, Ann Arbor, MI**

**Invited Presentations**

**1:40-2:20pm | Bioengineered Blood Vessel for Hemodialysis Access and Vascular Repair**

**Jeffrey Lawson, MD, PhD, Humacyte Inc, Durham, NC**

**2:20-3:00pm | Vascular Elasticity in Hemodialysis Accesses**

**William Weitzel, MD, University of Michigan Health System, Ann Arbor, MI**

**1:30-3:00pm | PEDIATRIC 2 – OVERCOMING THE LIMITS OF DESIGN: MINITURIZATION, PORTABILITY AND AFFORDABILITY IN CHILDREN**

*Chairs: Robert Niebler, MD & Angela Lorts, MD*

**1:30-1:50pm | Adapting Big Devices to Small Children: Virtual Fit Technology**

**David Morales, MD, University of Cincinnati College of Medicine, Cincinnati, OH**

**1:50-2:10pm | Adapting Big Devices to Small Children: Human Factor Testing and Modifications**

**Jenna Murray, NP, Lucile Packard Children's Hospital, Palo Alto, CA**

**2:10-2:30pm | Downsizing – The Future is Small**

**Chad Dague, MSEE, Abbott Senior Engineer, Burlington, MA**

**2:30-2:50pm | Examining the Affordability of Advanced Support in Children**

**Joseph Rossano, MD, Children's Hospital of Philadelphia, Philadelphia, PA**

**Pediatric Abstract Presentations**

**2:50-3:00pm | A Pediatric Heart Valve Designed for Adaptation to Growth**

**Corin Williams, PhD, Draper University, Cambridge, MA**

**3:00-3:10pm | Impella CP Use for Left Heart Decompression While on ECMO in A Pediatric Patient**

**Ashish Ankola, MD, Morgan Stanley Children's Hosp of New York Presbyterian, New York, NY**

**1:30-2:30pm | IFAO SESSION**

*Co-Chairs: Jonathan Haft, MD & Toru Masuzawa, PhD*

**1:30-1:50pm | Current Topics and Future Perspectives of Surgery for Valve Disease in Japan**

**Koichi Toda, MD, PhD, Osaka University, Osaka, Japan**

**1:50-2:10pm | SAVR, TAVR, SMVR, TMVR, etc: Technologies and Trends for Heart Valve Repair and Replacement**

**Ulrich Steinseifer, PhD, Monash University, Clayton, Australia**

**2:10-2:30pm | Aortic Valve Replacement Trends in the US: The Future Role of Surgical Replacement**

**Mark Slaughter, MD, University of Louisville, Louisville, KY**

**3:00-3:45pm | Posters – Exhibits – Enjoy Refreshments**

**3:45-5:00pm | CARDIAC 4 – THE FUTURE OF MCS THERAPY: INNOVATIVE AND NOVEL BIOENGINEERED APPROACHES TO ADVANCED HEART FAILURE**

*Co-Chairs: Maya Guglin, MD, PhD & Thomas Schlöglhofer, BSc*

**Cardiac Abstract Presentations**

**3:45-3:55pm | Electrocardiogram-Synchronized Rotational Speed Modulation System Can Reduce the Recirculation Due to Aortic Insufficiency in LVAD Support**

**Kei Iizuka, MD, PhD, Tokyo Women's Medical University, Tokyo, Japan**

**3:55-4:05pm | Case Report First-In-Human (Fih) Studies of Ch-VAD in China**

**Haibo Chen, MD, Fuwai Hospital, Beijing, China**

**4:05-4:15pm | In-Vivo Validation of Totally Implantable Ventricular Assist Device Support Using Contactless Wireless Power**

