### Wednesday, June 21

#### ASAIO 6th ANNUAL PEDIATRIC MEDICAL DEVICE DAY

**8:30am - 4:30pm**

8:30am **Introduction**  
Timothy Maul, CCP, PhD, Nemours Children’s Hospital, Orlando, FL

**8:35am - 10:15am** **Pediatric Day Session 1: Bringing Products To Market**

8:35am-8:55am **Orphan Products Funding For Clinical Trials**  
*Eric Chen, MS, FDA, Silver Spring, MD*

8:55am-9:25am **Orphan Products PI Perspective**  
*Christopher Almond, MD, Stanford University, Palo Alto, CA*

9:25am-9:45am **Demystifying the FDA Process**  
*Iki Adachi, MD, Texas Children's Hospital, Houston, TX*

9:45am-10:05am **Where The CDRH Is Going**  
*Vasum Peiris, MD, FDA, Silver Spring, MD*

10:05am-10:15am **Discussion and Questions**

10:15am - 10:30am **Pediatric Refreshment Break 1**

**10:30am - 11:40am** **Pediatric Day Session 2: Updates From The Field**

10:30am-10:50am **PediMacs**  
*Dr. Joseph Rossano, MD, MS, Children’s Hospital of Pennsylvania, Philadelphia, PA*

10:50am-11:10am **Early Report From PumpKIN**  
*Timothy Baldwin, PhD, NHLBI/NIH, Bethesda, MD*

11:10am-11:30am **Quality Improvement Science Of VADs**  
*Angela Lorts, MD, Cincinnati Children’s Hospital, Cincinnati, OH*

11:30am-11:45am **Discussion and Questions**

11:45pm - 1:30pm **Lunch Break**

**1:30pm - 2:45pm** **Pediatric Day Session 3: Getting A Pediatric Device to Market**

1:30pm-2:15pm **Pediatric Device Consortia Panel**  
*Julia Finkel, MD, Children's National Health System, Washington, DC*  
*Matthew Maltese, PhD, The Children's Hospital of Philadelphia, Philadelphia, PA*  
*Wenda C. Carlyle, PhD, CardioMed Device Consultants, Annapolis, MD*

2:15pm - 2:30pm **Pediatric Refreshment Break 2**

**2:30pm - 4:30pm** **Pediatric Day Session 4: New Ideas In Anticoagulation**

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 Tchouta, MD, MS, MHS, Columbia University Medical Center, 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*
**How Engineering Influences Medicine**
Fundamentals of Engineering Principles in Design, Development and Testing of Circulatory Devices

Jeff LaRose, MSME, HeartWare, Miami Lakes, FL
Kevin Bourque, MSME, St. Jude Medical Inc., Burlington, MA
Steven Koenig, PhD, University of Louisville, Louisville, KY

**How Medicine Helps Engineering Innovation**
Who Can and Cannot Benefit from VAD Therapy?
How Do We Expand the Potential Recipient Pool?

Hari Mallidi, MD, Brigham and Women’s Hospital / Harvard Medical School, Boston, MA
Tim Kaufmann, Prof Dr, RWTH Aachen University, Aachen, NRW, Germany

**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

**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

**The Four Cs of VAD Care**
Communication
Compliance
Coagulation
Complications

Basar Sareyyupoglu, MD, University Hospitals of Case Western, Cleveland, OH
Hari Mallidi, MD, Brigham and Women’s Hospital / Harvard Medical School, Boston, MA
William Holman, MD, University of Alabama, Birmingham, AL
Pamela Combs, PhD, RN, Advocate Christ Medical Center, Oak Lawn, IL

**Total Artificial Heart**
Devices in the Pipeline
Clinical Implant and Care of TAH Patients
Programmatic Aspects

Daniel Timms, PhD, BiVACOR, Houston, TX

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**Thursday, June 22**

**GENERAL SESSION 1**

7:45am - 12:30pm

7:45am - 8:00 am  
Introduction & Welcome -  
Marvin Slepian, MD, ASAIO Program Chair, University of Arizona, Tucson, AZ

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

8:00am-8:15am  
#179 Implanted Novel Autologous Bioprosthetic Valve Can Adapt the Histological Character to the Environment  
Yoshiaki Takewa, MD, PhD, National Cerebral & CV Center, Suita, Osaka, Japan

