



Science, Medicine and Industry
Innovating  for the Future.



PROGRAM

ASAIO 63rd Annual Conference – Chicago

“Patient-Centric Innovation - Artificial Organs Beyond the Conventional”

June 21 – 24, 2017

ASAIO 64TH ANNUAL CONFERENCE WASHINGTON, DC

June 13 - 16, 2018



What is ASAIO?

- Career Connection
- ASAIOfyi – *for young innovators*
- ASAIO Journal Manuscript Submission
- ASAIO Membership
- Accreditation
- Fellowships
- Sponsorship Opportunities
- Dates & Deadlines



ASAIO Headquarters
561.999.8969
info@asaio.com

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ASAIO HEADQUARTERS

7700 Congress Avenue, Suite 3107
Boca Raton, Florida 33487-1356
Tel 561.999.8969 – Fax 561.999.8972
info@asaio.com – www.asaio.com

ASAIO JOURNAL

Mark S. Slaughter, MD, Editor
Michelle Gaffney, Managing Editor

Editorial Office

Tel 443.685.5413
editor@asaiojournal.net

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 is available at www.asaio.com under "Annual Conference". For all CME certificate inquiries, please contact the UMMS-OCME at (508) 856-1671 or (508) 856-6838.

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 educational activity for a maximum of 24.25 *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 27.9 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.

VAD DESIGNATION STATEMENT

The University of Massachusetts Medical School designates this educational activity for a maximum of 8 *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 9.6 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.

Adult ECMO Course DESIGNATION STATEMENT

The University of Massachusetts Medical School designates this educational activity for a maximum of 7.25 *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 8.7 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 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 33**.

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

Silver Level

Baxter Healthcare

Bronze Level

**Berlin Heart
EvaHeart Inc.**

Fresenius Medical Care NA

**Additional Educational
Grants**

SynCardia Systems, LLC

ASAIO Y Nosé International Fellowship

Sponsored by the Y Nosé Fellowship Fund

Daichi Akiyama, MD – page 20

*National Cerebral and Cardiovascular Center and Research Institute,
Osaka, Japan*

**ASAIOfyi – for young innovators
Fellowships**

Sponsored by the Paul S Malchesky Fellowship Fund

Angela Lai, PhD Candidate – page 24

Carnegie Mellon University, Pittsburgh, PA

Lindsay Ma – page 24

VA Ann Arbor Health Care System, Ann Arbor, MI

ASAIO Fellowships

Sponsored by ASAIO

Venkat Keshav Chivukula, PhD – Page 13

University of Washington, Seattle, WA

Christopher Broda, MD – Page 14

Baylor College of Medicine, Houston, TX

ASAIO BOARD OF TRUSTEES

June 19, 2016 - June 24, 2017



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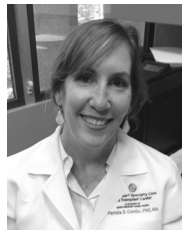
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ASAIO 63rd Annual Conference

Hyatt Regency Chicago - Floor Plan

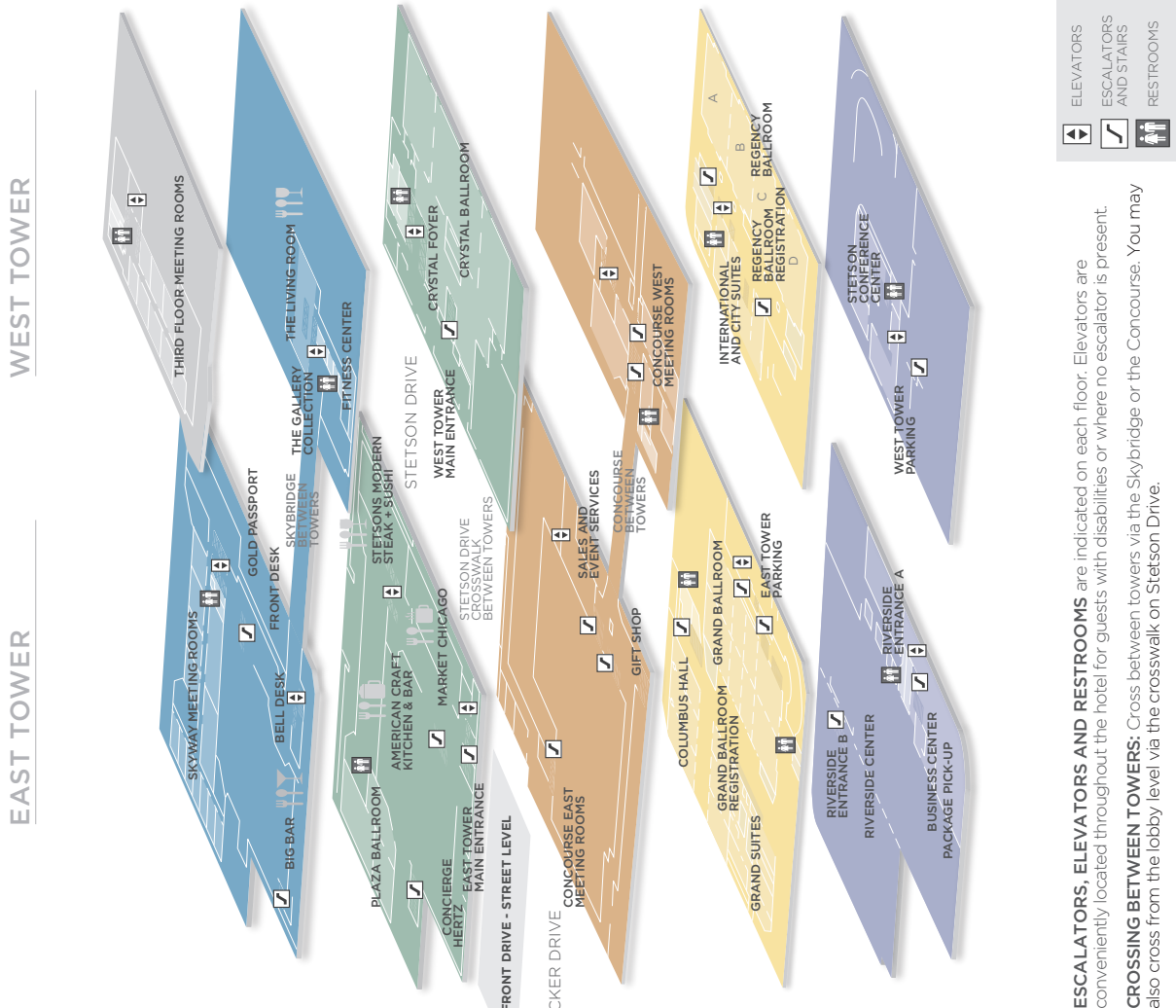
HYATT REGENCY CHICAGO

GUEST MAP



WELCOME TO HYATT REGENCY CHICAGO. Meeting rooms, ballrooms, restaurants and guest amenities are listed in alphabetical order and color coded by floor. For help, dial Guest Services at Extension 4460.