**Jiheum Park, PhD, Yale University, New Haven, CT**

**4:15-4:25pm | PVAD: A Linear, Pulsatile, Peristaltic Ventricular Assist Device Mechanism**

**Zachary Frankman, BS, University of Arizona, Tucson, AZ**

**Invited Presentation**

**4:30-4:50pm | Funding the Future of MCS – NIH and Other Opportunities**

**Timothy Baldwin, PhD, NHLBI-NIH, Bethesda, MD**

**4:50-5:00pm | Discussion**

**3:45-5:00pm | BIOENGINEERING 4 – BLEEDING AND VON WILLEBRAND FACTOR**

*Co-Chairs: Marvin Slepian, MD & Kevin Bourque, MSME*

**3:45-4:15pm | Bench Top Models of vWF Multimer Distribution in Flow**

**Christopher Siedlecki, PhD, Penn State College of Medicine, Hershey, PA**

**4:15-5:00pm | Bioengineering Abstract Presentations**

**4:15-4:25pm | Combined Action of Biochemical Agonists and VWF-Mediated Shear Activation in Stenosis**

**Mansur Zhussupbekov, Cornell University, Ithaca, NY**

**4:25-4:35pm | Disruption of Von Willebrand Factor In Turbulent Flow**

**Choon-Sik Jhun, PhD, Penn State College of Medicine, Hershey, PA**

**4:35-4:45pm | The “Molecular Signature” of Dynamic Shear-Mediated Platelet Activation in Mechanical Circulatory Support**

**Yana Roka Moiiia, PhD, Saver Heart Center, University of Arizona, Tucson, AZ**

**4:45-4:55pm | The Biomimetic Modification With Surface Texturing And Nitric Oxide Release to Improve Hemocompatibility of Biomaterials for Blood-Contacting Medical Devices**

**Christopher Siedlecki, PhD, Penn State College of Medicine, Hershey, PA**

**3:45-5:00pm | PULMONARY 4 – PERMANENTLY IMPLANTABLE RESPIRATORY SUPPORT**

*Chair: James Blum, MD*

**3:45-4:00pm | Research on late lung recovery: Wearable membrane lungs**

**Robert Bartlett, MD, University of Michigan, Ann Arbor, MI**

**4:00-4:05pm | Discussion and Questions**

**4:05-4:20pm | Pump Integrated Artificial Lung**

**Bartley Griffith, MD, University of Maryland, Baltimore, MD**

**4:20-4:25pm | Discussion and Questions**

**4:25-4:40pm | Pulsatile Flow Pump Integrated Gas Exchanger**

**Cherry Croft, PhD, University of Kentucky, Lexington, KY**

**4:40-4:45pm | Discussion and Questions**

**Pulmonary Abstract Presentation**

**4:45-4:55pm | Chronic In-Vivo Study Of A Lung Support Device With Incorporated RAS-Q® Technology**

**Ralf Borchardt, Dr Ing, enmodes GmbH, Aachen, Germany**

**4:55-5:00pm | Discussion and Questions**

**3:45-5:00pm | RENAL 4 – MINIMALLY INVASIVE TECHNIQUES**

*Co-Chairs: Alexander Yevzlin, MD & Matthew McGuire, MD*

**3:45-4:20pm | Endovascular Fistula Creation / FLEX-1 Study**

**Deeraj Rajan, MD, BSc, , University of Toronto, Toronto, Ontario, Canada**

**4:20-4:55pm | Minimally Invasive AVG Insertion**

**Alexander Yevzlin, MD, University of Michigan, Ann Arbor, MI**

**3:45-5:00pm | PEDIATRIC 3 – PEARLS AND PERILS OF SUPPORTING SINGLE VENTRICLES**

*Co-Chairs: Christopher Almond, MD, MPH & Kurt Schumacher, MD*

**3:45-4:00pm | Overcoming Limited Support Options for Shunted Neonates**

**Katherine Simpson, MD, St Louis Children's Hospital, St. Louis, MO**

**4:00-4:15pm | Improving Oxygenation and Circulations in Glenn Physiology with Modified ECMO**

**Christina VanderPluym, MD, Boston Children's Hospital, Boston, MA**

**4:15-4:30pm | Support Strategies for the Fontan**

**Mark Bleiweis, MD, University of Florida, Gainesville, FL**

**Pediatric Abstract Presentations**

**4:30-4:40pm | Effect of Age on Hemodynamics in 1 and 1/2 Ventricle Sheep Model**

**Hitoshi Kanamitsu, MD, Stanford University, Stanford, CA**

**4:40-4:50pm | Conversion of Failed Single Ventricle Palliation to In Series Circulation and Total Artificial Heart**

**Robert Niebler, MD, Medical College of Wisconsin, Milwaukee, WI**

**4:50-5:00pm | Stent Angioplasty of the Ductus Arteriosus as an Early Palliative Procedure for Pulmonary Atresia: Single Institution Experience**

**Juan Carlos Briceño, PhD, Universidad de los Andes, Bogota, Colombia**

**5:15-5:45pm | ASAIO Business Meeting**

800am-5:00pm | Poster Presentations

Cardiac Posters

Respiratory Failure Requiring Tracheostomy after Continuous Flow Left Ventricular Assist Device Implantation

