




Science, Medicine and Industry
Innovating  for the Future.



PROGRAM

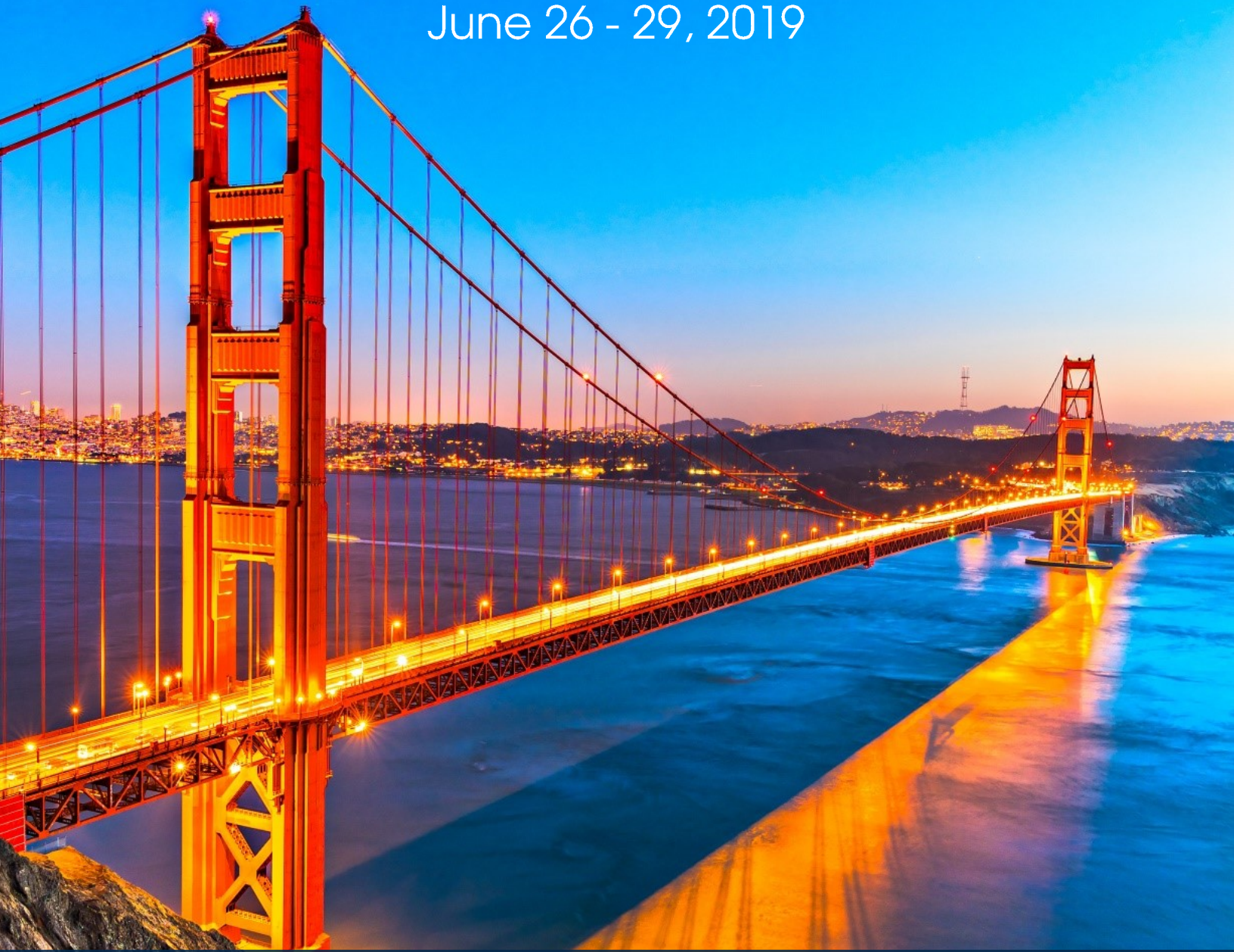
ASAIO 64th Annual Conference – Washington, DC

“Turning Ideas Into Solutions Through Innovation”

June 13 – 16, 2018

ASAIO 65TH ANNUAL CONFERENCE SAN FRANCISCO

June 26 - 29, 2019



www.ASAIO.com

- Committees
- Calendar
- Exhibits
- Abstracts
- Accreditation
- Dates and Deadlines
- Sponsorship Opportunities
- Previous Conference Programs
- Membership in ASAIO
- ASAIO Journal
- Manuscript Submission
- Online Journal Access for Members



ASAIO Headquarters
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ACCREDITATION

Physicians | Nurses

CERTIFICATION

All those who complete a course evaluation will receive a certificate of credit from the University of Massachusetts Medical School Office of Continuing Education. Each person should claim only those hours of credit that he/she actually spent in the educational activity. The link to the online course evaluation will become available closer to the conference date at www.asaio.com under "Annual Conference". For all CME certificate inquiries, please contact the UMMS-OCME via email at ConEd@Umassmed.edu.

CME ACCREDITATION STATEMENT

This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education through the Joint Providership of The University of Massachusetts Medical School and ASAIO. The University of Massachusetts Medical School is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

ASAIO DESIGNATION STATEMENT

The University of Massachusetts Medical School designates this live educational activity for a maximum of 24.5 AMA PRA Category 1 Credits™. Physicians should claim only credit commensurate with the extent of their participation in the activity.

Nursing

This activity meets the requirements for 29.4 contact hours for nurses as specified by the Massachusetts Board of Registration in Nursing (244-CMR 5.04). Each nurse should claim only those hours of credit that he/she actually spent in the educational activity.

Pediatric Medical Device Day DESIGNATION STATEMENT

The University of Massachusetts Medical School designates this live educational activity for a maximum of 5.5 AMA PRA Category 1 Credits™. Physicians should claim only credit commensurate with the extent of their participation in the activity.

Nursing

This activity meets the requirements for 6.6 contact hours for nurses as specified by the Massachusetts Board of Registration in Nursing (244-CMR 5.04). Each nurse should claim only those hours of credit that he/she actually spent in the educational activity.

MCS/VAD University DESIGNATION STATEMENT

The University of Massachusetts Medical School designates this live educational activity for a maximum of 9 AMA PRA Category 1 Credits™. Physicians should claim only credit commensurate with the extent of their participation in the activity.

Nursing

This activity meets the requirements for 10.8 contact hours for nurses as specified by the Massachusetts Board of Registration in Nursing (244-CMR 5.04). Each nurse should claim only those hours of credit that he/she actually spent in the educational activity.

ASAIO-ELSO ECMO Workshop DESIGNATION STATEMENT

The University of Massachusetts Medical School designates this live educational activity for a maximum of 4.25 AMA PRA Category 1 Credits™. Physicians should claim only credit commensurate with the extent of their participation in the activity.

Nursing

This activity meets the requirements for 5.1 contact hours for nurses as specified by the Massachusetts Board of Registration in Nursing (244-CMR 5.04). Each nurse should claim only those hours of credit that he/she actually spent in the educational activity.

ICCAC MCS Proficiency Verification DESIGNATION STATEMENT

The University of Massachusetts Medical School designates this live educational activity for a maximum of 5 AMA PRA Category 1 Credits™. Physicians should claim only credit commensurate with the extent of their participation in the activity.

Nursing

This activity meets the requirements for 6 contact hours for nurses as specified by the Massachusetts Board of Registration in Nursing (244-CMR 5.04). Each nurse should claim only those hours of credit that he/she actually spent in the educational activity.

ACCREDITATION FOR PERFUSIONISTS

The American Board of Cardiovascular Perfusion will allot Category 1 CEUs to those Perfusionists who attend the Conference with a **Total Possible of 31.7**.

Participants must sign in once daily to verify attendance. A photo ID is required for participants to obtain registration materials. On the first day, pick up a Session Evaluation Worksheet. Keep this Evaluation Worksheet for the duration of the Conference and fill it in for every session you attend. Return your completed Session Evaluation Worksheet to the ASAIO Registration Desk on the last day of your attendance.

Diamond Level

Medtronic

Gold Level

Abbott

Bronze Level

Berlin Heart

ClearFlow

Evaheart

Fresenius Medical Care NA

**Additional Educational
Grants**

MC3

ASAIO Y Nosé International Fellowship

Sponsored by the Y Nosé Fellowship Fund

Thomas Schlöegelhofer, BSc

Medical University of Vienna, Vienna, Austria

Driveline Infections Following Left Ventricular

Assist Device Implantation:

Differences Between Three Contemporary

Device Types

Page 15

ASAIOfyi – for young innovators

Fellowships

Sponsored by the Paul S Malchesky Fellowship Fund

Andre Critsinelis, BS, BA

Baylor College of Medicine, Houston, TX

Effects of Continuous Flow Left Ventricular Assist Devices

On Long-Term Kidney Function

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Rei Ukita, BSBE

Carnegie Mellon University, Pittsburgh, PA

A Low-Cost, High-Throughput Methodology for Assessing

Anticoagulants and Surface Coatings for Artificial Lungs

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ASAIO BOARD OF TRUSTEES

June 25, 2017 - June 16, 2018



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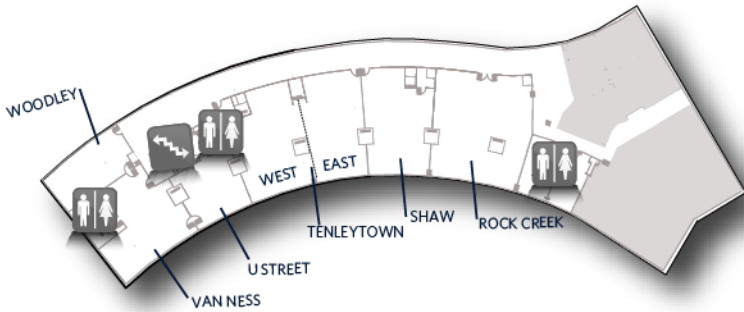
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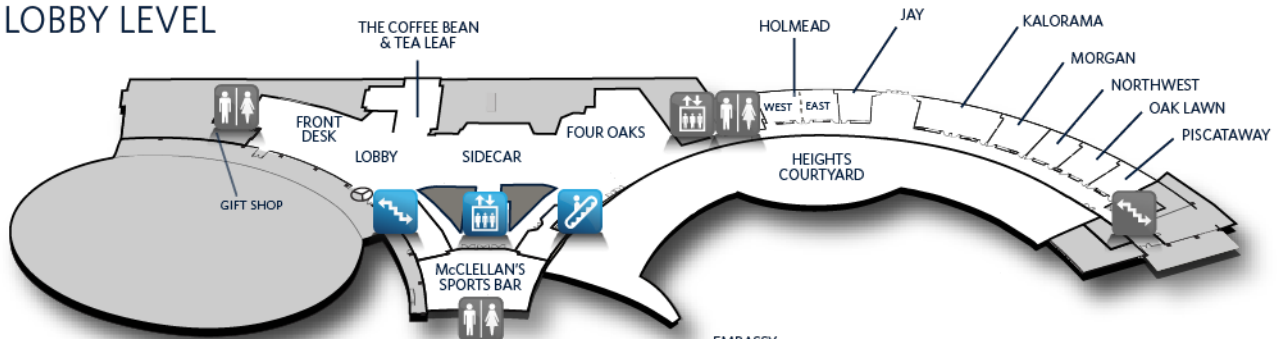
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ASAI0 64th Annual Conference Washington Hilton - Floor Plan

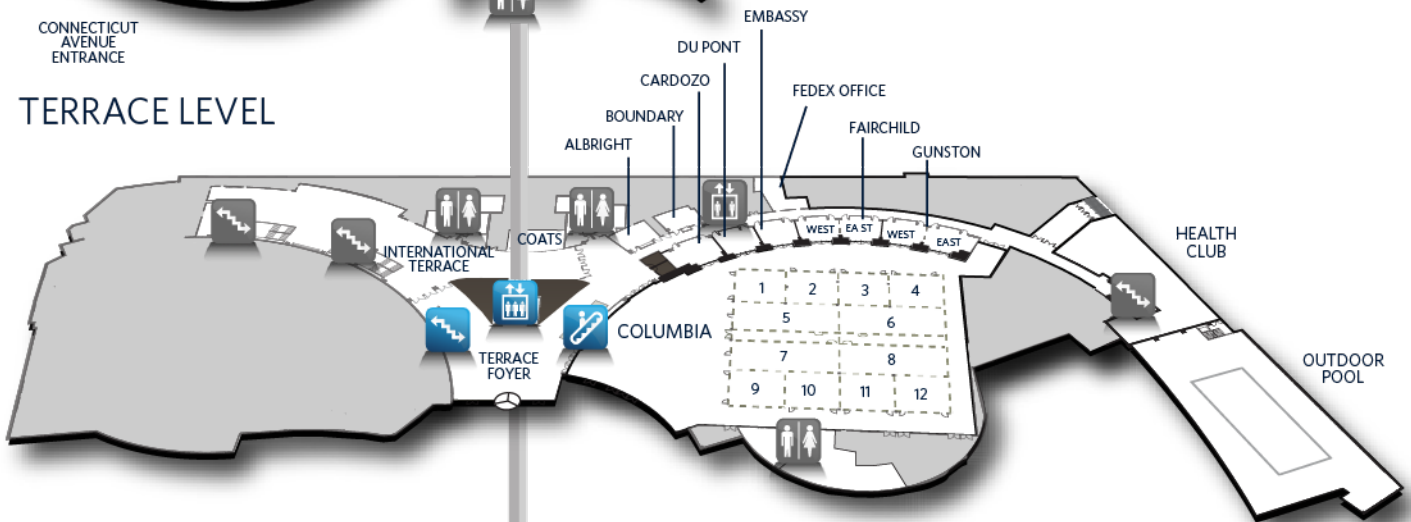
FIRST FLOOR MEETING SPACE



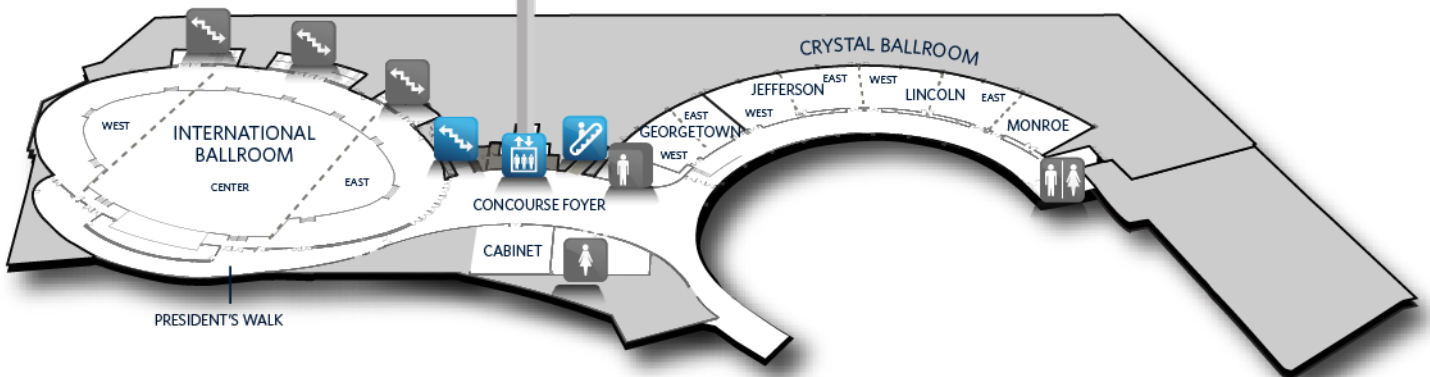
LOBBY LEVEL



TERRACE LEVEL



CONCOURSE LEVEL



ASAIO EXHIBITORS



Abbott
Austin, Texas
Booth 104

At Abbott, we're committed to helping you live your best possible life through the power of health. For more than 125 years, we've brought new products and technologies to the world — in nutrition, diagnostics, medical devices and branded generic pharmaceuticals — that create more possibilities for more people at all stages of life. Today, 94,000 of us are working to help people live not just longer, but better, in the more than 150 countries we serve.

Connect with us at www.abbott.com, on Facebook at www.facebook.com/Abbott and on Twitter [@AbbottNews](https://twitter.com/AbbottNews) and [@AbbottGlobal](https://twitter.com/AbbottGlobal).



Alere Home Monitoring
Livermore, CA
Booth 108

The comprehensive Alere VADCare® Program helps you carefully and efficiently manage your patients after discharge to reduce the risk of hospital readmission. Alere fully supports the transition of VAD patients from hospital to home. Patients receive all of the necessary equipment and wound care supplies they need to take care of their VAD equipment and driveline exit site. Additional services through the Alere VADWatch® program include home INR monitoring; weight and blood pressure management; and tracking of VAD metrics in the Alere VADWatch® Data Management application.



Berlin Heart Inc
The Woodlands, Texas
Booth 100

Berlin Heart, the only company worldwide, that develops, manufactures and distributes VADs for patients of every age and body size. EXCOR® Pediatric provides medium to long-term circulatory support specifically for infants and children awaiting heart transplants. EXCOR Pediatric is approved for use in the USA under HDE regulations by FDA.



ActiCare Health
Livermore, California
Booth 105

ActiCare Health – the next-generation DME – offers the only VAD+transplant tele-health and advanced monitoring platform with 24x7 support, empowering patients and clinicians to achieve remarkable outcomes with reduced stress. In response to the immense administrative and operational challenges faced by VAD and transplant departments, we've designed the only program recognized by accrediting organizations to provide enhanced visibility into patients' health status, completely modernize patient safety and patient-provider communication, optimize discharge plan adherence, and minimize adverse clinical and financial events. Our program is designed to positively affect health outcomes and quality of life, improve care coordination and staff efficiency, and reduce costs.



ASAIO Journal
Published by Wolters Kluwer
Philadelphia, PA
Booth 103

Wolters Kluwer is a leading global provider of information and point of care solutions for the healthcare industry. Our solutions are designed to help professionals build clinical competency and improve practice so they can make important decisions on patient care. We offer evidence-based medical, nursing and allied health content and clinical decision support tools; drug information and patient surveillance; structured documentation and coding; precision medical research tools; and continuing medical education solutions. Our leading product brands include Audio-Digest, Lippincott, Ovid®, UpToDate®, and others.



EvaHeart, Inc.
Houston, Texas
Booth 109

The EVAHEART Left Ventricular Assist System (LVAS)™ is a continuous-flow, hydraulically levitated centrifugal pump designed to support patients with end-stage heart failure as bridge-to-transplant therapy. The EVAHEART LVAS has been commercially available in Japan since 2010, and has successfully obtained CE marking approval. Evaheart, Inc. (EVI) is a medical device company based in the Texas Medical Center of Houston. EVI was established to gain regulatory approval and commercialize the EVAHEART LVAS in North America and to start distribution in Europe. Under an FDA-approved IDE, a bridge-to-transplant (BTT) clinical trial of the EVAHEART LVAS is ongoing in the US.



Getinge Group
Wayne, New Jersey
Booth 113

Getinge is a leading global provider of innovative solutions for operating rooms, intensive-care units, hospital wards, sterilization departments and for life science companies and institutions. From now on, names you already know like Maquet, Lancer, Atrium, Pulsion, Datascope, Steritec, Getinge, Stericool and Trans will be working even closer together under one brand, Getinge. Our job is to simplify your workflow and raise the bar in terms of how efficient, safe and productive you and your colleagues can be. Getinge offers innovative healthcare solutions that improve every-day life for people, today and tomorrow.