- ACAPULCO** West Tower, Ballroom Level
- ADAMS** West Tower, Third Floor
- AMERICAN CRAFT KITCHEN & BAR** East Tower, Lobby Level
- ATLANTA** West Tower, Ballroom Level
- BELL DESK** East Tower, Skyway Level
- BIG BAR** West Tower, Skyway Level
- BURNHAM** West Tower, Third Floor
- BUSINESS CENTER, PACKAGE ROOM** East Tower, Exhibit Level
- COLUMBIAN** West Tower, Concourse Level
- COLUMBUS HALL (ROOMS A-L)** East Tower, Ballroom Level
- COMISKEY** West Tower, Concourse Level
- CONCOURSE WEST MEETING ROOMS** West Tower, Concourse Level
- CONCIERGE** East Tower, Lobby Level
- CRYSTAL BALLROOM** West Tower, Lobby Level
- DUSABLE** West Tower, Third Floor
- EAST TOWER MAIN ENTRANCE** East Tower, Lobby Level
- EAST TOWER PARKING** East Tower, Ballroom Level
- FIELD** West Tower, Third Floor
- FITNESS CENTER** West Tower, Skyway Level
- FRONT DESK** East Tower, Skyway Level
- THE GALLERY COLLECTION** West Tower, Skyway Level
- GIFT SHOP** East Tower, Concourse Level
- GOLD COAST** West Tower, Concourse Level
- GOLD PASSPORT** East Tower, Skyway Level
- GRAND BALLROOM** East Tower, Ballroom Level
- GRAND SUITES** East Tower, Ballroom Level
- HAYMARKET** West Tower, Concourse Level
- HERTZ** East Tower, Lobby Level
- HONG KONG** West Tower, Ballroom Level
- HORNER** West Tower, Third Floor
- CONCOURSE EAST MEETING ROOMS** East Tower, Concourse Level
- Michigan Meeting Rooms*
- Randolph Meeting Rooms*
- Roosevelt Meeting Rooms*
- Monroe Meeting Rooms*
- THE LIVING ROOM** West Tower, Skyway Level
- MARKET CHICAGO** East Tower, Lobby Level
- MCCORMICK** West Tower, Third Floor
- NEW ORLEANS** West Tower, Ballroom Level
- OGDEN** West Tower, Third Floor
- PACKAGE PICK-UP** East Tower, Exhibit Level
- PICASSO** West Tower, Concourse Level
- PLAZA BALLROOM** East Tower, Lobby Level
- REGENCY BALLROOM** West Tower, Ballroom Level
- RIVERSIDE CENTER** East Tower, Exhibit Level
- SALES AND EVENT SERVICES** East Tower, Concourse Level
- SAN FRANCISCO** East Tower, Concourse Level
- SANDBURG** West Tower, Third Floor
- SKYWAY MEETING ROOMS** East Tower, Skyway Level
- SOLDIER FIELD** West Tower, Concourse Level
- STETSON CONFERENCE CENTER** West Tower, Exhibit Level
- STETSONS MODERN STEAK + SUSHI** East Tower, Lobby Level
- TORONTO** West Tower, Ballroom Level
- WATER TOWER** West Tower, Concourse Level
- WEST TOWER PARKING** West Tower, Exhibit Level
- WRIGHT** West Tower, Third Floor
- WRIGLEY** West Tower, Concourse Level



ESCALATORS, ELEVATORS AND RESTROOMS are indicated on each floor. Elevators are conveniently located throughout the hotel for guests with disabilities or where no escalator is present.

CROSSING BETWEEN TOWERS: Cross between towers via the Skybridge or the Concourse. You may also cross from the lobby level via the crosswalk on Stetson Drive.

ASAIO 63rd Annual Conference Hyatt Regency Chicago

Exhibits | Posters | Refreshment Breaks | Welcome Reception



ASAIO Refreshment Breaks

Thursday

9:45 - 10:30am

3:00 - 3:45pm

Friday

10:15 - 11:00am

3:00 - 3:45pm

ASAIO EXHIBITORS



Abbott
Austin, Texas
Booth #2

For more than 125 years, we've brought 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. St. Jude Medical is now part of Abbott, expanding our impact across more areas of care. www.abbott.com



Alere Home Monitoring
Livermore, California
Booth #18

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, which gives clinicians secure, anytime access to patient data.



Berlin Heart, Inc.
The Woodlands, Texas
Booth #5

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 #17

ActiCare Health enables resource-constrained coordinators to serve more outpatients with better efficiency through a state-of-the-art telehealth platform and 24x7 support, empowering both patients and clinicians to achieve improved outcomes with reduced stress. In response to the immense administrative and operational challenges faced by VAD and transplant departments, we've designed a program to provide enhanced visibility into patients' health status, modernize patient safety and 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, enhance care coordination and staff efficiency, and reduce costs.



ASAIO Journal
Published by Wolters Kluwer
Philadelphia, Pennsylvania
Booth #3

Wolters Kluwer is a leading publisher of medical, health and science publications, including ASAIO, office journal of the American Society of Artificial Internal Organs. We offer an extensive selection of medical books, journals and electronic media for physicians, nurses, specialized clinicians and students. Please visit our booth to browse our comprehensive product line.



Cardiovascular Pathology Laboratory at the Texas A & M University
College Station, Texas
Booth #8

The Cardiovascular Pathology Laboratory at Texas A&M University is dedicated to providing high caliber, innovative and objective pathology support to improve medical device technologies and subsequently, patients' lives. Additionally, we aim to create learning and leadership opportunities for students while being on the forefront of medical and engineering research.