[Harveen Lamba, MD, Baylor College of Medicine at Texas Heart Institute, Houston, TX](#)

New Tool for Left Intraventricular Visualization and Bloodless LVAD Insertion

[Jamshid Karimov, MD, PhD, Cleveland Clinic, Cleveland, OH](#)

Significant Decrease in Hga1c Levels in Diabetics after Continuous-Flow Left Ventricular Assist Device Implantation

[Adriana Santiago, MD, Baylor College of Medicine at Texas Heart Institute, Houston, TX](#)

Morphologic Patterns of Aortic Valve Regurgitation Following Continuous-Flow Left Ventricular Assist Device Implantation

[Keshava Rajagopal, MD, PhD, University of Texas Health Science Center, Houston, TX](#)

Rejection in Heart Transplant Patients Is Correlated With Hla Epitope Matching and Not With LVAD-Bridging

[Matthew Cusick, PhD, Baylor College of Medicine at Texas Heart Institute, Houston, TX](#)

Delayed Sternal Closure in Heart Transplant Patients Bridged with Continuous Flow Left Ventricular Assist Devices

[Ryan Conyer, BS, Baylor College of Medicine at Texas Heart Institute, Houston, TX](#)

Chronic In Vivo Test of A Mechanical Circulatory Assist Device for Failed Fontan Circulation

[Joshua Cysyk, PhD, Penn State college of Medicine, Hershey, PA](#)

Intracorporeal Heat Distribution from Fully Implantable Energy Sources for Mechanical Circulatory Support: A Computational Proof-Of-Concept Study

[Jacopo Biasetti, PhD, Johns Hopkins University, Baltimore, MD](#)

Influence of VAD Pressure-Flow Characteristics on Exercise Physiology: Hemodynamic and Energetic Evaluation with a Computational Model

[Libera Fresiello, PhD, KU Leuven, Leuven, Belgium](#)

Simulated Performance of Cleveland Clinic Continuous-Flow Total Artificial Heart Using the Virtual Mock Loop

[Takuma Miyamoto, MD, PhD, Cleveland Clinic, Cleveland, OH](#)

Inter-Laboratory Particle Image Velocity (Piv) Measurements in The FDA Blood Pump Model

[Prasanna Hariharan, PhD, US Food and Drug Administration, Silver Spring, MD](#)

A Multimodal Approach to a Partial Outflow Graft Obstruction Diagnosis in LVAD Patients

[Kelly Mesa, Providence Sacred Heart Medical Center, Spokane, WA](#)

Hemodynamic and Echo Measurements during Weaning of Va Ecmo Suggest Acceptable Lv Unloading

[Ahmed Elbanayosy, MD, INTEGRIS Baptist Medical Center, Oklahoma City, OK](#)

Outcomes with Left Ventricular Assist Device in Acute Cardiogenic Shock Patients

[Clauden Louis, MD, University of Rochester Medical Center, Rochester, NY](#)

Abdominal, Not Thoracic, Positioning of A Novel Intra-Aortic Micro-Axial Fluid Entrainment Pump (Aortix)

Provides Superior Hemodynamic Effects in A Swine Model Of Ischemic Heart Failure

[Shiva Annamalai, MD, Tufts Medical Center, Boston, MA](#)

Is Platelet Aggregation Different In Arterial Vs. Venous Blood?

[Jan Stanley Simoni, DVM, PhD, TX HemoBio Therapeutics, Lubbock, TX](#)

Comprehensive Shear Stress Analysis in CH-VAD - An Ultra-Compact Fully Magnetically Suspended Implantable LVAD

[Po-Lin Hsu, PhD, Soochow University, Jiangsu, China](#)

Implantation of Left Ventricular Assist Device after Descending Aortic Stent Graft for Mural Thrombus

[Aakash Shah, MD, University of Maryland School of Medicine, Baltimore, MD](#)

Simulation Study Exploring the Potential of Acoustic Resonance to Measure Left Ventricular Volume

[Seraina Dual, ETH Zurich, Zurich, Switzerland](#)

**VAD Displayed Flow Frequently Fails to Accurately Predict Cardiac Output Measured by Right Heart Catheterization**

[Jennifer Beckman, MSN, ARNP, FNP, University of Washington, Seattle, WA](#)

**Hospital Readmissions for Patients with Left Ventricular Assist Devices (LVAD)**

[Bibin Varghese, BS, Baylor College of Medicine at Texas Heart Institute, Houston, TX](#)