Jarvik Heart, Inc.
New York, New York
Booth 102

Jarvik Heart, Inc. is a privately held, New York City based company that develops, manufactures and sells unique cardiac assist devices for the treatment of severe heart failure. The Jarvik 2000 is a battery- powered axial-flow left ventricular assist device (LVAD). It is the smallest implantable blood pump available* for the long-term treatment of Heart Failure. The New Jarvik 15mm VAD has been designed for pediatric and small patients and will enter clinical trials in the USA and EU in 2018.

*Jarvik 2000 available, in US, only in FDA clinical trial.



NxStage Medical
Lawrence, Massachusetts
Booth 117

NxStage is changing the face of Renal Replacement Therapy in the ICU. Our Device is used for patients requiring Renal Replacement Therapy in the ICU:

- CRRT
 - Transitional patients
 - In lieu of Intermittent Hemodialysis
- We will have our device as well as disposables in the booth



Haemonetics
Braintree, Massachusetts
Booth 115

Haemonetics THE Global Leader in Blood Management Solutions. Our comprehensive portfolio of devices, information management, and consulting services offers blood management solutions for each facet of the blood supply chain — from plasma and blood collectors to hospitals. We believe that through proper blood management, our portfolio of products and services helps to prevent a transfusion for the patient who doesn't need one and provides the right blood product, at the right time, in the right dose to the right patient who does.



Medtronic
Framingham, Massachusetts
Booth 111

Medtronic MCS is committed to continuous learning and innovation, to further advance the treatment of end-stage heart failure. We strive to improve patient outcomes and the clinical experience of your practice. Stop by the Medtronic booth to learn more and to see the latest HeartWare™ HVAD™ System enhancements.



Orthodynamics Company, Inc.
Noblesville, Indiana
Booth 119

Orthodynamics Company Inc. (ODI) ODI is an industry leader in outsourcing of Mechanical Circulatory Support (MCS) outpatient equipment and supplies. We represent all three FDA approved VAD/ MCS devices as well as all major wound care suppliers. This offering, accompanied with our VADTracSM Solution (proprietary equipment management software), has allowed ODI, to develop a national network built on strategic alliances with insurance carriers, hospitals, and clinicians., providing VAD/MCS Coordinators and hospitals a solution so they can focus on what they do best! Providing patients with a high level of care and service, while getting them the equipment and supplies they need, when they need it, is our strength and what we do best! For more information, visit <http://www.od-inc.com>



SynCardia Systems, LLC
Tucson, Arizona
Booth 106

The SynCardia temporary Total Artificial Heart (TAH-t), the world's most used artificial heart, is now available in two sizes to serve more patients. The 70cc TAH-t is FDA, Health Canada and CE approved as a bridge to transplant for patients with end-stage biventricular failure. The smaller 50cc TAH-t, approved in Europe and Canada and undergoing an Investigational Device Exemption clinical study in the U.S., is designed for patients of smaller stature, including women and adolescents. Stable patients can be discharged to wait for a matching donor heart at home using the Freedom® portable driver. Visit our booth to learn more.



TandemLife
Pittsburgh, Pennsylvania
Booth 121

One Pump. Massive Potential. TandemLife (formerly, CardiacAssist, Inc.) exists to deliver Life Support Simplified, with one small pump enabling any type of extracorporeal circulatory support your patients may need. The TandemHeart pump was the driving force behind the world's first percutaneous left heart support system. We've added on to this legacy of innovation by developing three new product lines with the same reliability you've come to expect; TandemLife, TandemLung, and Protek Duo. Visit us to learn how we can empower your program to deliver breakthrough performance in extracorporeal support.



Transonic
Ithaca, New York
Booth 107

Transonic
The Measure of Better Results from Bench to Bedside

Cutting Edge Clinical Systems for:

- Recirculation and Oxygenator Clotting Measurements during ECMO
- Cardiac Output and Blood Volumes in Infants
- Gold Standard Vascular Access Surveillance Tools for Hemodialysis
- Direct Flow Measurement for Anastomotic Patency

Gold Standard Life Science Research Solutions for:

- Perivascular & Tubing Flow Measurements for Every Application
- Pressure Volume Measurements with Admittance Technology
- Implantable Telemetry for Flow, Pressure & ECG

Transonic Inside OEM Products for:

- Custom flow solutions integrated into medical devices
- VADs
- Organ Perfusion and Preservation
- Artificial Hearts
- And so much more...



ICAOT
Painesville, Ohio

The International Center for Artificial Organs & Transplantation is organized to maintain and operate an educational center. It supports the International Center for Medical Technologies Museum, manages the publication of Artificial Organs and Therapeutic Apheresis & Dialysis. It disseminates information on the historical development, current state of the art and future development of artificial organs.



VentriFlo™ True Pulse Pumps
Design Mentor, Inc.
Pelham, New Hampshire
Booth 101

Research demonstrates that physiologic blood flow improves systemic perfusion while reducing complication frequency and severity. Pulsatile blood flow improves microcirculation and better supports renal, ventricular, and end-organ function leading to superior patient outcomes. In 2017, researchers concluded: "The VentriFlo... is the first blood pump designed to mimic the human heartbeat by recreating adjustable pulse waveforms, ... provid[ing] a biomimetic heartbeat." With applications in extracorporeal support including ECMO and CPB, the VentriFlo True Pulse Pump, (in development), is poised to replace current continuous flow pumps, improve perfusion, reduce complications, shorten patient stays, and save hospitals money by reducing readmissions.

ASAIO PROGRAM OUTLINE

WEDNESDAY, JUNE 13, 2018

8:30am – 4:30pm **ASAIO 7th Annual Pediatric Medical Device Day – Columbia Hall 7 – Terrace Level**
8:00am – 5:00pm **MCS / VAD University – Columbia Hall 5 – Terrace Level**
6:00 – 9:00pm **ICCAC 11th Annual Meeting – Cabinet Room – Concourse Level**

THURSDAY, JUNE 14, 2018

7:45am – 12:30pm **General Session 1 – Columbia Hall 5-8 – Terrace Level**
Top Abstracts | President's Address | KHI | Medical Device Entrepreneur's Forum
Fellowships and Award Announcements

12:30 – 1:30pm Lunch Break

1:30pm – 3:00pm **Cardiac 1 – Acute Heart Failure... – Columbia Hall 5-8 – Terrace Level**
Bioengineering 1 – Design Innovation and Optimization – Columbia Hall 9-12 – Terrace Level
Pulmonary 1 – Advances in Surgical Treatment of Respiratory Failure – IBR East – Concourse Level
Renal 1 – KHI Update – Fairchild – Terrace Level
Nursing Abstracts – Gunston – Terrace Level

3:00 – 3:45pm **Visit Exhibits & Posters – Enjoy Refreshments – Columbia – Terrace Level**

3:45 – 5:00pm **Cardiac 2 – Rise of the Machines... – Columbia Hall 5-8 – Terrace Level**
Bioengineering 2 – Hemolysis and Thrombosis – Columbia Hall 9-12 – Terrace Level
VAD 1 – Lessons from the Wizard of Oz – Monroe – Concourse Level
Pulmonary 2 – The Value of Pulmonary Extracorporeal Support – IBR East – Concourse Level
Renal 2 – Traditional Technology Applied in Novel Ways – Fairchild – Terrace Level
Pediatric 1 – ...When All Organs Fail, What Do We Do? – Gunston – Terrace Level

6:00 – 7:00pm **ASAIO Welcome Reception – Columbia Hall**

FRIDAY, JUNE 15, 2018

8:00am – 12:30pm **General Session 2 – Columbia Hall 5-8 – Terrace Level**
ASAIOfyi Rapid Fire | ASAIOfyi Student Design Competition | ASAIO Hastings Lecture
Discussion with ASAIO Pioneers | Keynote Addresses

12:30 – 1:30pm Lunch Break

1:30 – 3:00pm **Cardiac 3 – Optimizing Outcomes in Patients with Durable ... – Columbia Hall 5-8 – Terrace Level**
Bioengineering 3 – Sensors and Pump Control... – Columbia Hall 9-12 – Terrace Level
VAD 2 – Shark Tank – Monroe – Concourse Level
Pulmonary 3 – Epidemiology of ECMO for Respiratory Support – Lincoln East – Concourse Level
Renal 3 – Blood Vessel Innovation – Fairchild – Terrace Level
Pediatric 2 – Overcoming the Limits of Design – Gunston – Terrace Level

1:30 – 2:30pm **IFAO Session – Shaw – First Floor**

3:00 – 3:45pm **Visit Exhibits & Posters – Enjoy Refreshments – Columbia – Terrace Level**

3:45 – 5:00pm **Cardiac 4 – The Future of MCS Therapy... – Columbia Hall 5-8 – Terrace Level**
Bioengineering 4 – Bleeding and von Willebrand Factor – Columbia Hall 9-12 – Terrace Level
Pulmonary 4 – Permanently Implantable Respiratory Support – Lincoln East – Concourse Level
Renal 4 – Minimally Invasive Techniques – Fairchild – Terrace Level
Pediatric 3 – Pearls and Perils of Supporting Single Ventricles – Gunston – Terrace Level

5:15 – 5:45pm **ASAIO Member Business Meeting – Kalorama - Lobby Level**

ASAIO PROGRAM OUTLINE (continued)