With a special emphasis on cardiovascular and medical device pathology, our lab provides GLP compliant pathology support to Texas A&M and outside investigators. This support includes services such as necropsy, device evaluation, high-resolution imaging, paraffin and plastic histology, micro-CT, micro-X-ray, SEM and EDS.



EvaHeart, Inc.
Houston, Texas
Booth #15

The EVAHEART Left Ventricular Assistant 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.



Haemonetics
Braintree, Massachusetts
Booth #6

Haemonetics is a global healthcare company dedicated to providing innovative blood management solutions for our customers. We offer the TEG[®] 5000 Hemostasis Analyzer System which has been shown to reduce unnecessary blood component administration to help reduce the risks, complications, and costs of allogeneic transfusions. TEG provides a unique and more complete picture of hemostasis to facilitate a better understanding of each patient's risk of hemorrhage or thrombosis.



ICAOT
Painesville, Ohio
Booth #16

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.



Getinge Group
Wayne, New Jersey
Booth #14

Getinge Group is a leading global provider of products and systems that contribute to quality enhancement and cost efficiency within healthcare and life sciences. We operate under the three brands of ArjoHuntleigh, Getinge and Maquet. Our unique value proposition mirrors the continuum of care for patients. We build quality and safety into every system and offer solutions that enhance efficiency throughout the clinical pathway. With our first-hand experience and close partnerships with industry leaders, we are able to exceed our customers' expectations. With a genuine passion for life, we work to improve patients' lives every day – both today and tomorrow.



HemoCue America
Brea, California
Booth #12

A global leader in point-of-care and rapid diagnostics, HemoCue is proud to offer a fast, simple lab test for hemolysis detection. Our small yet robust system allows for STAT determination of plasma/free hemoglobin, allowing for immediate assessment of hemolysis, when it matters.

HemoCue, a Radiometer company, is part of Danaher Corporation's (NYSE:DHR) life sciences and diagnostics platform.



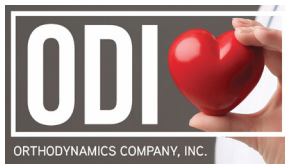
Jarvik Heart, Inc.
New York, New York
Booth #9

"Jarvik Heart, Inc. is a privately held, New York based company that develops and manufactures miniaturized heart 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 Jarvik 15mm VAD (aka Jarvik 2015) has been designed for pediatric patients and will enter a clinical trial in the USA in 2017."

Medtronic

Medtronic
 Framingham, Massachusetts
Booth #7

As a global leader in medical technology, services and solutions, Medtronic improves the lives and health of millions of people each year. We use our deep clinical, therapeutic and economic expertise to address the complex challenges faced by healthcare systems today. Let's take healthcare Further, Together. Learn more at Medtronic.com.



Orthodynamics Company, Inc.
 Noblesville, Indiana
Booth #13

Orthodynamics (ODI) is an industry leader in the outsourcing of Mechanical Circulatory Support equipment, Drive Line Management Kits, logistics management and support. Focused on patient care and a team approach, our *VADTracsm Solution* equipment management/tracking system and individual account managers allow MCS Coordinators to concentrate on what they do best, treating patients! Providing outpatient equipment for all FDA approved MCS devices, and our strategic alliances with hospitals, clinicians and insurance carriers gives us the ability to provide the highest level of service to patients.



www.transonic.com

Transonic
 Ithaca, New York
Booth #1

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...



NxStage Medical
 Lawrence, Massachusetts
Booth #10

NxStage[®] is more than a company; we are leading the renal revolution. Our innovative products are helping to shape and transform renal care. Making it simpler, portable, and expanding treatment options, to enhance patient freedom and fulfillment.



SynCardia Systems, LLC
 Tucson, Arizona
Booth #11

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 new, smaller 50cc TAH-t, CE approved in Europe 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.



Ventriflo[™] True Pulse Pumps
Design Mentor, Inc.
 Pelham, New Hampshire
Booth #4

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 21, 2017	
8:30am - 4:30pm	Pediatric Medical Device Day - Regency B - West Tower - Gold Level
8:00am - 5:00pm	MCS / VAD University - Regency A - West Tower - Gold Level
Thursday, June 22, 2017 - Posters Sessions 8:00 am - 5:00 pm in the Riverside West Exhibit Hall - East Tower - Purple Level	
7:45am - 12:30pm	Opening General Session - Regency A-C - West Tower - Gold Level Top Graded Abstracts ASAIO President's Address
9:45am - 10:30am	Visit Exhibits & Posters • Enjoy Refreshments
12:30pm - 1:30pm	Lunch Break
1:30pm - 3:00pm	Cardiac 1 - Regency A - West Tower - Gold Level Bioengineering 1 - Regency B - West Tower - Gold Level Pulmonary 1 - Regency C - West Tower - Gold Level Renal 1 - Acapulco - West Tower - Gold Level
3:00pm - 3:45pm	Visit Exhibits & Posters • Enjoy Refreshments
3:45pm - 5:00pm	Cardiac 2 - Regency A - West Tower - Gold Level Bioengineering 2 - Regency B - West Tower - Gold Level VAD 1 - Regency D - West Tower - Gold Level Pulmonary 2 - Regency C - West Tower - Gold Level Renal 2 - Acapulco - West Tower - Gold Level Pediatric 1 - Toronto - West Tower - Gold Level
6:00pm - 7:00pm	ASAIO Welcome Reception
Friday, June 23, 2017 - Posters Sessions 8:00 am - 5:00 pm in the Riverside West Exhibit Hall - East Tower - Purple Level	
General Session 2 - Regency A-C - West Tower - Gold Level Rapid Fire Presentations Student Design Competition Keynote Address ASAIO history Group Scientific Biography of William S. Pierce, MD ASAIO Hastings Lecture	
10:15am - 11:00 am	Visit Exhibits & Posters • Enjoy Refreshments
12:00pm - 1:30pm	Lunch Break
1:30pm - 3:00pm	Cardiac 3 - Regency A - West Tower - Gold Level Bioengineering 3 - Regency B - West Tower - Gold Level VAD 2 - Regency D - West Tower - Gold Level Pulmonary 3 - Regency C - West Tower - Gold Level Renal 3 - Acapulco - West Tower - Gold Level Pediatric 2 - Toronto - West Tower - Gold Level
3:00pm - 3:45pm	Visit Exhibits & Posters • Enjoy Refreshments
3:45pm - 5:00pm	Cardiac 4 - Regency A - West Tower - Gold Level Bioengineering 4 - Regency B - West Tower - Gold Level Pulmonary 4 - Regency C - West Tower - Gold Level Renal 4 - Acapulco - West Tower - Gold Level Pediatric 3 - Toronto - West Tower - Gold Level
5:15 pm - 5:45 pm	ASAIO Member Business Meeting
Saturday, June 24, 2017	
8:30am - 10:00am	Medical Device Entrepreneur's Forum - Gold Coast - West Tower - Bronze Level
8:00am - 3:00pm	ASAIO / ICCAC MCS Proficiency Verification Courses - Stratson E, Stratson F, Stratson G - West Tower - Purple Level & Haymarket - West Tower - Bronze Level
8:00am - 5:00pm	Adult ECMO Course - Regency D - West Tower - Gold Level - Columbian
8:30am - 10:00am	Cardiac 5 - Regency A - West Tower - Gold Level Bioengineering 5 - Regency B - West Tower - Gold Level Pulmonary 5 - Regency C - West Tower - Gold Level Renal 5 - Acapulco - West Tower - Gold Level Pediatric 4 - Toronto - West Tower - Gold Level
10:00am - 10:45am	Enjoy Refreshments
10:45am - 12:00pm	Cardiac 6 - Regency A - West Tower - Gold Level Bioengineering 6 - Regency B - West Tower - Gold Level Pulmonary 6 - Regency C - West Tower - Gold Level Renal 6 - Acapulco - West Tower - Gold Level Pediatric 5 - Regency C - West Tower - Gold Level
12:00pm - 1:00pm	IFAO Session - Toronto - West Tower - Gold Level