**Modeling of Virtual Mechanical Circulatory Support Hemodynamics for Biventricular Heart Failure**

[Jamshid Karimov, MD, PhD, Cleveland Clinic, Cleveland, OH](#)

**End Organ Recovery and Survival in Adults on Veno-Arterial Extracorporeal Membrane Oxygenation**

[Natalia Bahatyrevich, BS, Thomas Jefferson University, Philadelphia, PA](#)

**Implementation of a Physiologic Coronary Circulation in a Mock Circulatory Loop to Evaluate Rotary Blood Pump Support Strategies**

[Eric Wu, BS, Innovative CV Engineering and Technology Laboratory, Brisbane, Australia](#)

**Using Salt to Treat Driveline Site Hyper-Granulation Tissue in Patients with Left Ventricular Assist Devices**

[Suzan Lerum, RN, Sharp Memorial, San Diego, CA](#)

**In Vitro Simulation of Partial Left Ventricular Assist in an Adult**

[George Pantalos, PhD, University of Louisville, Louisville, TX](#)

**A Shift in Paradigm: Transitioning from Surgical to a Medical Multidisciplinary Approach to Inpatient Management of Patients with Ventricular Assist Devices**

[Michael Morcos, MD, University of Washington, Seattle, WA](#)

**The Association of Peak Lactate Levels with Length of Stay and In-Hospital Mortality after LVAD Implantation**

[Mohamed Hassanein, MD, MedStar Washington Hospital Center, Washington DC](#)

**The Incidence, Risk Factors, and Outcome of Gastrointestinal Bleeding in Patients with Left Ventricular Assist Device: Japanese Single Center Cohort Study**

[Masatoshi Akiyama, MD, PhD, Tohoku University Hospital, Miyagi, Japan](#)

**Evaluation of Gastrointestinal Bleeds in Left Ventricular Assist Device Patients Receiving Phosphodiesterase 5 Inhibitors**

[George Gavrilos, Pharm D, MA, Advocate Christ Medical Center, Oak Lawn, IL](#)

**A Novel Self-Sealing, Fixation Enabled, Endovascular Stent Delivery Design for Type a Aortic Dissection**

[Pramod Bonde, MD, Yale University, New Haven, CT](#)

**A Mechanized Valve Sparing Aortic Root Remodeling with Annular Stabilization**

[Pramod Bonde, MD, Yale University, New Haven, CT](#)

**Progression of Driveline Failure in a Heartmate II LVAD Patient**

[Harrison Smith, Providence Sacred Heart Medical Center, Spokane, WA](#)

**Leadless Pacemaker Implantation in an LVAD Patient**

[Sujeen Adhikari, UIC-Christ, Oak Lawn, IL](#)

**"Temporary" VAD Anticoagulation Management and Positive Outcomes**

[Chet Villa, MD, Cincinnati Children's Hospital Medical Center, Cincinnati, OH](#)

**Proposed a In-Vitro Test Jig to Improve the Availability of Vads in Patients Suffering from Severe Heart Failure**

[Jefferson Dias, MD, University of São Paulo, São Paulo, Brazil](#)

**Concentric Heart Retains Natural Atria and Valves**

[Arnold Lande, MD, Northport, MI](#)

**Implantable Cardioverter Defibrillators In Patients With Continuous Flow Left Ventricular Assist Devices: Use, Procedures And Outcomes**

[Paulino Alvarez, MD, University of Iowa, Iowa City, IA](#)

**Minor Geometric Details Significantly Affect Hemodynamics and Hemocompatibility of a Miniature Ventricular Assist Device: A Cfd Study**

[Jingchun Wu, PhD, Advanced Design Optimization LLC, Irvine, CA](#)

## **Bioengineering Posters**

**Comparison between Three Impellers for a Transventricular Assist Device (TVAD)**

**[Gustavo De Andrade, Institute Dante Pazzanese of Cardiology, São Paulo, Brazil](#)**

**Embedding Medium Composition Can Affect Assessment of Subcutaneous Medical Device Biocompatibility Using Standardized Scoring Schemes**

**[Maureen O'Brien, DVM, MS, DACVP, Charles River Laboratories, Frederick, MD](#)**

**Direct 3D Printing of an Anatomical Model for Flow Visualization Experiments**

**[Kenneth Aycock, PhD, US Food and Drug Administration, Silver Spring, MD](#)**

**Novel Right Sided Pulmonary to Left Atrial Mock Circulatory Loop (Mcl) for Experimental Testing of Membr Sensors and Catheter-Based Devices**