8:15am-8:30am  
#275 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

8:30am-8:45am  
#265 Post Transplant Survival in Patients Bridged to Transplant with a Ventricular Assist Device: Poor Outcomes Extend Beyond the Standard Adolescent Age Group  
Raheel Rizwan, MD, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH

8:45am-9:00am  
#239 Using Wall Shear Stress and Platelet Stress Accumulation in the Design of a Bioartificial Kidney  
Steven Goebel, PhD, SimuTech Group Inc., Rochester, NY

9:00am-9:15am  
#160 Stretchable Electronic Conformal Skin-adherent Wearable Patches: a Novel Method for Wireless Patient Monitoring  
Jacob Garlant, University of Arizona, Tucson, AZ
9:15am - 9:45 am  ASAIO President's Address  
William Fissell, MD, Vanderbilt University, Nashville, TN

9:45am - 10:30am  Visit Exhibits & 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  Rapid Prototyping Additive Manufacturing

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  The Revolution In Material Development  
Art Coury, PhD, Northeastern University, Boston, MA

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

12:10pm - 12:30pm  Fueling The Process - The VC/Financial Perspective

12:30pm - 1:30pm  Lunch Break

1:30pm - 3:00pm  CARDIAC 1

Panel: Patient Pump Interaction  
Panelists:  
John M. Stulak, MD, Mayo Clinic Hospital, Rochester, MN  
Robert Adamson, MD, Sharp Memorial Hospital, San Diego, CA  
Keith Aaranson, MD, University of Michigan, Ann Arbor, MI  
Mary Keebler, MD, Vanderbilt University, Nashville, TN

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

#176 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  
Randall Olmsted, Baylor College of Medicine, Houston, TX

#77 International Analysis of LVAD Point-of-care vs Plasma INR: a Multicenter Study  
Sarah Schettle, PA-C, Mayo Clinic, Rochester, MN

#112 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

1:30pm - 3:00pm  BIOENGINEERING 1 - A New Era in Cardiac Research  
Chairman: Egemen Tuzun, MD, PhD, Texas A & M, College Station, TX

1:30pm - 2:00pm  MRI Compatible Ex-Vivo Beating Heart (Physioheart) Platform: A New Era in Cardiac Research  
Bas de Mol, MD, PhD, JD, University of Amsterdam, The Netherlands

2:00pm - 3:00pm  Bioengineering Abstracts

#283 A Novel VAD Platform Configured for Right Heart Mechanical Circulatory Support  
J. Ryan Stanfield, PhD, VADovations, Oklahoma City, OK

#191 In vitro Modelling of Calcific Particles and Testbed for Cerebral Protection Devices (CPD) Under Physiological Conditions  
Nathalie Tapolsky, BS, University of Louisville, Louisville, KY

#85 Automatic Regulation Feasibility Testing of a Bioprosthetic Total Artificial Heart in a Bovine Model  
Jean-Christophe Perlès, MD, Carmat, Vélizy-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  
Chairman: Bryan Whitson, MD, PhD, Ohio State University, Columbus, OH

1:30pm-1:45pm  
Pro: Don Hayes, Jr., MD, MS, Ohio State University, Columbus, OH

1:45pm-2:00pm  
Con: James Blum, MD, Emory University Hospital, Atlanta, GA

2:00pm-2:15pm  
Pro: Joseph Zwischenberger, MD, University of Kentucky, Lexington, KY

2:15pm-2:30pm  
Con: William Lynch, MD, MS, University of Michigan, Ann Arbor, MI

2:30pm-2:45pm  
Panel Discussion

2:45pm-3:00pm  
Pulmonary Abstracts

2:45pm-3:00pm  
#254 CO₂ Based Servo Regulation of Artificial Lung Sweep Gas  
Alex Thompson, PhD, VA Ann Arbor Healthcare System, Ann Arbor, MI

1:30pm-3:00pm  
RENAL 1 - Global Replacement Therapy: From Innovation to Finance  
Co-Chairs:  
Prabir Roy-Chaudhury, MD, PhD, University of Arizona, Tucson, AZ  
Fokko Wieringa, PhD, Wearable Health Solutions, Eindhoven, Netherlands

Global RRT: An Overview
Miguelle Riella, MD, PhD, Catholic University of Parana, Curitiba, PR, Brazil

Commercial Opportunities and Business Challenges
Ty Schackley, ScD, Baxter Healthcare Corporation, Waukegan, IL