ASAIO 6th ANNUAL PEDIATRIC MEDICAL DEVICE DAY

Admission by Ticket

8:30am - 4:30pm - **Regency B - West Tower - Gold Level**



Chairs:

Timothy Maul, CCP, PhD

Nemours Children's Hospital, Orlando, FL



Eric Chen, MS, FDA

Silver Spring, MD

Christopher Almond, MD, MPH

Stanford University, Palo Alto, CA

8:30 - 8:35am

Introduction

Timothy Maul, CCP, PhD, Nemours Children's Hospital, Orlando, FL

8:35 - 10:15am

Pediatric Day Session 1: Bringing Products To Market

8:35 - 8:55am

Orphan Products Funding For Clinical Trials

Eric Chen, MS, FDA, Silver Spring, MD

8:55 - 9:15am

Orphan Products PI Perspective

Christopher Almond, MD, Stanford University, Palo Alto, CA

9:15 - 9:35am

Demystifying the FDA Process

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

9:35 - 9:55am

Where The CDRH Is Going

Vasum Peiris, MD, FDA, Silver Spring, MD

9:55 - 10:05am

Discussion and Questions

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

10:30 - 11:45am

Pediatric Day Session 2: Updates From The Field

10:30 - 10:50am

PediMacs

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

10:50 - 11:10am

Early Report From PumpKIN

Robert Jaquiss, MD, UT Southwestern Medical Ctr, Dallas, TX

11:10 - 11:30am

Quality Improvement Science Of VADs

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

11:30 - 11:45am

Discussion and Questions

11:45am - 1:30pm **LUNCH BREAK**

1:30 - 2:15pm

Pediatric Day Session 3: Getting A Pediatric Device to Market

1:30 - 2:15pm

Pediatric Device Consortia

Panel

Julia Finkel, MD, Children's National Health System, Washington, DC

Matthew Maltese, PhD, The Children's Hospital of Philadelphia, Philadelphia, PA

Wenda C. Carlyle, PhD, CardioMed Device Consultants, Annapolis, MD

1:30 - 1:52pm

Berlin Heals C-MIC: A Disruptive Approach for the Treatment of Heart Failure with a Novel Microcurrent Application

Johannes Mueller, MD, Berlin Heals GmbH, Berlin, Germany

Peter Goettel, MD, Berlin Heals, GmbH, Berlin, Germany

1:53 - 2:15pm

CorInnova's Novel Device for MCS

William Altman, BSEE, MBA, CorInnova Inc., Houston, TX

Keith Svagerko, BS, MHA, MBA, CorInnova Inc., Houston, TX

2:15 - 2:30PM **PEDIATRIC REFRESHMENT BREAK 2**

2:30 - 4:30pm

Pediatric Day Session 4: New Ideas In Anticoagulation

2:30 - 2:50pm

DTIs

Patricia Massicotte, MD, University of Alberta, Edmonton, Alberta

2:50 - 3:10pm

Is TEG No Longer Needed?

David Rosenthal, MD, Stanford University, Palo Alto, CA

3:10 - 3:30pm

Surface Passivation

Lise Tchouta, MD, MS, MHS, Columbia University Medical Ctr, New York, NY

3:30 - 3:50pm

Bioinspired Surface Coating for Mechanical Circulator Support

Michael Super, PhD, Wyss Institute at Harvard, Boston, MA

3:50 - 4:10pm

Acute Stroke Management

Rebecca Ichord, MD, Children's Hospital Philadelphia, Philadelphia, PA

4:10 - 4:30pm

Discussion and Closing Comments

Timothy Maul, CCP, PhD, Nemours Children's Hospital, Orlando, FL

8:00am - 5:00pm **MCS/VAD UNIVERSITY** - Admission by Ticket
Regency A - West Tower - Gold Level



Course Director:

Pramod Bonde, MD

Yale University, New Haven, CT

8:00 - 8:05am

Welcome

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

8:05 - 9:30am

How Engineering Influences Medicine

Fundamentals of Engineering Principles in Design, Development and Testing of Circulatory Devices

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

9:30 - 10:30am

How Medicine Helps Engineering Innovation

Who Can and Cannot Benefit from VAD Therapy? How Do We Expand the Potential Recipient Pool?

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

10:30 - 11:30am

Economics of VAD Therapy: What You Need To Know?