**[Michael Sobieski, RN, CCP, University of Louisville Jewish Hospital, Louisville, KY](#)**

**Investigation of Polyethylene Glycol (Peg) Coatings on Polydimethylsiloxane (Pdms) for Membrane Oxygenator Applications**

**[Emily Abada, BS, University of California San Francisco, San Francisco, CA](#)**

**Validation of Bayesian Models for LVAD Mortality at Single Implant Center**

**[Lisa Lohmueller, PhD, Carnegie Mellon University, Pittsburgh, PA](#)**

**Modeling and Optimization of a Pediatric Artificial Lung Based On Circular Blood Flow Paths**

**[Alex Thompson, PhD, University of Michigan - ECMO Lab, Ann Arbor, MI](#)**

**Effects of Animal Blood Type on In Vitro Dynamic Thrombogenicity Tests of Biomaterials**

**[Megan Jamiolkowski, PhD, U.S. Food and Drug Administration, Silver Spring, MD](#)**

**An Experimental Study of the Embolus Trapping Efficiency of the FDA Generic Inferior Vena Cava Filter**

**[Joshua Riley, BS, The Pennsylvania State University, State College, PA](#)**

**CFD Integrated Optimization Platform for a Fontan Circulatory Assist Device**

**[Christopher Scheib, BS, Penn State College of Medicine, Hershey, PA](#)**

**Simulation in Surgery: Models for Ventricular Assist Device Implant Training**

**[Ann-Marie Ginn, BS, Texas A&M University, College Station, TX](#)**

**Prediction of Thrombus Formation by Cfd with Considering Transport Equations and Aggregations on High Shear Flows and Observation of the Process by Optical Systems**

**[Masaaki Tamagawa, Dr Eng, Kyushu Institute of Technology, Fukuoka, Japan](#)**

**3d Printed Mock Ventricular Assist Device for Benchtop Testing**

**[Liana Polikaitis, BS, Texas A&M University, College Station, TX](#)**

**Assessment of Healing Response to Intravascular Devices Using Transmission Electron Microscopy**

**[Molly Friedemann, DVM, Texas A&M University, College Station, TX](#)**

**Continuous Estimation of Dynamic Differential Pump Pressure with a Rotary Piston Pump**

**[Jeffrey Gohean, MSME, Windmill Cardiovascular Systems Inc, Austin, TX](#)**

**Computational Prediction of the Effect of Left Ventricular Assist Device Therapy on Right Ventricular Mechanics**

**[Ki Moo Lim, Kumoh National Institute of Technology, Gumi, Gyeongbuk, South Korea](#)**

**A Comprehensive Platform for Enhanced Islet Cell Delivery: Update from the Drive Consortium**

**[Scott Robinson, MD, National University of Ireland Galway, Ireland](#)**

**An Algorithm for Coupling Multi-Outlet Experimental Sections to Numerical Physiology Simulations for a Hybrid Cardiovascular**

**[Ehsan Mirzaei, Clemson University, Clemson, NC](#)**

**An Alternative Production Method for Collagen to Obtain Scaffolds**

**[Irem Deniz Derman, BS, Bahçeşehir University, Istanbul, Turkey](#)**

**Quantification of Flow and Thrombus Development Using Micro-Particle Image Velocimetry**

**[Tice Harkins, The Pennsylvania State University, State College, PA](#)**

**Ex Vivo Culture Platform to Characterize and Monitor the Onset, Progression and Treatment of Vascular Pathologies**

**[Noemi Vanerio, LifeTec Group BV, Eindhoven, Netherlands](#)**

**Contact Activation of Blood Plasma Coagulation**

**[Christopher Siedlecki, PhD, Penn State College of Medicine, Hershey, PA](#)**

**8:00am-5:00pm | Bioengineering Poster Presentations Continued**

**Fabrication of Hollow Fiber Bioreactor for Functional Bioartificial Organs**

**Soeongmi Song, MD, Asan Medical Center, Seoul, South Korea**

**Benchtop Model for Examining Ventricular Assist Device Response to Embolic Particles**

**Maci Billiot, Texas A&M University, College Station, TX**

**Novel Tissue-Engineered Heart Valve without Any Foreign Bodies**

**Yoshiaki Takewa, MD, PhD, National Cerebral & Cardiovascular Center, Osaka, Japan**

**Pulmonary Posters**

**Tethered Liquid Perfluorocarbon Coating Prevents Thrombus Formation during 6 Hour Heparin Free Extracorporeal Circulation**