Legacy of Kolff and the Road Ahead
Jasper Boomker, PhD, Dutch Kidney Foundation, Bussum, Noord, Netherlands

Discussion

3:00pm-3:45pm  
Visit Exhibits & Posters

3:45pm - 5:00pm  
CARDIAC 2-Debate-VADS: Bioengineering and VADs

3:45pm-4:05pm  
Pro: New Pump Designs Have Recahed the "Perfect Pump"  
David Feldman, MD, PhD, University of Cincinnati Med Ctr, Cincinnati, OH

4:05pm-4:25pm  
Con: LVAD Technology Imovement Can Further Improve Clinical Outcomes  
John M. Stulak, MD, Mayo Clinic, Rochester, MN

4:30pm-5:00pm  
Cardiac Abstracts

4:30pm-4:45pm  
#118 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  
#116 LVAD Outflow Graft Size Impacts Thrombogenic Potential  
Venkat Keshav Chivukula, PhD, University of Washington, Seattle, WA

3:45pm - 5:00pm  
BIOENGINEERING 2  
Co-Chairs:  
Howard Frazier, MD, Baylor College of Medicine, Houston, TX  
Igor Gregoric, MD, University of Texas Health Science Ctr, Houston, TX  
Egemen Tuzun, MD, PhD, Texas A & M, 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  
#174 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

3:45pm - 5:00pm  
Integration Of Processes Within VAD Programs  
Pamela Combs, PhD, RN, Advocate Christ Medical Center, Oak Lawn, IL

Telemonitoring: Challenges and Benefits  
Michelle Kassemos, RN, University of California, San Francisco, CA

Enhancing Difficult MCS Team Decisions  
Geetha Bhat, PhD, MD, Advocate Christ Medical Center, Oak Lawn, IL
Future Challenges with MCS

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

3:45pm - 5:30pm PULMONARY 2 - Lung Injury Mini-Summit - An ASAIO Innovation Opportunity

Chairman: Joe GN "Skip" Garcia, MD, University of Arizona, Tucson, AZ

3:45pm-4:25pm 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

4:25pm-4:55pm Pathobiology of Acute Lung Injury - What Are The Targets For Intervention?

Jeffrey Jacobson, MD, University of Illinois, Chicago, IL

4:55pm-5:25pm 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 - 5:00pm RENAL 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

Cellular Advances

William Fissell, Vanderbilt University, Nashville, TN

Biomaterial Advances

Dimitrios Stamatialis, PhD, University of Twente MRA Institute, Enschede, Netherlands

Mechanical Breakthroughs

Dean Johnson, PhD, University of Rochester, Rochester, NY

The Regulatory Viewpoint

Murray Sheldon, MD, FDA, Silver Spring, MD

3:45pm - 5:00pm PEDIATRIC 1 : Short-Term MCS Bridge Debate

3:45pm-3:55pm Impella Devices

Melissa Webb, MD, University of Chicago, Chicago, IL

3:55pm-4:05pm PediMag

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

4:05pm-4:15pm Rotaflow

Angela Lorts, MD, Cincinnati Children's Hospital, Cincinnati, OH

4:15pm-4:25pm ECMO Is Best

Ravi Thiagarajan, MBBS, MPH, Boston Children's Hospital, Boston, MA

4:25-4:30pm Discussion

4:30pm-5:00pm Pediatric Abstracts

#97 Stretchable Electronic Conformal Skin-adherent Wearable Patches: a Novel Method for Wireless Patient Monitoring

Jason Goldberg, MD, University of Arizona, Tucson, AZ

4:45pm-5:00pm #259 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

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 ASAIOfyi - for young innovators - Rapid Fire Presentations

8:00am - 8:05am #146 RAS-Q - A Novel Passive Right Heart Assist System

Tim Kaufmann, PhD, RWTH Aachen University, Aachen, NRW, Germany

8:05am-8:10am #187 Using Compliant Oxygenators to Improve Flow Conditions in Pulsatile ECMO Circuit

Ralf Borchardt, PhD, emmodes GmbH, Aachen, NRW, Germany

8:10am-8:15am #120 The Influence of Anastomosis Angle of Outflow Graft to Aorta on Hemodynamics of Aortic Valve Regurgitation in Left Ventricular Assist Device Support