Infrastructure Needed Dynamics of Healthcare Delivery Financial Viability

Pavan Atluri, MD, University of Pennsylvania, Philadelphia, PA

11:30am - 1:00pm

Clinical Aspects of VAD Implantation & Approach

Hemodynamic Stabilization of Acute Circulatory Shock Approaches and Pitfalls

Technical Pearls

What Not To Do

Basar Sareyyupoglu, MD, University Hospitals of Case Western, Cleveland, OH
Pramod Bonde, MD, Yale University, New Haven, CT

1:00 - 2:00pm

MOCK LOOP/ PROTOTYPE CHALLENGE PRESENTATIONS

Single Ventricle Pediatric Mock Circulation for Student Instruction and Clinical Simulation

Bill Ngha, MS, MS-1, St. George's University, Charlotte, NC

Hybrid Cardiovascular Simulator

Jeison Fonseca, PhD, Institute Dante Pazzanese of Cardiology, São Paulo, SP, Brazil

Development of a Mock Circulatory Loop for *in vitro* Testing of Ventricular Assist Devices

Sotirios Spiliopoulos, MD, Medical University Graz, Austria

A Compact Mock Loop for Ventricular Assist Device System Performance Verification

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

A Non-Conventional, Concentric, "Total" Artificial Heart

Arnold Lande, MD, Northport Navigatable Waters Institution, Northport, MI

Centrifugal VAD Designed to be Fixed in the Left Ventricle Apex

Bruno Utiyama da Silva, PhD, Institute Dante Pazzanese of Cardiology, São Paulo, Brazil

1:00 - 2:00pm **LUNCH BREAK**

2:00 - 4:00pm

The Four Cs of VAD Care

Communication Compliance Coagulation Complications

William Holman, MD, University of Alabama, Birmingham, AL
Basar Sareyyupoglu, MD, University Hospitals of Case Western, Cleveland, OH
Dawn Christensen, MS, FNP-BC, Innovative Program Solutions LLC, Pine Grove, PA
Pamela Combs, PhD, RN, Advocate Christ Medical Center, Oak Lawn, IL

4:00 - 5:00pm

Total Artificial Heart

Devices in the Pipeline Clinical Implant and Care of TAH Patients Programmatic Aspects

Vigneshwar Kasirajan, MD, VCU School of Medicine, Richmond, VA
Daniel Timms, PhD, BiVACOR, Houston, TX

THURSDAY, JUNE 22

7:45am - 12:30pm Regency A-C - West Tower - Gold Level

GENERAL SESSION 1



Co-Chairs:

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

7:45 - 7:55am

Introduction & Welcome

Marvin Slepian, MD, ASAIO Program Chair, University of Arizona, Tucson, AZ

7:55 - 8:00am

ASAIOfyi -for young innovators Announcement

Priscilla Petit, BMS, Hbeat Medical, Cocoa, FL

8:00 - 9:15am

TOP GRADED ABSTRACTS

8:00 - 8:10am

Implanted Novel Autologous Bioprosthetic Valve Can Adapt the Histological Character to the Environment

Yoshiaki Takewa, MD, PhD, National Cerebral & CV Center, Suita, Osaka, Japan

8:10 - 8:20am

Progress in the Development of a Miniature, Hemocompatible Continuous Flow Ventricular Assist Device for Infants and Children

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

8:20 - 8:30am

Post Transplant Survival in Patients Bridged to Transplant with a Ventricular Assist Device: Poor Outcomes Extend Beyond the Standard Adolescent Age Group

Farhan Zafar, MD, Cincinnati Children's Hospital Medical Ctr, Cincinnati, OH

8:30 - 8:40am

Using Wall Shear Stress and Platelet Stress Accumulation in the Design of a Bioartificial Kidney

Steven Goebel, PhD, SimuTech Group Inc., Rochester, NY

8:40 - 8:50am

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

Jacob Garland, University of Arizona, Tucson, AZ

8:50 - 9:00am

International Analysis of LVAD Point-of-care vs Plasma INR: a Multicenter Study

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

9:00 - 9:15am

Discussion

9:15 - 9:45am

ASAIO PRESIDENT'S ADDRESS



William Fissell, MD, Vanderbilt University, Nashville, TN

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

Riverside West Exhibit Hall - East Tower - Purple Level

9:45 - 10:30am Visit Posters

Riverside West Exhibit Hall - East Tower - Purple Level

10:30am - 12:30pm Regency A-C - West Tower - Gold Level

GENERAL SESSION 1 - Continued

Medical Device Innovations - How Do We Drive It, Build It and Deliver It in the Future?

10:30 - 10:50am

Medical Device/Therapeutics Innovation - The Issue, The Need and The Process

Marvin Slepian, MD, University of Arizona, Tucson, AZ

10:50 - 11:10am

The Revolution in Material Development

Arthur Coury, PhD, Northeastern University, Boston, MA

11:10 - 11:30am

Modeling and Simulation Approaches - Enhancing Certainty, Reducing Animal Studies, Speeding Development

Tina Morrison, PhD, FDA, Silver Spring, MD

11:30 - 11:50am

Intellectual Property Considerations - Cost Effective and Expedient Ways to Protect Medical Devices, Products and Therapies

Patrea Pabst, JD, Pabst Patent Group, Atlanta, GA

11:50am - 12:10pm

Efficiency in Regulatory Strategies

Valerie Merkle, PhD, FDA, Silver Spring, MD

12:10 - 12:30pm

Fueling the Process - How to Secure the Capital to Drive Innovation

Michael Marasco, MBA, Northwestern University, Evanston, IL

12:30 - 1:30pm

LUNCH BREAK

1:30 - 3:00pm Regency A - West Tower - Gold Level

CARDIAC 1

Panel: Patient Pump Interaction:

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

Walter Dembitsky, MD, Sharp Memorial Hospital, San Diego, CA

Keith Aaronson, MD, University of Michigan, Ann Arbor, MI

Mary Keebler, MD, Vanderbilt University, Nashville, TN

1:30 - 1:45pm

Case #1:

Surgical Challenges with Complex Case Scenarios - Multiple Reoperations and Pump Exchanges

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

1:45 - 1:50pm

Discussion

1:50 - 2:05pm

Case #2:

Patient Device Selection Difficulties - Thromboembolic Events and Gastrointestinal Bleeding

Nir Uriel, MD, MSc, University of Chicago, Chicago, IL

2:05 - 2:10pm

Discussion

2:15 - 3:00pm

CARDIAC ABSTRACTS

2:15 - 2:30pm

Infection Complications After Primary Implantation of a Continuous-flow Left Ventricular Assist Device in 526 Patients: Comparison of Axial-flow (HeartMate II) and Centrifugal-flow (HVAD) Devices