**Teryn Roberts, The Geneva Foundation, Tacoma, WA**

**Refractory Hypoxemia During Vv Ecmo: Are 2 ECMO Circuits better Than One?**

**Craig Ainsworth, MD, US Army Institute of Surgical Research, Fort Sam Houston, TX**

**A Successful Bridge to Lung Transplantation Record**

**Christopher Wigfield, MD, Advocate Christ Medical Center, Oak Lawn, IL**

**Saturday, June 16**

**8:00am-12:30pm**

**ELSO Course**

***Christian Bermudez, MD, Hospital of the University of Pennsylvania, Philadelphia, PA***

***Robert Bartlett, MD, University of Michigan, Ann Arbor, MI***

**8:00-8:15am | History**

**Robert Bartlett, MD, University of Michigan, Ann Arbor, MI**

**8:15-9:00am | Current Status of ECLS**

**Christen Bermudez, MD, Hospital of the University of Pennsylvania, Philadelphia, PA**

**9:00-10:00am | Patient Management**

**Steven Conrad, MD, PhD, Louisiana State University HCS, Shreveport, LA**

**10:00-10:15am | Break**

**10:15-10:45am | Industry and Regulation**

**Scott Merz, PhD, MC3 Cardiopulmonary Inc., Dexter, MI**

**10:45am-12:00pm | Devices and Techniques**

**William Lynch, MD, MS, University of Michigan, Ann Arbor, MI**

**12:00am-12:30pm | Case Examples: Bridge to Lung Transplant – ECPR – Panel Discussion**

**Robert Bartlett, MD, University of Michigan, Ann Arbor, MI**

**Christen Bermudez, MD, Hospital of the University of Pennsylvania, Philadelphia, PA**

**12:30pm | Optional Certifying Exam**



Dr. Bermudez



Dr. Bartlett

**8:00am-1:00pm**

**ICCAC MPV Proficiency Verification Training Courses**

***[Click here for more information](#)***

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

***Jennifer Beckman, MSN, ARNP, FNP, University of Washington, Seattle, WA***

**Medtronic HVAD**

**Abbott HeartMate II HeartMate 3**

**Abbott CentriMag**

**Abiomed Impella**

**Berlin Heart EXCOR**

**SynCardia – TAH**



Mr. Schlöglhofer



Ms. Beckman

**8:30-10:00am | CARDIAC 5 – MECHANICAL CIRCULATORY SUPPORT vs. HEART TRANSPLANTATION IN THE CURRENT ERA: MAN vs. MACHINE**

*Co-Chairs: Marvin Slepian, MD & Robert Kormos, MD*

**Cardiac Abstract Presentations**

**8:30-8:40am | LVAD Patients with Chronic Kidney Disease: Are Two Organs Better Than One?**

**Megan Kamath, MD, University of California, Los Angeles, CA**

**8:40-8:50am | Self-Driving Cars: Should the Transplant Community Be Worried?**

**Farhan Zafar, MD, MS, Cincinnati Children's Hosp Med Center, Cincinnati, OH**

**8:50-9:00am | Survival and Functional Status After Bridge-To-Transplant with A Left Ventricular Assist Device**

**Alejandro Suarez-Pierre, MD, Johns Hopkins University, Baltimore, MD**

**9:00-9:10am | Successful Treatment of Rvad Thrombosis with Tpa In A Bivad Supported Patient After Heparin And Tirofiban Failure**

**George Gavrilos, Pharm D, MA, Advocate Christ Medical Center, Oak Lawn, IL**

**9:10-9:20am | Continuous-Flow Left Ventricular Assist Device Decommissioning As Compared to Explanation for Ventricular Recovery: A Systematic Review and Meta-Analysis**

**Jae Hwan Choi, MD, Thomas Jefferson University, Philadelphia, PA**

**Invited Presentation**

**9:20-9:30am | VAD Outcomes Are Approaching Transplantation – For Some or for ALL?**

**Mary Keebler, MD, Vanderbilt University, Nashville, TN**

**9:30-10:00am | Discussion**

**8:30-10:00am | BIOENGINEERING 5 – TISSUE ENGINEERING AND REGENERATIVE MEDICINE – RECOVERY, VASCULAR GRAFTS, MULTISCALE MECHANICS**