Kei Iizuka, MD, National Cerebral & Cardiovascular Center, Suita, Osaka, Japan
#151 Effect of Eccentricity in a Blood Shearing Device Using Transient CFD Analysis
Peng Wu, PhD, Soochow University, Suzhou, Jiangsu, China

#181 Large Eddy Simulation and Hemolysis Estimation of the FDA Nozzle Model
Peng Wu, PhD, Soochow University, Suzhou, Jiangsu, China

ASAIOfyi - for young innovators - Student Design Competition Presentations

9:30am - 10:15am

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

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

Visit Exhibits & Posters

11:00am-12:00pm

GENERAL SESSION 2 - Continued

ASAIO History Group
Scientific Biography of William S Pierce, MD
Gerson Rosenberg, PhD, Penn State College of Medicine, Hershey, PA

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-1:30pm

Lunch Break

1:30pm-3:00pm

CARDIAC 3 - Acute Temporary Support

Panelists:
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

#73 ICU Sequential Organ Failure Assessment (SOFA) Score Improves Risks Prediction Accuracy for Durable LVAD Recipients
Subhasis Chatterjee, MD, Baylor College of Medicine, Houston, TX

#124 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

#276 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 Jayaram, PhD, PT, Rehabilitation Institute of Chicago, Chicago, IL

1:30pm-1:40pm
Mobility Exoskeletons, Robots: Artificial Organs Too!
Marvin J. Slepian, MD, University of Arizona, Tucson, AZ

1:40pm-1:55pm
Exoskeletons & Augmentation Systems - Present and Emerging Technology and Applications
Tom Sugar, PhD, Arizona State University, Mesa, AZ

1:55pm-2:10pm
The Hidden Mechanics of Human Locomotion and Relevance to Wearable Robots
Elliott J. Rouse, PhD, Rehabilitation Institute of Chicago, Chicago, IL

2:10pm-2:25pm
Medical and Rehab Applications of Exoskeletons and Robotics
Arun Jayaram, PhD, PT, Rehabilitation Institute of Chicago, Chicago, IL

2:25pm-2:40pm
Funding Opportunities and Commercialization of Robotics and Mobility Systems
### VAD 2 Shark Tank

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

- **a. VAD Equipment Management**
  Kathleen Schultz, BSBME, MBA, Aurora St. Luke's Medical Ctr, Milwaukee, WI
- **b. Sustainable Staffing Models**
  Teresa Buena, DNP, MSN, Memorial Regional Hospital, Hollywood, FL
- **c. Keeping Rehab, SNF and Dialysis Centers Ready to Receive**
  Carole Ballew, MSN, UVA, Charlottesville, VA
- **d. Self Care Management Model**
  Jessie Casida, PhD, RN, University of Michigan, Ann Arbor
- **e. Efficacy of a Thrombus Management Protocol**
  *Mary Bradbury, PharmD, Inova Fairfax Hospital, Falls Church, VA
- **f. Importance of Understanding Why Patients Refuse DT LVAD**
  Matthias Loebe, MD, PhD, Miami Transplant Institute, Miami, FL
- **g. Outpatient Rehabilitation of VAD Patients & Monitoring Daily Life Activity**
  Thomas Schloeglhofer, BSc, Medical University of Vienna, Vienna, Austria
- **h. Orientation/Education of Team Members**

### PULMONARY 3-Bioartificial Lungs

**Chairman:** Bryan Whitson, MD, PhD, Ohio State University, Columbus, OH

1:30pm-1:45pm
- Donfang 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-2:30pm
- **Pulmonary Abstracts**
  #54 Low Resistant Respiratory Assist System for Paracorporeal Lung Support: an in-vivo Study
  Ralf Borchardt, PhD, enmodes GmbH, Aachen, NRW, Germany

2:30pm-2:45pm
- **#165 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
- **#144 A CFD Model to Predict Oxygen Transfer in Artificial Lungs**
  Andreas Kaesler, Dipl.-Ing, RWTH University Aachen, Aachen, Germany

### RENAL 3-Quantum Leaps: From Biology to Technology to Clinical Care

- **Living Membranes**
  Patricia Dankers, Eindhoven

- **Microfluidic Diagnostics**
  Ian Papautsky, University of Illinois, Chicago, IL

- **Bioengineered Organs**
  Jason Wertheim

2:30pm-3:00pm
- **Renal Abstracts**
  #71 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
- #180 Update on Continuous Electrolyte and pH Monitoring
  Fokko Wieringa, PhD, Wearable Health Solutions, Eindhoven, Netherlands