SATURDAY, JUNE 16, 2018

- 8:00am – 12:30pm** **ELSO Course – Columbia Hall 1-2 – Terrace Level**
- 8:00am – 1:00pm** **ASAIO/ICCAC MCS Proficiency Verification Courses (MPV) – See page 26 for individual meeting rooms**
- 8:30 – 10:00am** **Cardiac 5 – MCS vs. Heart Transplantation in the Current Era... – Columbia Hall 5-8 – Terrace Level**
Bioengineering 5 – Tissue Engineering and Regenerative Medicine – Columbia Hall 9-12 – Terrace Level
Pulmonary 5 – Temporary Respiratory Support Advances – Columbia Hall 3-4 – Terrace Level
Renal 5 – Abstract Session – Fairchild – Terrace Level
Pediatric 4 – ...Optimizing the Life and Death of Children Supported ... – Gunston – Terrace Level
- 10:00 – 10:45am** **Visit Exhibits & Posters – Enjoy Refreshments – Columbia - Terrace Level**
- 10:45am – 12:00pm** **Cardiac 6 – What about the RIGHT? ... – Columbia Hall 5-8 – Terrace Level**
Bioengineering 6 – Additive Manufacturing for Artificial Organs – Columbia 9-12 – Terrace Level
Renal 6 – The Business of ESRD Care – Fairchild – Terrace Level

ASAIO 7th ANNUAL PEDIATRIC MEDICAL DEVICE DAY

8:30am - 4:30pm *Columbia Hall 7 - Terrace Level*



Dr. Christina VanderPluym

Pediatric Day Co-Chairs:

Christina VanderPluym, MD, Boston Children's Hospital, Boston, MA
Angela Lorts, MD, Cincinnati Children's Hospital Med Ctr, Cincinnati, OH
Iki Adachi, MD, Texas Children's Hospital, Houston, TX

8:35 - 10:05am

Pediatric Day Session 1: From Heroic to Standard of Care: The Rise of Artificial Organs in Children

Co-Chairs

Richard Wampler, MD, Oregon Health Sciences University, Loomis, CA
Iki Adachi, MD, Texas Children's Hospital, Houston, TX

8:35 - 8:55am

The Industrial Revolution of Artificial Organs: Historical Perspective in Children

Kurt Dasse, PhD, University of Louisville, Louisville, KY

9:00 - 9:20am

The Current Landscape of Pediatric Mechanical Circulatory Support

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

9:20 - 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, DMCCP Professor, Bambino Gesù Hospital, Rome, Italy

10:05 - 10:30am PEDIATRIC REFRESHMENT BREAK 1

10:30am - 12:00pm

Pediatric Day Session 2: The "Complication Cascade" - Approaches to Addressing Frequent Adverse Events Related to Artificial Support (Bleeding, Thrombosis, Infection)

Co-chairs

Angela Lorts, MD, Cincinnati Children's Hospital Med Ctr, Cincinnati, OH
Joshua Sparks, MD, University of Louisville, Louisville, KY

10:30 - 10:50am

Bleeding

Bioengineering/Research Perspective

Trevor Snyder, PhD, VADovations, 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, University, Loomis, CA

Clinician Perspective

Jennifer Conway, MD, Stollery Children's Hospital, Alberta, Canada

11:10 - 11:30am

Infection

Bioengineering/Research Perspective

Joshua Woolley, PhD, NuPulseCV, Raleigh, NC

Clinician Perspective

Scott Auerbach, MD, Colorado Children's Hospital, Aurora, CO

11:30am - 12:00pm

PEDIATRIC ABSTRACTS

11:30 - 11:40am

Hepatic Effects After Support on the Artificial Placenta

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

11:40 - 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 Session 3: Lessons from Innovators, Industry and Executives

Co-Chairs

Eric Chen, MS, Food and Drug Administration, Silver Spring, MD
Robert Kroschwitz, CCP, Berlin Heart, The Woodlands, TX

1:30 - 1:45pm

OrthoPediatrics - Establishing and Sustaining a Pediatric Focused Medical Device Company

David Bailey, BS, Executive Vice President, Orthopediatrics LLC, 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, 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 2

3:00 - 4:30pm

Pediatric Day Session 4: Novel Use of Devices and Data

Co-Chairs

Francis Fynn-Thompson, MD, Boston Children's Hospital, Boston, MA
Christopher Almond, MD, MPH, Stanford University, Palo Alto, CA

3:00 - 3:15pm

Cardiomems: 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, Stanford University, Palo Alto, CA

3:30 - 3:45pm

Use of Real World Data for Pediatric Medical Devices

FDA Representatives to be announced

3:45 - 4:00pm

ACTION Network: Big Data for a Small Population

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

4:00 - 4:30pm

PEDIATRIC ABSTRACTS

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 Venovenous 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

MCS/VAD UNIVERSITY

8:00am - 5:00pm *Columbia Hall 5 - Terrace Level*

8:00 - 8:05am

Welcome



Course Director:

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

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, PhD, Abbott, Burlington, MA
Jeffrey LaRose, MSMB, 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 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 Med - St. Luke's Med Ctr, Houston, TX

Technique of a Durable LVAD Implant

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

1:00 - 2:00pm

Mock Loop / Prototype Challenge Presentations

Concentric Heart Retains Natural Atria And Valves

Arnold Lande, MD, Northport Navigable Waters, Northport, MI

Versatile Hybrid Mock Circulation for Testing Active and Passive Cardiovascular Implants Under Dynamically Changing Pathophysiologic Conditions

Marianne Schmid Danders, PhD, ETH Zürich, Zürich, Switzerland

Embedded Magnet Printing for Ventricular Assist Devices

Kai Van Peterdorr-Campen, MSc, ETH Zürich, Zürich, Switzerland

1:00-2:00pm LUNCH BREAK

2:00 - 3:00 pm

SESSION 5: Total Artificial Heart

Indications, Technique and Complications

Daniel Tang, MD, VCU 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 Univ 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

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

WEDNESDAY, JUNE 13 (continued)

ICCAC 11TH ANNUAL MEETING

6:00-9:00pm *Cabinet Room - Concourse Level*

Chair:

Peggy Blood, MSN, RN, University of Alabama, Birmingham, AL

The International Consortium of Circulatory Clinicians (ICCAC) will be hosting their 11th 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.

THURSDAY, JUNE 14

GENERAL SESSION 1

7:45am - 12:30pm *Columbia Hall 5-8 - Terrace Level*



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, Univ of Kentucky, Lexington, KY

8:00 - 9:15am

TOP ABSTRACTS

8:00 - 8:10am

LVAD Patients With Chronic Kidney Disease: Are Two Organs Better Than One?

Megan Kamath, MD, University of California, 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

9:15 - 9:45am

President's Address: Where Do We Go from Here?

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

9:45 - 10:30am

POSTER SESSIONS - EXHIBITS ENJOY REFRESHMENTS

10:30am-12:30pm *Columbia Hall - Terrace Level*

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 - 12:15pm

Medical Device Entrepreneur's Forum



Chairman:

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

Panelists

Edward Berger, PhD, Larchmont Strategic Advisors, Chestnut Hill, MA
Eric Chen, MS, Food & Drug Administration, Silver Spring, M

11:15 - 11:35am

Handl

Michael Hemati, MTM, Perikinetics, San Francisco, CA

11:35 - 11:55am

Uniti Sutureless Connection System

Landon Tompkins, MEng, University of Louisville, Louisville, KY

11:55am - 12:15pm

Exatherm: Whole Body Hyperthermia System for Cancer Treatment

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

12:15 - 12:30pm

Fellowship Award Announcements

12:30 - 1:30pm LUNCH BREAK

CARDIAC 1: Acute Heart Failure - Cardiogenic Shock: Patient/Device Selection

1:30 - 3:00pm *Columbia Hall 5-8 - Terrace Level*

Co-Chairs:

William Cotts, MD, MS, Advocate Christ Medical Center, Oak Lawn, IL
Jonathan Haft, MD, University of Michigan, Ann Arbor, MI

1:30 - 2:30pm

CARDIAC ABSTRACTS

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

BIOENGINEERING 1: Design Innovation and Optimization

1:30 - 3:00pm *Columbia Hall 9-12 - Terrace Level*

Co-Chairs:

Choon-Sik Jhun, PhD, Penn State College of Medicine, Hershey, PA
Amy Throckmorton, PhD, Drexel University, Philadelphia, PA

1:30 - 1:50pm

Improved Blood Pumps Through Innovation and Optimization

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

1:50 - 3:00pm

BIOENGINEERING ABSTRACTS

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 Kuban, BSEE, Cleveland Clinic, Cleveland, OH

PULMONARY 1: Advances in Surgical Treatment of Respiratory Failure

1:30 - 3:00pm *IBR East - Concourse Level*

Co-Chairs:

Hari Mallidi, MD, Brigham and Womens, Boston, MA
Jeffery Javidfar, MD, Emory University, Atlanta, GA

1:30 - 1:45pm

Contemporary Surgical Therapies for Respiratory Failure

Mani A. 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 - 2:10pm

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 - 2:30pm

Discussion and Questions

2:30 - 3:00pm

PULMONARY ABSTRACTS

2:30 - 2:40pm

Successful 30-Day Sheep Studies of a Wearable Pumping Artificial Lung

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

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 Aachen University, Aachen, Germany

RENAL 1: KHI Update

1:30 - 3:00pm *Fairchild - Terrace Level*

Co-Chairs:

Alexander Yevzlin, MD, University of Michigan, Ann Arbor, MI
Matthew McGuire, MD, University of Michigan Health System,
Ann Arbor, MI

1:30 - 1:40pm

RENAL ABSTRACT

Developments Within KHI from the European Side

Fokko Wieringa, PhD, imec, Eindhoven, Netherlands

INVITED PRESENTATIONS

1:40 - 2:20pm

Kidney Health Initiative - Defining the Purpose and Mission

Melissa West, Kidney Health Initiative, Washington, DC

2:20 - 3:00pm

FDA Perspective

Murray Sheldon, MD, FDA, Silver Spring, MD

NURSING ABSTRACTS

1:30 - 3:00pm *Gunston - Terrace Level*

Co-Chairs:

Pamela S. Combs, PhD, RN, The Univ of Chicago Biological Sciences, Chicago, IL
Jesus Casida, PhD, RN, APN-C, University of Michigan, Ann Arbor, MI

1:30 - 1:40pm

Driveline Infections Following Left Ventricular Assist Device Implantation: Differences Between Three Contemporary Device Types

Thomas Schläglhofer, 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

Ashley Jingzhi Xu, PhD Candidate, Johns Hopkins University, Baltimore, MD

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

POSTER SESSIONS - EXHIBITS ENJOY REFRESHMENTS

3:00 - 3:45pm *Columbia Hall - Terrace Level*

CARDIAC 2: Rise of the Machines: Ethical Issues, Difficult Decisions, and Resource Utilization in MCS Therapy

3:45 - 5:00pm *Columbia Hall 5-8 - Terrace Level*

Co-Chairs:

Jacob Strand, MD, Mayo Clinic, Rochester, MN
Jennifer Beckman, MSN, ARNP, FNP, University of Washington, Seattle, WA

3:45 - 4:30pm

CARDIAC ABSTRACTS

3:45 - 3:55pm

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

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

Psychosocial Characteristics of Patients Selected for Left Ventricular Assist Device Implantation

Alexander Rodriguez, BS, Northwestern University, Chicago, IL

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

BIOENGINEERING 2: Hemolysis and Thrombosis

3:45 - 5:00pm *Columbia Hall 9-12 - Terrace Level*

Co-Chairs:

Brent Craven, PhD, Food & Drug Administration, Silver Spring, MD
Heinrich Schima, PhD, Medical University of Vienna, Vienna, Austria

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 Scaling Parameters for Continuum-based Hemolysis Prediction

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

4:45 - 5:00pm

BIOENGINEERING ABSTRACT

4:45 - 4:55pm

Platelet Membrane Fluidity: A Mechanistic Component of Shear-Mediated Platelet Activation

Alice Sweedo, University of Arizona, Tucson, AZ

VAD 1 : Lessons from the Wizard of Oz!

3:45 - 5:00pm *Monroe - Concourse Level*

Co-Chairs:

Dawn Christensen, MS, FNP-BC, Innovation Program Solutions LLC, Pine Grove, PA

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

3:45 - 4:05pm

The Scarecrow & The Lion: Courage to Think & Act - Ideas & Tools to improve Team Efficiency and Honor the VAD Coordinator Role

Nancy Richards, MSN, RN, Univ of Kansas Health System, Kansas City, KS

4:05 - 4:30pm

The Wicked Witch: "I'll Get You My Pretty, and Your Little Dog Too!" - Emergency Plans & Preparation for a Natural Disaster

Coordinator Panel:

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

4:30 - 5:00pm

The Tin Man: "I Know I've Got a Heart Because it is Breaking" - What Can be Done when the Right Side Goes Down?

Two Case Studies:

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

PULMONARY 2: The Value of Pulmonary Extracorporeal Support

3:45 - 5:00pm *IBR East - Concourse Level*

Co-Chairs:

James M. Blum, MD, Emory University, Atlanta, GA

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

3:45 - 4:00pm

ECLS Fiscal Considerations, Outcomes and Reimbursements

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

4:00 - 4:05pm

Discussion and 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 and Questions

4:25 - 5:00pm

PULMONARY ABSTRACTS

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 and Questions

RENAL 2: Traditional Technology Applied in Novel Ways

3:45 - 5:00pm *Fairchild - Terrace Level*

Co-Chairs:

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

Matthew McGuire, MD, University of Michigan Health System, Ann Arbor, MI

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

PEDIATRIC 1: The Good, the Bad, and the Ugly - When All Organs Fail, What Do We Do?

3:45 - 5:00pm *Gunston - Terrace Level*

Co-Chairs:

David Peng, MD, University of Michigan, Ann Arbor, MI

Damien Lepar, MD, Columbia University, New York, NY

Lessons Learned from Managing Multi-Organ Failure in Complex Pediatric Patients through Interactive Real Case Presentations.

Steven Kindel, MD, Children's Hospital of Wisconsin, Milwaukee, WI

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

Chet Villa, MD, Cincinnati Children's Hospital, Cincinnati, OH

Sabrina Law, Columbia University, New York, NY

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

6:00 - 7:00pm **ASAIO Welcome Reception**

Admission By Ticket

Columbia Hall

8:00am-5:00pm *Columbia Hall*

ABSTRACT POSTER PRESENTATIONS

Cardiac Posters

Poster
Numbers

- 100 Accuracy of Postoperative Risk Scores on Survival Prediction In CF-LVAD Recipients**
Harveen Lamba, MD, Baylor College of Medicine at Texas Heart Institute, Houston, TX
- 101 Echocardiographic Estimates of Right Heart Pressures Fail to Approximate Invasive Hemodynamics in Continuous Flow VAD Patients**
Song Li, MD, University of Washington, Seattle, WA
- 102 Ambulatory Power-Tracking Algorithm for HVAD May Facilitate Prevention of Adverse Events**
Abhijit Kadrolkar, PhD, Medtronic, Mounds View, MN
- 103 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
- 104 "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
- 105 Patients of All Body Mass Index Classifications Gain Weight after First LVAD Implant**
D'Anne Kudlik, MS, Medtronic, Mounds View, MN
- 106 Ischemic Mitral Regurgitation: Insights from Robotic Papillary Muscle Construct Using Computational Mechanics**
Pramod Bonde, MD, Yale University, New Haven, CT
- 107 Comparison of Hemodynamic and Microcirculatory Assessment in Cardiopulmonary Bypass: Pulsatile- vs Centrifugal-Flow Pumps**
Takuma Miyamoto, MD, PhD, Cleveland Clinic, Beachwood, OH
- 108 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
- 109 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
- 110 Predictors and Outcomes of Renal Replacement Therapy after Left Ventricular Assist Device Implantation**
Rabea Asleh, MD, Mayo Clinic, Rochester, MN
- 111 Changes in Functional Status and Quality Of Life Measures in Ventricular Assist Device Patients Implanted With A Cardiome™ Device**
Jennifer Nowaczyk, Scripps Health, La Jolla, CA
- 112 Unexplained Syncope in Patients with Left Ventricular Assist Devices (LVAD)**
Bibin Varghese, BS, Baylor College of Medicine at Texas Heart Institute, Houston, TX
- 113 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
- 114 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
- 115 Functional Prototype for Pulsed Rotary Displacement Pump: Thetaegek Pump**
Jiheum Park, PhD, Yale University, New Haven, CT
- 116 Corwave Neptune LVAD: Timing of Synchronized Pulsatility to Create Maximum Pulse Pressure**
Carl Botterbusch, BSME, MBA, Corwave SAS, Paris, France
- 117 Development of Mock Circulatory Loops to Assess VAD Performance**
Luke Herbertson, PhD, US Food and Drug Administration, Silver Spring, MD
- 118 Hydraulic Pressure Analysis for Soft Robotic Bi-Ventricular Copulsation Sleeve**
Jooli Han, Carnegie Mellon University, Pittsburgh, PA
- 119 Novel Vascular Access Device for Minimally Invasive Delivery of a Counterpulsation Device through Subclavian Artery**
Robert Smith, PhD, Nupulse CV, Raleigh, NC
- 120 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
- 121 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
- 122 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
- 123 Aortic Spiral Flow Dynamics: The Impact of Mechanical Circulatory Support Devices**
Pablo Huang Zhang, Drexel University College of Medicine, Philadelphia, PA
- 124 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
- 125 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
- 126 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
- 127 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

- 128** **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
- 129** **Ultrasound**
Seraina Dual, ETH Zürich, Zürich, Switzerland
- 130** **In Vivo Evaluation of a Novel Centrifugal LVAD in A Bovine Model of Short-Term Duration**
Yaxin Wang, MS, University of Cambridge, Cambridge, United Kingdom
- 131** **Controlling an LVAD Wireless Power System for Temperature Studies**
Lori Lucke, PhD, Minnetronix, Saint Paul, MN
- 132** **Biochemical Characterization of Ex Vivo Hemoperfused Hearts**
Benjamin Kappler, LifeTec Group B.V., Eindhoven, Netherlands
- 133** **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
- 134** **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
- 135** **MELD-Xi Score and Outcomes in Adults Supported With Short Term Continuous Flow Ventricular Assist Devices**
Sabin Bozso, MD, University of Alberta, Edmonton, Canada
- 136** **An Exploratory Study of Adhesion Strategies for Epicardial Cardiac Assist Devices**
Molly Kaissar, Carnegie Mellon University, Pittsburgh, PA
- 137** **Intraventricular Lvad Pump Position And Pump Thrombosis**
Thomas Schläglhofer, BSc, Medical University of Vienna, Vienna, Austria