Tadahisa Sugiura, MD, PhD, Texas Heart Institute, Houston, TX

2:30 - 2:45pm

ICU Sequential Organ Failure Assessment (SOFA) Score Improves Risks Prediction Accuracy for Durable LVAD Recipients

Subhasis Chatterjee, MD, Baylor College of Medicine, Houston, TX

2:45 - 3:00pm

Discussion

1:30pm-3:00pm Regency B - West Tower - Gold Level

BIOENGINEERING 1 - A New Era in Cardiac Research

Co-Chairs:

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

John Criscione, MD, PhD, Texas A&M University, College Station, TX

1:30 - 2:00pm

MRI Compatible Ex-Vivo Beating Heart (Physioheart) Platform: A New Era in Cardiac Research

Arend de Weger, MD, Leiden University Medical Center, Leiden, Netherlands

2:00 - 3:00pm

Bioengineering Abstracts

2:00 - 2:15pm

A Novel VAD Platform Configured for Right Heart Mechanical Circulatory Support

J. Ryan Stanfield, PhD, VADovations, Oklahoma City, OK

2:15 - 2:30pm

In vitro Performance of a Novel Membrane-oscillating Left Ventricular Assist Device Under Physiological Conditions

Nathalie Tapolsky, BS, University of Louisville, Louisville, KY

2:30 - 2:45pm

Automatic Regulation Feasibility Testing of a Bioprosthetic Total Artificial Heart in a Bovine Model

Jean-Christophe Perlès, MD, Carmat, Vélizy-Villacoublay, France

1:30 - 3:00pm **Regency C - West Tower - Gold Level**

PULMONARY 1 - Pro/Con of ECLS as Bridge to Recovery-Early Ambulation/Mobilization vs Rest and Get Off ECLS ASAP

Co-Chairs:

Bryan Whitson, MD, PhD, Ohio State University, Columbus, OH
Laura Coyle, MSN, Advocate Christ Medical Ctr, Oak Lawn, IL

1:30 - 1:45pm

Pro: Charles Hoopes, MD, University of Alabama, Birmingham, AL

1:45 - 2:00pm

Con: James Blum, MD, Emory University Hospital, Atlanta, GA

2:00 - 2:15pm

Pro: Joseph Zwischenberger, MD, University of Kentucky, Lexington, KY

2:15 - 2:30pm

Con: William Lynch, MD, MS, University of Michigan, Ann Arbor, MI

2:30 - 2:45pm

Panel Discussion

2:45 - 3:00pm

PULMONARY ABSTRACTS

2:45 - 3:00pm

CO₂ Based Servo Regulation of Artificial Lung Sweep Gas
Alex Thompson, PhD, VA Ann Arbor Healthcare System, Ann Arbor, MI

1:30 - 3:00pm **Acapulco - West Tower - Gold Level**

RENAL 1 - Global Issues in Renal Replacement Therapy

Co-Chairs:

Prabir Roy-Chaudhury, MD, PhD, University of Arizona, Tucson, AZ
Fokko Wieringa, PhD, imec, Eindhoven, Noord-Brabant, Netherlands

1:30 - 1:50pm

Global RRT: An Overview

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

1:50 - 2:10pm

Commercial Opportunities and Business Challenges

Derek Wiebenson, BS, Baxter Healthcare, Englewood, CO

2:10 - 2:30pm

Legacy of Kolff and the Road Ahead

Jasper Boomker, PhD, Dutch Kidney Foundation, Bussum, Noord, Netherlands

2:30 - 2:50pm

Reducing the Burden of Water Requirements

Christian Bluchel, PhD, Temasek Polytechnic, Singapore

2:50 - 3:00pm

Discussion

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

Riverside West Exhibit Hall - East Tower - Purple Level

3:00 - 3:45pm **Visit Posters**

Riverside West Exhibit Hall - East Tower - Purple Level

3:45 - 5:00pm **Regency A - West Tower - Gold Level**

CARDIAC 2 - Debate-VADS: Bioengineering and VADS

Co-Chairs:

Heather Barone, RC-BC, MSN, Cedars-Sinai Medical Center, Los Angeles, CA
Charles Hoopes, MD, University of Alabama, Birmingham, AL

3:45 - 4:05pm

Pro: New Pump Designs Have Reached the "Perfect Pump"

David Feldman, MD, PhD, University of Cincinnati Med Ctr, Cincinnati, OH

4:05 - 4:25pm

Con: LVAD Technology Improvement Can Further Improve Clinical Outcomes

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

4:30 - 5:00pm

CARDIAC ABSTRACTS

4:30 - 4:45pm

Cannula and Pump Position is Associated with Left Ventricular Unloading and Clinical Outcome in Patients with HeartWare Ventricular Assist Device

Teruhiko Imamura, MD, PhD, University of Chicago, Chicago, IL

4:45 - 5:00pm

LVAD Outflow Graft Size Impacts Thrombogenic Potential

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

3:45 - 5:00pm **Regency B - West Tower - Gold Level**

BIOENGINEERING 2

Co-Chairs:

O. Howard Frazier, MD, Baylor College of Medicine, Houston, TX
Egemen Tuzun, MD, PhD, Texas A & M University, College Station, TX

3:45 - 4:15pm

Biventricular Heart Assist with Devices Acting on the Epicardium

John Criscione, MD, PhD, Texas A&M University, College Station, TX

4:15 - 4:45pm

Modeling Predictions of Arterial Adaptations to Continuous and Induced Pulse Mode Left Ventricular Assist Devices in Heart Failure

Phuc Nguyen, PhD, CEO, Prolegon Biotechnologies, Houston, TX

4:45 - 5:00pm

BIOENGINEERING ABSTRACTS

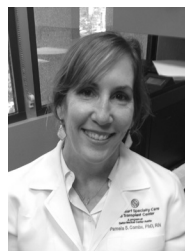
4:45 - 5:00pm

In-vitro Feasibility Study of a Pulsatile Intra-ventricular Assist Device Mimicking Jellyfish-like Movement

Wu Tingting, MD, Soochow University, Suzhou, China

3:45 - 5:00pm **Regency D - West Tower - Gold Level**

VAD 1- Strategies for Every Day Life Within a VAD Program



**VAD Program Chair
Pamela Combs, PhD, RN**

Advocate Christ Medical Ctr, Oak Lawn, IL

Co-Chairs:

Stephen Koenig, PhD, University of Louisville, Louisville, KY
Lori Edwards, MSN, RN, INOVA Fairfax Hospital, Falls Church, VA

3:45 - 4:00pm

Integration Of Processes Within VAD Programs

Pamela Combs, PhD, RN, Advocate Christ Medical Ctr, Oak Lawn, IL

4:00 - 4:15pm

Telemonitoring: Challenges and Benefits

Michelle Kassemos, BSN, RN, University of California San Francisco, San Francisco, CA

4:15 - 4:30pm

Enhancing Difficult MCS Team Decisions

Geetha Bhat, PhD, MD, Advocate Christ Medical Center, Oak Lawn, IL

4:30 - 4:45pm

Future Challenges with MCS

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

4:45 - 5:00pm

Discussion

3:45 - 5:00pm **Regency C - West Tower - Gold Level**

PULMONARY 2 - Lung Injury Mini-Summit - An ASAIO Innovation Opportunity

Chair:

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

3:45 - 4:10pm

Keynote:

Acute Lung Injury - From Genes to Tissue to Devices - A Role for Precision Medicine in Drug/Device Therapeutics

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

4:10 - 4:35pm

Pathobiology of Acute Lung Injury - What Are The Targets For Intervention?

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

4:35 - 5:00pm

Devices and Lung Injury - Ventilators/Oxygenators and Beyond - Foe or Friend? Can We Build Devices to Help?

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

3:45 - 5:15pm **Acapulco - West Tower - Gold Level**

RENAL 2 - Beyond (Today's) Dialysis

Co-Chairs:

Shuvo Roy, PhD, University of California San Francisco, San Francisco, CA

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

3:45 - 4:00pm

Living Membranes

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

4:00 - 4:15pm

Nanoporous Membranes

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

4:15 - 4:30pm

Nanodialysis Technology and Experience

Karin Gerritsen, MD, PhD, UMC Utrecht, Netherlands

4:30 - 4:45pm

Hemodialysis on the Run - WAK

Victor Gura, MD, Cedar-Sinai Medical Ctr, Los Angeles, CA

4:45 - 5:00pm

Update on the AWAK for PD

Martin Roberts, PhD, AWAK Technologies, Inc., North Hills, CA

5:00 - 5:15pm

The Regulatory Viewpoint

Murray Sheldon, MD, FDA, Silver Spring, MD

3:45 - 5:00pm **Toronto - West Tower - Gold Level**

PEDIATRIC 1 - Short-Term MCS Bridge Debate

Co-Chairs:

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

Michael Sobieski, RN, CCP, University of Louisville Jewish Hospital, Louisville, KY

3:45 - 3:55pm

MPELLA Devices

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

3:55 - 4:05pm

PediMag

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

4:05 - 4:15pm

Rotaflo

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

4:15 - 4:25pm

ECMO Is Best

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

4:25 - 4:30pm

Discussion

4:30 - 5:00pm

PEDIATRIC ABSTRACTS

4:30 - 4:45pm

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

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

4:45 - 5:00pm

A Rising Tide Lifts All Boats:

Ventricular Assist Device Utilization is Associated with Improved Overall Center Waitlist Survival

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

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

Admission by Ticket

Riverside West Exhibit Hall - East Tower - Purple Level

8:00am - 5:00pm **Riverside West Exhibit Hall - East Tower - Purple Level**

ABSTRACT POSTER PRESENTATIONS

Bioengineering Posters

Poster Numbers

101 A Novel Tissue Engineered Conduit for Use in Assisted Fontan Circulation

Christopher Broda, MD, Baylor College of Medicine, Houston, TX

102 Novel Islet Macroencapsulations Devices for the Treatment of Diabetes Type 1

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

103 Impact of Physiologic Pulsatile Flow on Microcirculation During Cardiopulmonary Bypass

Gengo Sunagawa, MD, Cleveland Clinic, Cleveland, OH

104 Treating Short Bowel Syndrome Through Enterogenesis: Defining a Protocol for Safe Bowel Distraction

Meredith Barrett, MD, University of Michigan, Ann Arbor, MI

105 Controlling the Variance of Normalized Hemolysis Index from *in vitro* Hemolysis Testing

Luidi Zhang, PhD, Soochow University, Suzhou, China

106 Development of the Sequential Flow Pump: Principle of the Sequential Pressurization and Hemolysis Results in Second Model