*Co-Chairs: John Criscione, MD, PhD & George Truskey, PhD*

**8:30-9:00am | Biologically-Engineered Vascular Grafts and Heart Valves That Reanimate**

**Robert Tranquillo, PhD, University of Minnesota, Minneapolis, MN**

**9:00-9:30am | Driving Medical Innovation through Regenerative Engineering**

**Martha Lundberg, PhD, National Heart, Lung and Blood Institute, Washington DC**

**Bioengineering Abstract Presentations**

**9:30-9:40am | Development of a Collagen-Based Angiogenic Growth Factor Delivery System for Use in Tissue-Engineered Specimens**

**Nicole Mehta, Texas A&M University, College Station, TX**

**9:40-9:50am | Galvanotaxis: An Electrochemical Strategy for Modulating Cell-Selective Migration**

**Kaitlyn Amman, BS, University of Arizona, Tucson, AZ**

**9:50-10:00am | Discussion and Questions**

**8:30-10:00am | PULMONARY 5 – TEMPORARY RESPIRATORY SUPPORT ADVANCES**

*Co-Chairs: Raquel Bartz, MD & Craig Jabaley, MD*

**8:30-8:45am | Epidemiology of ECMO for Respiratory Support**

**Raquel Bartz, MD, Duke University, Durham, NC**

**8:45-8:50am | Discussion and Questions**

**8:50-9:05am | Current Research Focus and Future Ambitions towards Artificial Lungs**

**Jutta Arens, Dr.-Ing, RWTH Aachen University, Aachen, Germany**

**9:05-9:10am | Discussion and Questions**

**9:10-9:25am | Transport of the Respiratory Patient**

**Jeremy Cannon, MD, University of Pennsylvania, Philadelphia, PA**

**9:25-9:30am | Discussion and Questions**

**Pulmonary Abstract Presentations**

**9:30-9:40am | A Low-Cost, High-Throughput Methodology for Assessing Anticoagulants And Surface Coatings for Artificial Lungs**

**Rei Ukita, BSBE, Carnegie Mellon University, Pittsburgh, PA**

**9:40-9:50am | Incorporating RAS-Q Technology into Portable CO2 Removal Device**

**Philine Ritter, M.Sc., enmodes GmbH, Aachen, Germany**

**9:50-10:00am | A Novel Application For PFC-Based Fluids: Oxygenator Performance Tests**

**Niklas Steuer, M.Sc., RWTH Aachen University, Aachen, Germany**

**8:30-10:00am | RENAL 5 – ABSTRACT SESSION**

*Co-Chairs: Alexander Yevzlin, MD & Matthew McGuire, MD*

**Renal Abstract Presentations**

**8:30-8:40am | Hemocompatibility of Small form Factor Microfluidic Filtration System with Nitride Membranes**

**Dean Johnson, PhD, University of Rochester, Rochester, NY**

**8:40-8:50am | Evaluation of the Time-averaged Solute Clearance values in Hemodialysis with Intermittent Infusion (I-HD)**

**Michio Mineshima, PhD, Tokyo Women's Medical University, Tokyo, Japan**

**8:50-9:00am | Machine Learning Facilitates Early Detection of Ureteropelvic Junction Obstruction**

**Antonio Porras, PhD, Children's National Health System, Washington DC**

**9:00-9:10am | Dialysis Chair with Leadless ECG Measurement**

**Fokko Wieringa, PhD, IMEC, Eindhoven, Netherlands**

**9:10-9:20am | Development of a Multi-Ring Type Roller Pump Unit Equipped to a Compact and Convenient Ascites Purification Machine for Cell-Free and Concentrated Ascites Reinfusion Therapy (Cart)**

**Toshiya Okahisa, MD, PhD, Tokushima University Graduate School, Tokushima, Japan**

**9:20-9:30am | Blood Access Is Key to Kidney Health Initiative (KHI) Priority**

**Arnold Lande, MD, Northport, MI**

**9:30-9:40am | New IEC Standards on PD & HD, as Well As AAMI TIR on Sorbent-Based HD**

**Fokko Wieringa, PhD, IMEC, Eindhoven, Netherlands**

**9:40-10:00am | Discussion and Questions**

**8:30-10:00am | PEDIATRIC 4 – “We Can Keep Them Alive But Can We Let Them Live?”  
OPTIMIZING THE LIFE AND DEATH OF CHILDREN SUPPORTED WITH ARTIFICIAL ORGANS**