Bioengineering Posters

- 138** **Static Cold Storage versus Dynamic Hypothermic Ex-Situ Perfusion on Rat Hind Limb Allografts**
Presentation Cancelled
Emre Gok, MD, University of Michigan, Ann Arbor, MI
- 139** **Clinical Efficacy of Subcutaneous ECG Sensing for Long-Term Counterpulsation**
Ryan McCormick, PhD, NuPulseCV, Raleigh, NC
- 140** **Artificial Thrombi for In Vitro Ventricular Assist Device Testing**
Jana Gigliotti, Texas A&M University, College Station, TX
- 141** **Comparison of Newtonian and Viscoelastic Blood Models In The FDA Benchmark Centrifugal Pump**
Bryan Good, PhD, The Pennsylvania State University, University Park, PA
- 142** **Comparison of Two Arterial Cannulae for Cardiopulmonary Bypass Using Computational Fluid Dynamics**
Gionata Fragomeni, PhD, Magna Graecia University – Catanzaro, Catanzaro, Italy
- 143** **A Protocol for Automated Adaptive Discretization of Complex Geometry**
Akash Gupta, BS, Clemson University, Clemson, SC
- 144** **Predicting Plasma Free Hemoglobin Levels in Patients Due to Medical Device Hemolysis**
Richard Malinauskas, PhD, Food and Drug Administration, Silver Spring, MD
- 145** **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
- 146** **Inventive Knowledge Flow: Tracking the Progress of Biomedical Innovation**
Sanga Shir, University of Arizona, Tucson, AZ
- 147** **In Vitro Hemolysis Evaluation of CH-VAD, an Ultra-Compact Fully Magnetically Suspended Left Ventricular Assist Device**
Liudi Zhang, PhD, Soochow University, Jiangsu, China
- 148** **Numerical Simulation for Thrombosis under Non-Newtonian, Pulsatile Blood Flow**
Ling Yang, BS, The Pennsylvania State University, University Park, PA
- 149** **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
- 150** **Blood Pump Rotor Eccentricity And Hemolysis Evaluation**
Zhongwei Qi, MS, Abiomed Inc., Danvers, MA
- 151** **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
- 152** **Virtual Reality in Medical Education: Responses to Innovative Learning Methods**
Michael DiCaro, BS, University of Arizona, Tucson, AZ
- 153** **How Well Understood Is the Mechanism of Plasma-Free Hemoglobin Mediated Vasoconstriction?**
Jan Stanley Simoni, DVM, PhD, TX HemoBio Therapeutics & Bioinnovation Ctr, Lubbock, TX
- 154** **“Digital Reflexes”: Quantitation and Signatures of Superficial Reflexes via Stretchable Electronic Wearable Sensors**
Rebecca Slepian, University of Arizona, Tucson, AZ
- 155** **Surface Characterization of Implantable Long-Term Use Fontan Pump Materials**
Clare McHugh, The Pennsylvania State University, University Park, PA
- 156** **Computational Fluid Dynamics Estimation of Blood Damage In Spiral Groove Bearing**
Qing Han, PhD, University of Jinan, Jinan, China
- 157** **Revisiting the Definition of Surplus Hemodynamic Energy (She) - Are We Using the Right Pulsatility Index?**
Po-Lin Hsu, PhD, Soochow University, Soochow, China
- 158** **Assessment of VAD Hydraulic and Blood Damage Performances By Means of Dynamic Pressure Simulations**
Alessandra Molteni, Calon Cardio – Technology, Swansea, United Kingdom

- 159 On the Estimation of Hemodynamic Parameters Using Dilution Protocol and Relative Blood Volume**
Hamed Samandari, PhD, Miami University, Miami, FL
- 160 An Automated Aortic Graft Replacement for Aortic Aneurysmal Disease**
Pramod Bonde, MD, Yale University, New Haven, CT
- 161 Virtual Anatomic Fitting of a Centrifugal LVAD: An Inlet Cannula Study**
Bruno Utiyama da Silva, PhD, Sao Paulo, Brazil
- 162 Relationship of Platelet Adhesion with Surface Topography in the Penn State PVAD**
Cecilia Richardson, The Pennsylvania State University, State College, PA

Nursing Posters

- 163 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
- 164 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
- 165 Survival Post Heart Transplant by Era in Recipients \geq 65y Bridged with Mechanical Circulatory Support**
Anthony Dan Paul Salimbanon, RN, BSN, CCRN, UCLA Medical Center, Los Angeles, CA
- 166 Reduction of VAD Coordinator Time Burden and Empowerment of HVAD Patients without Compromising Care**
Thomas Schlöghofer, BSc, Medical University of Vienna, Vienna, Austria
- 167 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
- 168 How to Improve Homecare after VAD Implantation a Patients' Perspective**
Thomas Berg, MD, University Hospital RWTH Aachen, Aachen, Germany
- 169 Bridging VA ECMO to Durable LVAD: Keys to Success**
Brazil Jassman, RN, BSN, INTEGRIS Baptist Medical Center, Oklahoma City, OK
- 170 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
- 171 Language of the Heart: Revising Consent for Improved LVAD Outcomes**
Adrienne Edlund, RN, University of Rochester Medical Center, Rochester, NY
- 172 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
- 173 Standardized Mechanical Circulatory Support Guidelines: The Perspective from Coordinators**
Andrew Lundstrom, BSN, RN, Bryan Heart, Lincoln, NE

- 174 The Inner Workings of Femoral VA ECMO**
Monika Tukacs, RN, BSN, New York Presbyterian Hosp Columbia University, New York, NY
- 175 Changes in the Clinical Characteristics of LVAD Patients**
Kathleen Hickey, PhD, Columbia University at CUMC, New York, NY
- 176 When Indecision Is the Decision**
Jill Giordano, Newark Beth Israel Medical Center, Newark, NJ
- 177 Improving Ventricular Assist Device VAD Patient Education Through Teach Back**
Penny Messner, APRN, CNS, DNP, Mayo Clinic, Rochester, MN
- 178 Bedside Nurses Perceived Challenges of VAD Patient Care: A Qualitative Analysis**
Pamela Combs, PhD, RN, The University of Chicago Biological Sciences, Chicago, IL

FRIDAY, JUNE 15

GENERAL SESSION 2

8:00am - 12:30pm *Columbia Hall 5-8 - Terrace Level*



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 Presentations

8:00 - 8:05am
Transmission Electron Microscopy of Explanted Intravascular Medical Devices
Staci Jessen, PhD, CV Pathology Lab Texas A&M University, 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
Harveen Lamba, MD, 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, MSN, RN, Bryan Heart, Lincoln, NE

8:30 - 9:30am

ASAIOfyi - for Young Innovators Student Design Competition

Final Design of Pediatric Artificial Urinary Sphincter

Sonali Mahendran, BS, Rice University, Houston, TX

Saheba Bhatnagar, BS, Rice University, Houston, TX

Device for At-Home Monitoring of Jugular Venous Pressure

Nicholas Calafat, BS, Rice University, Houston, TX

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

Lucas Tatem, Clemson University, Clemson, SC

William Scammon, Clemson University, Clemson, SC

Alex Ormerod, 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

Fixtula

Bibhav Poudel, BS, Johns Hopkins University, Baltimore, MD

Nicholas Zhang, BS, Johns Hopkins University, Baltimore, MD

Development of a Non-Blood Contacting Pediatric Heart Augmentation Device

Jordan Verner, 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

9:30 - 10:00am



Keynote Address: Innovations in Communication

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

**POSTER SESSIONS - EXHIBITS
ENJOY REFRESHMENTS**

10:00 - 10:45am *Columbia Hall - Terrace Level*

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, Columbia, NY

11:35am - 12:20pm

KEYNOTE SPEAKER - FIRESIDE CHAT



The Evolution of Cardiac Surgery Over 4 Decades from a Surgeon, Innovator, Clinical Trials Director, Service Line and CEO Perspective

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

12:30 - 1:30pm LUNCH BREAK

CARDIAC 3: Optimizing Outcomes in Patients with Durable Mechanical Support: How to Make the Best of It?

1:30 - 3:00pm *Columbia Hall 5-8 - Terrace Level*

Chair:

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

1:30 - 2:30pm

CARDIAC ABSTRACTS

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

Harveen Lamba MD, 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 in Left Ventricular Assist Device (Lvad) Patients

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 - 3:30pm

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 M. Stulak, MD, Mayo Clinic Hospital, Rochester, MN

2:50 - 3:00pm

Discussion

**BIOENGINEERING 3: Sensors and Pump Control
(Physiological Control and Speed Modulation)**

1:30 - 3:00pm *Columbia Hall 9-12 - Terrace Level*

Co-Chairs:

Joshua P. Cysyk, PhD, Penn State College of Medicine, Hershey, PA
Kevin Soucy, PhD, University of Louisville, Louisville, KY

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

2:00 - 3:00pm

BIOENGINEERING ABSTRACTS

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 Siruvallur 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

**VAD 2: Shark Tank - "Nobody has a monopoly on
good ideas." - Kevin O'Leary**

1:30 - 3:00pm *Monroe - Concourse Level*

Co-Chairs:

Dawn Christensen, MS, FNP-BC, Innovation Program Solutions
LLC, Prine Grove, PA

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

1:30 - 2:00pm

**Topic 1: Expanding a Program without Adding New
Personnel**

**"Tough times never last; tough people always do." - Robert
Herjavec**

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**

**"It comes down to finding something you love to do and
then just trying to be great at it." - Mark Cuban**

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!
"Everyone has an idea, but it's taking those first steps
toward turning that idea into a reality that are always the
toughest." - Daymond John**

Brazil Jassman, RN, BSN, INTEGRIS Baptist Medical Center,
Oklahoma City, OK
Anthony Dan Paul Salimbangon, RN, BSN, UCLA Medical
Center, Buena Park, CA

**PULMONARY 3: Epidemiology of ECMO for
Respiratory Support**

1:30 - 3:00pm *Lincoln East - Concourse Level*

Chair:

Raquel Bartz, MD, Duke University, Durham, NC

1:30 - 1:45pm

Present and Future Directions of ECMO Centers

Michael J. 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 T. Gutsche, MD, University of Pennsylvania, Philadelphia, 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

2:30 - 3:00pm

PULMONARY ABSTRACTS

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

RENAL 3: Blood Vessel Innovation

1:30 - 3:00pm *Fairchild - Terrace Level*

Co-Chairs:

Alexander Yevzlin, MD, University of Michigan, Ann Arbor, MI
Matthew McGuire, MD, University of Michigan Health System, Ann Arbor, MI

RENAL ABSTRACT

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 PRESENTATION

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

PEDIATRIC 2: Overcoming the Limits of Design: Miniturization, Portability and Affordability in Children

1:30 - 3:10pm *Gunston - Terrace Level*

Co-Chairs:

Robert Niebler, MD, Medical College of Wisconsin, Milwaukee, WI
Anglea Lorts, MD, Cincinnati Children's Hospital Med Ctr, Cincinnati, OH

1:30 - 1:50pm

Adapting Big Devices to Small Children: Virtual Fit Technology

David Morales, MD, Univ 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, Stanford Children's Hospital, Palo Alto, CA

2:10 - 2:30pm

Downsizing- The future is Small

Charles Dague, MSEE, Abbott, Burlington, MA

2:30 - 2:50pm

Examining the Affordability of Advanced Support in Children

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

2:50 - 3:10pm

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 Hospital of New York Presbyterian, New York, NY

IFAO SESSION

1:30 - 2:30pm *Shaw - First Floor*

Co-Chairs:

Jonathan Haft, MD, University of Michigan, Ann Arbor, MI
Toru Masuzawa, PhD, Ibaraki University, Ibaraki, Japan

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

**POSTER SESSIONS - EXHIBITS
ENJOY REFRESHMENTS**

3:00 - 3:45 *Columbia Hall - Terrace Level*

CARDIAC 4: The Future of MCS Therapy: Innovative and Novel Bioengineered Approaches to Advanced Heart Failure

3:45 - 5:00pm *Columbia Hall 5-8 - Terrace Level*

Co-Chairs:

Maya Guglin, MD, PhD, University of Kentucky, Lexington, KY
Thomas Schlöglhofer, BSc, Medical University of Vienna, Vienna, Austria

3:45 - 4:30pm

CARDIAC ABSTRACTS

3:45 - 3:55pm

Electrocardiogram-Synchronized Rotational Speed Modulation System Can Reduce the Recirculation Due to Aortic Insufficiency In LVAD Support

Kei Lizuka, MD, 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

BIOENGINEERING 4: Bleeding and von Willebrand Factor

3:45 - 5:00pm *Columbia Hall 9-12 - Terrace Level*

Co-Chairs:

Marvin Slepian, MD, University of Arizona, Tucson, AZ
Kevin Bourque, MSME, Abbott, Burlington, MA

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 ABSTRACTS

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

PULMONARY 4: Permanently Implantable Respiratory Support

3:45 - 5:00pm *Lincoln East - Concourse Level*

Chair:

James Blum, MD, Emory Healthcare/VA, Atlanta, GA

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

4:45 - 4:55pm

PULMONARY ABSTRACT

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

RENAL 4: Minimally Invasive Techniques

3:45 - 5:00pm *Fairchild - Terrace Level*

Co-Chairs:

Alexander Yevzlin, MD, University of Michigan, Ann Arbor, MI
Matthew McGuire, MD, University of Michigan Health System, Ann Arbor, MI

3:45 - 4:20pm

Endovascular Fistula Creation / FLEX-1 Study
Deeraj Rajan, BSc, MD, University of Toronto, Toronto, Ontario

4:20 - 4:55pm

Minimally Invasive AVG Insertion
Alexander Yevzlin, MD, University of Michigan, Ann Arbor, MI

PEDIATRIC 3: Pearls and Perils of Supporting Single Ventricles

3:45 - 5:00pm *Gunston - Terrace Level*

Co-Chairs:

Christopher Almond, MD, Stanford University, Palo Alto, CA
Kurt Schumacher, MD, C.S Mott Children's, Univ of Michigan

3:45 - 4:00pm

Overcoming limited Support Options for Shunted Neonates
Kathleen Simpson, MD, St Louis Children's Hospital, St Louis, MO

4:00 - 4:15pm

Improving Oxygenation and Circulation in Glenn Physiology with Modified ECMO
David Hoganson, MD, Boston Children's Hospital, Boston, MA

4:15 - 4:30pm

Support Strategies for the Fontan
Mark Bleiweis, MD University of Florida, Gainesville, FL

4:30 - 5:00pm

PEDIATRIC ABSTRACTS

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

ASAIO MEMBER BUSINESS MEETING

5:15 - 5:45pm Kalorama - Lobby Level

8:00am-5:00pm Poster Presentations in Columbia Hall

Cardiac Posters

- Poster Numbers
- 179** **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
- 180** **New Tool for Left Intraventricular Visualization and Bloodless LVAD Insertion**
Jamshid Karimov, MD, PhD, Cleveland Clinic, Cleveland, OH
- 181** **Significant Decrease in Hga1c Levels in Diabetics after Continuous-Flow Left Ventricular Assist Device Implantation**
Harveen Lamba, MD, Baylor College of Medicine at Texas Heart Institute, Houston, TX
- 182** **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
- 183** **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
- 184** **Delayed Sternal Closure in Heart Transplant Patients Bridged with Continuous Flow Left Ventricular Assist Devices**
Harveen Lamba, MD, Baylor College of Medicine at Texas Heart Institute, Houston, TX
- 185** **Chronic In Vivo Test of A Mechanical Circulatory Assist Device for Failed Fontan Circulation**
Joshua Csyk, PhD, Penn State College of Medicine, Hershey, PA
- 186** **Intracorporeal Heat Distribution from Fully Implantable Energy Sources for Mechanical Circulatory Support: A Computational Proof-of-Concept Study**
Presentation Cancelled
Jacopo Biasetti, PhD, Johns Hopkins University, Baltimore, MD
- 187** **Influence of VAD Pressure-Flow Characteristics on Exercise Physiology: Hemodynamic and Energetic Evaluation with a Computational Model**
Libera Fresiello, PhD, KU Leuven, Leuven, Belgium
- 188** **Simulated Performance of Cleveland Clinic Continuous-Flow Total Artificial Heart Using the Virtual Mock Loop**
Takuma Miyamoto, MD, PhD, Cleveland Clinic, Cleveland, OH
- 189** **Inter-Laboratory Particle Image Velocity (Piv) Measurements in the FDA Blood Pump Model**
Prasanna Hariharan, PhD, US Food and Drug Administration, Silver Spring, MD
- 190** **A Multimodal Approach to a Partial Outflow Graft Obstruction Diagnosis in LVAD Patients**
Kelly Mesa, Providence Sacred Heart Medical Center, Spokane, WA
- 191** **Hemodynamic and Echo Measurements during Weaning of VA ECMO Suggest Acceptable LV Unloading**
Ahmed Elbanayosy, MD, INTEGRIS Baptist Medical Center, Oklahoma City, OK
- 192** **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
- 193** **Is Platelet Aggregation Different In Arterial Vs. Venous Blood?**
Jan Stanley Simoni, DVM, PhD, TX HemoBio Therapeutics, Lubbock, TX
- 194** **Comprehensive Shear Stress Analysis in CH-VAD - An Ultra-Compact Fully Magnetically Suspended Implantable LVAD**
Po-Lin Hsu, PhD, Soochow University, Jiangsu, China
- 195** **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
- 196** **Simulation Study Exploring the Potential of Acoustic Resonance to Measure Left Ventricular Volume**
Seraina Dual, ETH Zurich, Zurich, Switzerland
- 197** **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
- 198** **Hospital Readmissions for Patients with Left Ventricular Assist Devices (Lvad)**
Bibin Varghese, BS, Baylor College of Medicine at Texas Heart Institute, Houston, TX
- 199** **Modeling of Virtual Mechanical Circulatory Support Hemodynamics for Biventricular Heart Failure**
Jamshid Karimov, MD, PhD, Cleveland Clinic, Cleveland, OH
- 200** **End Organ Recovery and Survival in Adults on Venous-Arterial Extracorporeal Membrane Oxygenation**
Natalia Bahatyrevich, BS, Thomas Jefferson University, Philadelphia, PA
- 201** **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
- 202** **Using Salt to Treat Driveline Site Hyper-Granulation Tissue in Patients with Left Ventricular Assist Devices**
Rebecca Price, BSN, RN, CCRN,, Sharp Memorial, San Diego, CA
- 203** **In Vitro Simulation of Partial Left Ventricular Assist in an Adult**
George Pantalos, PhD, University of Louisville, Louisville, TX
- 204** **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
- 205** **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
- 206** **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