### PEDIATRIC 2: ECMO

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**
  Fernando Aguel, MS, 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**
  #147 Temporary Ventricular Assist Devices as a Bridge to Transplantation: Assessing the Impact of an Evolving Strategy
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| 2:34pm-2:46pm | #194 Development Update on the Ension pCAS System  
Mark Gartner, PhD, MBA, Ension Inc., Pittsburgh, PA |
| 2:46pm-2:58pm | #25 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 & 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 |
| 3:45pm-5:00pm | CARDIAC Abstracts  
#251 Bridging to Heart Transplantation (BTT) in Superagenarians with LVADs  
Eugene DePasquale, MD, Ronald Reagan UCLA Medical Center, Buena Park, CA |
| 3:45pm-5:00pm | BIOENGINEERING 4  
Chairman: Peter Wearden, MD, PhD, Nemours Children’s Hospital, Orlando, FL |
| 3:45pm-4:15pm | Managing the Future of Cardiovascular Imaging in Children  
Rajesh Krishnamurthy, MD, Nationwide Children’s Hospital, Columbus, OH |
| 4:15-4:45pm   | Falling in Love With Your Own Technology! Pros, Cons and Hitchhiking  
Kurt Dasse, PhD |
| 4:45pm-5:00pm | Discussion                                                                                         |
| 3:45pm-5:00pm | PULMONARY 4 - ELCS and Big Data: Driving Innovation and Outcome  
Chairman: 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 University Hospital, Atlanta, GA  
Ryan Barbara, University of Michigan, Ann Arbor, MI |
| 4:15pm-4:30pm | Steven Conrad, MD, PhD, Louisiana State University HCS, Shreveport, LA |
| 4:30pm-4:45pm | 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  
Michael Allon |
| Biology Of Vascular Access Dysfunction  
Prabir Roy-Chaudhury, MD, PhD, University of Arizona, Tucson, AZ |
| Novel Therapies for Vascular Access Dysfunction  |
| Clinical trials In Vascular Access: Time For A Change  
Laura Dember |
| Patient Perspectives on Vascular Access: Not to Be Forgotten  
Terry Foust Litchfield, Lifeline, Vernon Hills, IL |
| Discussion                                                                                      |
| 3:45pm-5:00pm | PEDIATRIC 3: Beyond Bridge to Transplant  
Destination Therapy  
Christopher Almond, MD, MPH, Stanford University, 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                                                                     |
# MEDICAL DEVICE ENTREPRENEUR'S FORUM

**Chairman:** David Humes, MD, University of Michigan, Ann Arbor, MI

Proposals Due Monday, March 20, 2017

## ADULT ECMO COURSE

**Course Director:** Aly El Banayosy, MD, INTEGRIS Baptist Med Ctr, Oklahoma City, OK

## SESSION I

8:10am-8:30am  
**ELSO Report**  
_Heidi Dalton, Inova, Fairfax, VA_

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  
**Inflammatory Response in Adult ECMO Patients**

9:10am-9:40am  
**What Is in the Pipeline?**  
_Martin Strueber, Grand Rapids_

9:40am-10:00am  
**Panel Discussion**

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

## SESSION II

10:15am-10:35am  
**Approaching Cardiogenic Shock Patients Beyond Medical Management: Which Way to Go?**  
_Aly El Banayosy, MD, INTEGRIS Baptist Medical Ctr, Oklahoma City, OK_

10:35am-10:55am  
**Impact of New Technology on Complications Profile**  
_Chris Bermudez, MD, Hospital of th University of Pennsylvania, Philadelphia, PA_

10:55am-11:15am  
**Data from Oklahoma ECMO Network Model**  
_Karl Nelson, RN, MBA, INTEGRIS Baptist Medical Ctr, Oklahoma City, OK_

11:15-11:35am  
**Transition from ECMO to Durable MCS Devices: Long-Term Results**  
_Behzad Soleimani, Penn State Hershey Medical CTR, Hershey, PA_

11:35am-12:00pm  
**Panel Discussion**

12:00-1:10pm  
**Lunch Break**

## SESSION III

1:10pm-1:30pm  
**Quality Measures for ECMO Programs**  
_Jonathan Haft, MD, University of Michigan, Ann Arbor, MI_