*Chair: Christina VanderPluym, MD*

**8:30-8:50am | Pulmonary – Lung Assist Devices, Ambulatory ECMO**

**David Hoganson, MD, Boston Children’s Hospital, Boston, MA**

**8:50-9:10am | DT MCS in Children: Who and How**

**Rachele Adorisio, MD, Bambino Gesù Hospital, Italy**

**9:10-9:30am | The Interface of Palliative Care and Artificial Support**

**Seth Hollander, MD, Stanford Lucile Packard Hospital, Stanford, CA**

**Pediatric Abstract Presentations**

**9:30-9:40am | Consider Kidney When Accepting Hearts: Impact of Donor Renal Dysfunction on One-Year Survival in Children**

**Ambika Sood, BS, Cincinnati Children's Hospital Medical Center, Cincinnati, OH**

**9:40-9:50am | Peri: Infant Phantom for Pericardial Access with Direct Visualization**

**Paige Mass, BS, Children's National Medical Center, Washington DC**

**9:50-10:00am | Kardiokid Infant Mannequin for Hands-On Training and Simulation**

**George Pantalos, PhD, University of Louisville, Louisville, KY**

**10:00-10:45am | Enjoy Refreshments**

**10:45am-12:00pm | CARDIAC 6 – WHAT ABOUT THE RIGHT?  
SUPPORT FOR RIGHT AND BI-VENTRICULAR FAILURE**

*Co-Chairs: Steven Koenig, PhD & Robert Kormos, MD*

**Cardiac Abstract Presentations**

**10:45-10:55am | Excessive LVAD Speed Causes Right Heart Pressure / Volume Overload and Precipitates RV Failure**

**Alberto Aliseda, PhD, University of Washington, Seattle, WA**

**10:55-11:05am | Upgrade to Biventricular Support Using Two Separate HeartMate 3 Ventricular Assist Devices - A Proof of Concept**

**Jens Garbade, MD, PhD, University Leipzig Heart Center, Leipzig, Germany**

**11:05-11:15am | Analyzing the Value of the Pulmonary Artery Pulsatility Index Beyond Predicting Right Heart Failure**

**Salvatore Poddi, MD, Mayo Clinic, Rochester, MN**

**11:15-11:25am | Real-Time, Continuous Measurement of Right Ventricular Free Wall Strain Using an Implantable, Stretchable Sensor**

**Nikolay Vasilyev, MD, Boston Children’s Hospital, Boston, MA**

**Invited Presentation**

**11:30-11:50am | What Does the Ideal RVAD Look Like?**

**Victor Pretorius, MD, University of California San Diego, La Jolla, CA**

**11:50am-12:00pm | Discussion**

**10:45am-12:00pm | BIOENGINEERING 6 – ADDITIVE MANUFACTURING FOR ARTIFICIAL ORGANS**

*Chair: Zhongjun Wu, PhD*

**10:45-11:15am | Advanced 3D Biofabrication for Rebuilding the Heart**

**Adam Feinberg, PhD, Carnegie Mellon University, Pittsburgh, PA**

**Bioengineering Abstract Presentations**

**11:15am-11:25pm | Evaluation of the Potential of 3d-Membranes for Artificial Lungs**

**Felix Hesselmann, Dipl.-Ing, Inst of Applied Medical Engineering, Aachen, Germany**

**11:25am-11:35pm | Overcoming the Limits of Design: Magnet 3d Printing for Rapid Development of Turbodynamic Ventricular Assist Devices**

**Kai von Petersdorff-Campen, ETH Zürich, Zürich, Switzerland**

**11:35am-11:45pm | Packaging Considerations for an Implantable Hemofilter Based on Silicon Nanopore Membranes (Snm)**

**Jimmy Ly, PhD, University of California, San Francisco, CA**

**11:45am-11:55pm | The Effects of Different Blood Sampling Sites of A Closed-Loop Artificial Endocrine Pancreas In Critically Patients**

**Hideo Iwasaka, PhD, Almeida Memorial Hospital, Oita, Japan**

**10:45am-12:00pm | RENAL 6 – THE BUSINESS OF ESRD CARE**

*Co-Chairs: Alexander Yevzlin, MD & Matthew McGuire, MD*

**Applications and Opportunities for IT in Renal Disease Health Care**

**Blake Marggraff, BS, Epharmix, St Louis, MO**

**The Future of ESRD Payment Systems**

**Tim Pflederer, MD, Renal Care Associates, Peoria, IL**