- 207 Evaluation of Gastrointestinal Bleeds in Left Ventricular Assist Device Patients Receiving Phosphodiesterase 5 Inhibitors**
George Gavrillo, Pharm D, MA, Advocate Christ Medical Center, Oak Lawn, IL
- 208 A Novel Self-Sealing, Fixation Enabled, Endovascular Stent Delivery Design for Type a Aortic Dissection**
Pramod Bonde, MD, Yale University, New Haven, CT
- 209 A Mechanized Valve Sparing Aortic Root Remodeling with Annular Stabilization**
Pramod Bonde, MD, Yale University, New Haven, CT
- 210 Progression of Driveline Failure in a Heartmate II LVAD Patient**
Harrison Smith, Providence Sacred Heart Medical Center, Spokane, WA
- 211 Leadless Pacemaker Implantation in an LVAD Patient**
Sujeen Adhikari, UIC-Christ, Oak Lawn, IL
- 212 "Temporary" VAD Anticoagulation Management and Positive Outcomes**
Chet Villa, MD, Cincinnati Children's Hospital Medical Center, Cincinnati, OH
- 213 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
- 214 Concentric Heart Retains Natural Atria and Valves**
Arnold Lande, MD, Northport, MI
- 215 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
- 216 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
- 222 Validation of Bayesian Models for LVAD Mortality at Single Implant Center**
Fazeh Movahedi, PhD, University of Pittsburgh, Pittsburgh, PA
- 223 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
- 224 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
- 225 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
- 226 CFD Integrated Optimization Platform for a Fontan Circulatory Assist Device**
Christopher Scheib, BS, Penn State College of Medicine, Hershey, PA
- 227 Simulation in Surgery: Models for Ventricular Assist Device Implant Training**
Ann-Marie Ginn, BS, Texas A&M University, College Station, TX
- 228 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
- 229 3d Printed Mock Ventricular Assist Device for Benchtop Testing**
Liana Polikaitis, BS, Texas A&M University, College Station, TX
- 230 Assessment of Healing Response to Intravascular Devices Using Transmission Electron Microscopy**
Molly Friedemann, DVM, Texas A&M University, College Station, TX
- 231 Continuous Estimation of Dynamic Differential Pump Pressure with a Rotary Piston Pump**
Jeffrey Gohean, MSME, Windmill Cardiovascular Systems Inc, Austin, TX
- 232 A Comprehensive Platform for Enhanced Islet Cell Delivery: Update from the Drive Consortium**
Scott Robinson, MD, National University of Ireland Galway, Ireland
- 233 An Algorithm for Coupling Multi-Outlet Experimental Sections to Numerical Physiology Simulations for a Hybrid Cardiovascular**
Ehsan Mirzaei, Clemson University, Clemson, NC
- 234 An Alternative Production Method for Collagen to Obtain Scaffolds**
Irem Deniz Derman, BS, Bahçeşehir University, Istanbul, Turkey
- 235 Quantification of Flow and Thrombus Development Using Micro-Particle Image Velocimetry**
Tice Harkins, The Pennsylvania State University, State College, PA
- 236 Ex Vivo Culture Platform to Characterize and Monitor the Onset, Progression and Treatment of Vascular Pathologies**
Noemi Vanerio, LifeTec Group BV, Eindhoven, Netherlands
- 237 Contact Activation of Blood Plasma Coagulation**
Christopher Siedlecki, PhD, Penn State College of Medicine, Hershey, PA
- 238 Fabrication of Hollow Fiber Bioreactor for Functional Bioartificial Organs**
Soeongmi Song, MD, Asan Medical Center, Seoul, South Korea

Bioengineering Posters

- 217 Comparison Between Three Impellers for A Transventricular Assist Device (Tvad)**
Gustavo De Andrade, Institute Dante Pazzanese of Cardiology, São Paulo, Brazil
- 218 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
- 219 Direct 3D Printing of an Anatomical Model for Flow Visualization Experiments**
Kenneth Aycock, PhD, US Food and Drug Administration, Silver Spring, MD
- 220 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
- 221 Investigation of Polyethylene Glycol (Peg) Coatings On Polydimethylsiloxane (Pdms) for Membrane Oxygenator Applications**
Emily Abada, BS, University of California San Francisco, San Francisco, CA

FRIDAY, JUNE 15 (continued)

- 239** **Benchtop Model for Examining Ventricular Assist Device Response to Embolic Particles**
Maci Billiot, Texas A&M University, College Station, TX
- 240** **Novel Tissue-Engineered Heart Valve without Any Foreign Bodies**
Yoshiaki Takewa, MD, PhD, National Cerebral & Cardiovascular Center, Osaka, Japan

Pulmonary Posters

- 241** **Tethered Liquid Perfluorocarbon Coating Prevents Thrombus Formation During 6 Hour Heparin Free Extracorporeal Circulation**
Teryn Roberts, The Geneva Foundation, Tacoma, WA
- 242** **Refractory Hypoxemia During Vv Ecmo: Are 2 ECMO Circuits better Than One?**
Andriy Batchinsky, MD, US Army Institute of Surgical Research, Fort Sam Houston, TX
- 243** **A Successful Bridge to Lung Transplantation Record**
Presenter to be announced

SATURDAY, JUNE 16

ASAIO-ELSO ECMO Workshop

8:00am -12:30pm *Columbia Hall 1-2 - Terrace Level*



Co-Chairs:

Christian Bermudez, MD, Hosp of the Univ 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

Christian 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

12:00 - 12:30pm

Case Examples: Bridge to Lung Transplant - ECPR - Panel Discussion

Robert Bartlett, MD, University of Michigan, Ann Arbor, MI
Christian Bermudez, MD, Hospital of the University of Pennsylvania, Philadelphia, PA

ASAIO/ICCAC MCS Proficiency Verification Course (MPV)

8:00am - 1:00pm



Co-Chairs:

Thomas Schläeglhoffer, BSc, Medical University of Vienna, Vienna Austria
Jennifer Beckman, MSN, ARNP, FNP, University of Washington, Seattle, WA

Medtronic - HVAD

Abbott - HeartMate II and HeartMate 3

Abbott - CentriMag

Abiomed - Impella

Berlin Heart - EXCOR

SynCardia - TAH

Kalorama Lobby Level

Holmead Lobby Level

Jay Lobby Level

Oak Lawn Lobby Level

Morgan Lobby Level

Northwest Lobby Level

CARDIAC 5: Mechanical Circulatory Support vs. Heart Transplantation in the Current Era: Man vs. Machine

8:30 - 10:00am *Columbia Hall 5-8 - Terrace Level*

Co-Chairs:

Simon Maltais, MD, Mayo Clinic, Rochester, MN
Marvin Slepian, MD, University of Arizona, Tucson, AZ

8:30 - 9:30am

CARDIAC ABSTRACTS

8:30 - 8:40am

Self-Driving Cars: Should the Transplant Community be Worried?

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

8:40 - 8:50am

Survival and Functional Status After Bridge-to-Transplant with a Left Ventricular Assist Device

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

8:50 - 9:00am

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

9:00 - 9:10am

Continuous-Flow Left Ventricular Assist Device Decommissioning as Compared to Explantation for Ventricular Recovery: A Systematic Review and Meta-Analysis

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

INVITED PRESENTATION

9:10 - 9:30am

VAD Outcomes are Approaching Transplantation - for Some or for All?

Mary Keebler, MD, Vanderbilt University, Nashville, TN

9:30 - 10:00am

Discussion

BIOENGINEERING 5: Tissue Engineering and Regenerative Medicine (Recovery, Vascular Grafts, Multiscale Mechanics)

8:30 - 10:00am *Columbia Hall 9-12 - Terrace Level*

Co-Chairs:

John Criscione, MD, PhD, Texas A&M University, College Station, TX
William Weiss, PhD, Penn State College of Medicine, Hershey, PA

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 Inst, Bethesda, MD

9:30 - 10:00am

BIOENGINEERING ABSTRACTS

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 Electroceutical Strategy for Modulating Cell-Selective Migration

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

9:50 - 10:00am

Discussion

PULMONARY 5: Temporary Respiratory Support Advances

8:30 - 10:00am *Columbia Hall 3-4 - Terrace Level*

Co-Chairs:

Raquel Bartz, MD, Duke University, Durham, NC
Craig Jabaley, MD, Emory University, Atlanta, GA

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

9:30 - 10:00am

PULMONARY ABSTRACTS

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

RENAL 5: Abstract Session

8:30 - 10:00am *Fairchild - Terrace Level*

Co-Chairs:

Alexander Yevzlin, MD, University of Michigan, Ann Arbor, MI
Matthew McGuire, MD, University of Michigan Health System, Ann Arbor, MI

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 Womens 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 Univ 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 - 9:50am

Discussion and Questions

PEDIATRIC 4 - "We Can Keep Them Alive, But Can We Let Them Live?" Optimizing the Life and Death of Children Supported with Artificial Organs

8:30 - 10:00am *Gunston - Terrace Level*

Co-Chair:

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

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, Rome, Italy

9:10 - 9:30am

The Interface of Palliative Care and Artificial Support
Seth Hollander, Standford Lucile Packard Hospital, Stanford, CA

9:30 - 10:00am

PEDIATRIC ABSTRACTS

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

Columbia Hall - Terrace Level

CARDIAC 6: What about the RIGHT? Support for Right and Bi-Ventricular Failure

10:45 - 12:00pm *Columbia Hall 5-8 - Terrace Level*

Chair:

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

10:45 - 11:30am

CARDIAC ABSTRACTS

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

BIOENGINEERING 6: Additive Manufacturing for Artificial Organs

10:45am - 12:00pm *Columbia Hall 9-12 - Terrace Level*

Co-Chairs:

Zhongjun Wu, PhD, University of Maryland, Baltimore, MD
Joshua Csyk, PhD, Penn State College of Medicine, Hershey, PA

10:45 - 11:15am

Advanced 3D Biofabrication for Rebuilding the Heart
Adam Feinberg, PhD, Carnegie Mellon University, Pittsburgh, PA

11:15am - 12:00pm

BIOENGINEERING ABSTRACTS

11:15 - 11:25am

Evaluation of the Potential of 3d-Membranes for Artificial Lungs
Felix Hesselmann, Dipl.-Ing, Inst of Applied Medical Engineering, Aachen, Germany

11:25 - 11:35am

Overcoming the Limits of Design: Magnet 3d Printing for Rapid Development of Turbodynamic Ventricular Assist Devices
Kai von Petersdorff-Campen, ETH Zürich, Zürich, Switzerland

11:35 - 11:45am

Packaging Considerations for an Implantable Hemofilter Based on Silicon Nanopore Membranes (Snm)
Jimmy Ly, PhD, University of California, San Francisco, CA

11:45 - 11:55am

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

RENAL 6: The Business of ESRD Care

10:45am - 12:00pm *Fairchild - Terrace Level*

Co-Chairs:

Alexander Yevzlin, MD, University of Michigan, Ann Arbor, MI
Matthew McGuire, MD, University of Michigan Health System, Ann Arbor, MI

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

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