1:30pm-1:50pm  
**Difficult Cannulation: Tips and Tricks**  
_Ali Ghodsiizad, Miami Transplant Institute, Miami, FL_

1:50pm-2:10pm  
**rECMO: Programming Challenge and Clinical Results**  
_Christoph Brehm, MD, Penn State Hershey Medical Ctr, Hershey, PA_

2:10pm-2:30pm  
**ECMO Beyond Your Imagination**  
_Michael Koerner, MD, PhD, INTEGRIS Baptist Medical Ctr, Oklahoma City, OK_

2:30pm-2:45pm  
**Panel Discussion**

2:45pm-3:00pm  
**Break**

## SESSION IV

3:00pm-3:20pm  
**ARDS: Lessons Learnt from Recent Trials**  
_J. Plum_

3:20pm-3:40pm  
**VV ECMO in ARDS Patients: Excellent Outcomes**

3:40pm-4:00pm  
**Prone vs VV ECMO Trial in ARDS Patients: Are We There Yet?**  
_Daniel Brodie, MD, Columbia University Medical Ctr, New York, NY_

4:00pm-4:20pm  
**Screening and Infection Management in Adult ECMO Patients**
Allison Nazinitsky, MD
4:20pm-4:40pm
Role of ECMO in Organ Donation
Christopher Wigfield, University of Chicago, Chicago, IL
4:40pm-4:55pm
Panel Discussion
4:55pm-5:00pm
Closing Remarks

8:30am-10:00am
CARDIAC 5-Debate-VADS: Finances, Cost of Therapy, and VADs
Co-Chairs:
Ashish Shah, MD, Vanderbilt University Medical Ctr, Nashville, TN
Jonathan Haft, MD, University of Michigan, Ann Arbor, MI

8:30am-8:50am
Pro: VADS Is a Cost-Effective Therapy
Andrew Sauer, MD, University of Kansas Hospital, Kansas City, KS

8:50am-9:10am
Con: Our Community May Have to Limit VAD Therapy
Keith Aaronson, MD, University of Michigan, Ann Arbor, MI

9:15am-10:00am
Cardiac Abstracts
#152 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

#256 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

#136 Left Ventricular Assist Devices; How Do We Define Success?
Anwer Lucman, MD, Mayo Clinic, Rochester, MN

8:30am-10:00am
BIOENGINEERING 5 - Abstracts
#125 Contribution of Computational Model for Heart Tissue Local Stress Caused by Suture in VAD Implantation
Antoine Chalon, Université de Lorraine, Nancy, France

#284 Material Hemocompatibility Testing for Improved Blood-contacting Device Design
Trevor Snyder, PhD, VADovations, Oklahoma City, OK

8:30am-10:00am
PULMONARY 5
Chairman: Donfang 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-1:00am
Pulmonary Abstracts
#66 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

#218 Short Term in vivo Evaluation of Nitric Oxide Generating Artificial Lung in Sheep
Angela Lai, BS, Carnegie Mellon University, Pittsburgh, PA

8:30am-10:00am
RENAL 5- Patient Preferences in Kidney Disease: If Not Now When...
Co-Chairs:
Gema Gonzales, MS, FDA, Silver Spring, MD
Shuvo Roy, PhD, University of California San Francisco, San Francisco, CA

The Science Of Measuring Patient Preferences
John Bridges

First Things First
Fokko Wieringa, PhD, Wearable Health Solutions, Eindhoven, Netherlands

Patient Driven Clinical Research
8:30am-10:00am  PEDIATRIC 4 - Mechanical Support of Single Ventricles

8:30am-8:50am  Failing Fontan Pump
   Amy Throckmorton, PhD, Drexel University, Philadelphia, PA

8:50am-9:10am  Improving Fontan Circulation
   Richard Figliola, PhD, PE, Clemson University, Clemson, SC

9:10am-10:00am  Pediatric Abstracts

9:10am-9:22am  #133 Use of Hemodynamic Ramp Test to Optimize Continuous-flow Assist Device in a Fontan Patient
   Peter Chau, MD, University of Michigan, Ann Arbor, MI

9:22am-9:46am  #237 Pediatric Ventricular Assist Device Therapy for End-staged Heart Failure:
   a Contemporary Ten Year Experience
   Mahesh Sharma, MD, University of Pittsburgh Medical Center, Pittsburg, PA

9:46am-9:58am  #203 Fontan Simulation Using MCS Training Platform
   Richard Smith, MSEE, CCE, Banner University Medical Center, Tucson, AZ

10:00am-10:45am  Enjoy Refreshments

10:45am-12:00pm  Cardiac 6 - Debate - VADs: Total Artificial Heart (TAH), Continuous-Flow Biventricular Support or Heart Transplant
   Co-Chairs:
   William Cohn, MD, Texas Heart Institute, Houston, TX
   Yoshifumi Naka, MD, PhD, Columbia University, New York, NY

10:45am-11:05am  Pro: Durable Mechanical Circulatory Support Should Be Favored for Most Indications
   Francisco Arabia, MD, Cedars-Sinai Medical Center, Los Angeles, CA

11:05am-11:25am  Con: Heart Transplantation Should Be the Primary Strategy for Most Indications
   Randy Starling, MD, MPH, Cleveland Clinic, Cleveland, OH

11:55am-12:00pm  Discussion

10:45am-12:00pm  BIOENGINEERING 6 - Abstracts

10:45am-11:00am  #51 Downsizing of Bidirectional Self-expanding Arterial Cannula Designs
   Saad Abdel-Sayed, PhD, Cardiovascular Research Center, Lausanne, Vaud, Switzerland

11:00am-11:15am  #286 Development of a Miniaturized Heart Assist Device with Interchangeable Hydraulics of a Miniaturized Heart Assist Device with Interchangeable Hydraulics
   J. Ryan Stanfield, PhD, VADovations, Oklahoma City, OK

11:15am-11:30am  #32 Analysis of the Effect of Component Elements of Hemodynamic Shear Stress Profiles on Shear-mediated Platelet Activation in Cardiovascular Implantable Therapeutic Devices
   Filippo Consolo, PhD, Università Vita Salute, Milano, Italy

11:30am-11:45am  #210 Ex vivo Pathological Platform for Vascular Device Testing
   Noemi Vanerio, Eindhoven, Netherlands

11:45am-12:00pm  #238 Variable-length Trajectory Sequences and Field-oriented Control to Efficiently Produce Arbitrary Pulsatile Output on Mechanical Circulatory Support Pumps
   Barry Kuban, BSEE, Cleveland Clinic, Cleveland, OH

10:45am-12:00pm  PULMONARY 6: Mechanical Treatment of PH & RV Failure:
   Impella, Tandem, Nova Lung
   Chairman: Harold Ott, MD, Harvard Medical School, Boston, MA

10:45am-11:05am  Navin Kapur, MD, Tufts Medical Ctr, Boston, MA
11:05am-11:25am  Erik Osborn, MD, Ft. Belvoir Hospital, Ft. Belvoir, VA
11:25am-11:45am  Christian Bermudez, MD, Hospital of the Univ of Pennsylvania, Philadelphia
11:45am-12:00pm  Panel Discussion

10:45am-12:00pm  RENAL 6 - Abstracts
10:45am-11:00am  #164 The Influence of Catheter Design on Convection-dominated Heparin Leakage
Michael Barbour, MS, University of Washington, Seattle, WA

11:00am-11:15am  #79 Centrifugal Separator for Implantable Artificial Kidney
Koki Ariyoshi, BS, University of Tokyo, Tokyo, Japan

11:15am-11:30am  #55 Bioactive Supramolecular Polymer Materials for Renal Membrane Bioengineering
Ronald van Gaal, Eindhoven University of Technology, Eindhoven, Netherlands

11:30am-11:45am  #84 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  #216 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

**Biomedical Application of Decellularized Tissues**
Akio Kishida, Tokyo, Japan - representing JSAO

**Effectively Increasing Safety and Survival of VAD Patients**
Heinrich Schima, PhD, Medical University of Vienna, Vienna, Austria - representing ESAO

8:00am - 3:00pm  **ASAIO / ICCAC MCS Proficiency Verification Courses (6)**
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.

Highlights of the Course include:
1) A minimum of 8 small group (maximum 12 participants each) problem-based scenarios covering management and troubleshooting of common issues surrounding MCS devices
2) Small groups exercises are led by experienced MCS coordinators, Heart Failure Cardiologists, and Cardiac Surgeons who specialize in MCS Support
3) Devices covered in the scenarios include:
   - HVAD
   - HeartMate II and HeartMate 3
   - Centrimag
   - Impella
   - Berlin Heart Excor
   - Syncardia TAH