Shintaro Hara, PhD, University of Tokyo, Tokyo, Japan

107 The Effects of S-Nitrosothiol on Thrombin-induced Fibrin Formation

Terry Major, MS, University of Michigan, Ann Arbor, MI

108 A Novel Generic Model for the Investigation of Intraventricular Flow Patterns in Individual Hearts

Kristin Hugenroth, Institute of Applied Medical Engineering, Aachen, Germany

- 109 Healthcare Research Information Access: Current Technologies, Practices, Gaps & Recommendations**
Stephanie Zawada, University of Arizona, Tucson, AZ
- 110 A Method to Increase PLA Scaffold Radiopacity Within Cardiac Vessels**
Anne-Marie Ginn, Texas A&M University, College Station, TX
- 111 Impact of IABP Timing on Aortic Hemodynamics: A Computational Investigation**
Gionata Fragomeni, PhD, Magna Graecia University, Catanzaro, Italy
- 112 Effect of Leaflet Orientation of Prosthetic Bi-leaflet Mechanical Heart Valve on Flow Through Aorta**
Satheesh Kumar, MD, Indian Institute of Technology Bombay, Mumbai, India
- 113 Aortic Valve Pressures During Left Ventricular Assist Device Support in a CFD-validated Model**
Gionata Fragomeni, PhD, Magna Graecia University, Catanzaro, Italy
- 114 Polymer Processing Techniques Impact Vascular Cell Behavior: How You Form It Matters**
Kaitlyn Ammann, BS, University of Arizona, Tucson, AZ
- 115 Computational Fluid Dynamics to Guide Impeller Refinements for Reducing the Potential for Thrombus Formation**
Mark Goodin, SimuTech Group Inc., Hudson, OH
- 116 Galvanotaxis: an Electroceutical Strategy for Modulating Vascular Smooth Muscle Response to Injury**
Kaitlyn Ammann, BS, University of Arizona, Tucson, AZ
- 117 Novel Implantable Roller Pump to Treat Heart Failure-induced Lymphedema**
Samantha Cassel, Drexel University, Philadelphia, PA
- 118 Artificial Deep Neural Networks to Estimate Hemodynamic Parameters During Mechanical Circulatory Support Without Flow or Pressure Sensors**
Barry Kuban, BSEE, Cleveland Clinic, Cleveland, OH
- 119 Fatty Acids Influence Platelet Membrane Fluidity and Shear-mediated Activation**
Alice Sweedo, University of Arizona, Tucson, AZ
- 120 Development of an ex-vivo Perfusion System Suitable for Small Animal Vascularized Composite Allograft Models**
Emre Gok, MD, University of Michigan, Ann Arbor, MI
- 121 Metabolites Associated with Improved Survival in Alcoholic Hepatitis Patients are Enriched in ELAD-treated Subjects**
Lee Landeen, PhD, Vital Therapies, Inc., San Diego, CA
- 122 Drag-reducing Polymers for the Shunting of Rigid Erythrocytes Past Microvessel Bifurcations: a Potential Treatment for Sickle Cell Disease (SCD)**
Dan Crompton, BS, University of Pittsburgh, Pittsburgh, PA
- 123 Mechanical and Rheological Characterization of RBCs Following Hemoglobin Replacement for Potential Treatment of Sickle Cell Disease**
Luke Ziegler, BS, McGowan Institute of Regenerative Medicine, Pittsburgh, PA
- 124 Target-specific Electrospinning: a Novel Means of Creating Designer Fibrous Constructs **Presentation Cancelled****
Daniel Palomares, BS, University of Arizona, Tucson, AZ
- 125 Inventive Knowledge Flow in Medical Technology Development: Patent or Publish?**
Michael DiCaro, BS, University of Arizona, Tucson, AZ
- 126 Additive Manufacturing as a Development Tool for a Rotary Blood Pump**
J. Ryan Stanfield, PhD, University of Utah, Salt Lake City, UT

Cardiac Posters

- 127 Infectious Adverse Events Associated with Durable Mechanical Circulatory Support Devices, a Ubiquitous Achilles' Heel**
Jose Mendez, MD, Baylor University Medical Ctr, Dallas, TX
- 128 Readmission Rates in African-Americans Patients Supported with Left Ventricular Assist Devices (LVADs) After Hemodynamic Unloading**
Nir Uriel, MD, MSc, University of Chicago Medicine, Chicago, IL
- 129 Design Consideration of EVAHEART®2 LVAD Inflow Cannula**
Tadashi Motomura, MD, PhD, Evaheart Inc., Houston, TX
- 130 Weight Loss in Patients with Left Ventricular Assist Device Positioned Above or Below the Diaphragm for Patients with Severe Heart-Failure: Does it Make a Difference?**
David Chang, MD, Cedars-Sinai Heart Institute, Los Angeles, CA
- 131 Left Ventricular Assist Device Versus Total Artificial Heart: Do Patients Report the Same Energy Level?**
Heather Barone, RN, Cedars-Sinai Medical Ctr, Los Angeles, CA
- 132 Unplanned Readmissions 6 Months Post Discharge: Left Ventricular Assist Device Versus Total Artificial Heart**
Newman Huie, BSN, Cedars-Sinai Heart Institute, Los Angeles, CA
- 133 A Comparison of Driveline Infections: Left Ventricular Assist Device vs. Total Artificial Heart **Presentation Cancelled****
Carmelita Runyan, RN-BC, CCRN, Cedars-Sinai Heart Institute, Los Angeles, CA
- 134 Cardiac Transplant Outcomes in Patients on Continuous Flow Left Ventricular Assist Device Support**
John Spratt, MD, University of Minnesota, Minneapolis, MN
- 135 The Utility of the Prognostic Nutritional Index in Hemodialysis Dependent Patients Who Undergo Cardiovascular Surgery**
Soki Kurumisawa, MD, Jichi Medical University, Tochigi, Japan
- 136 Global VAD Coordinator Practices with the Use of the HeartWare HVAD System Waveforms and Logfiles**
Thomas Schlöglhofer, BSc, Medical University of Vienna, Vienna, Austria
- 137 New Quantitative Method for Evaluating Driveline to Skin Adhesion in Ventricular Assist Systems**
Tomoyuki Yambe, MD, PhD, Tohoku University, Sendai, Miyagi, Japan
- 138 Our Experience with Sleep Apnea Syndrome After Implantation of Left Ventricular Assist Device **Presentation Cancelled****
Puneet Garacha, MD, Baylor University Medical Ctr, Dallas, TX
- 139 Mixing Phenomena During Interaction of Internal and External Circulations - Developing a Combined Simulation Platform of the Human Circulation**
Philippe Grieshaber, MD, Giessen University Hospital, Giessen, Germany
- 140 Promoting Growth Through Partnership: ICCAC's VAD Mentorship Program**
Rasha Adam, BS, ANW, Plymouth, MN
- 141 Construction and Evaluation of a VAD Care App as Self-management Tool for Patients with Ventricular Assist Devices (VADs)**
Jesus Casida, PhD, RN, APN-C, University of Michigan, Ann Arbor, MI
- 142 Using HeartWare HVAD Log Files to Observe Patient Behavior and Battery Function**
Kristen Kiehl, BS, Aurora St. Luke's Medical Center, Milwaukee, WI
- 143 Mechanical Circulatory Support Nurse Practitioners' Work Intensity, Role Stress, and Burnout**
Jesus Casida, PhD, RN, APN-C, University of Michigan, Ann Arbor, MI
- 144 Use of a Mock Ventricle to Simulate Functionality of the Fibrillating Heart for Testing Direct Cardiac Compression Devices**
Yirong Zhou, MD, Wright State University, Dayton, OH

- 145 Reduction of Mitral Regurgitation Following Continuous Flow Left Ventricular Assist Device Implantation is not Associated with Improved Clinical Outcomes**
Renaldo Williams, MD, Vanderbilt University Medical Ctr, Nashville, TN
- 146 Patient and Caregiver Activation May Play a Role in Outcomes of Patients Who Receive Left Ventricular Assist Devices**
Kyle Bass, MD, Baylor University Medical Ctr, Dallas, TX
- 147 Early Diagnosis of Device Thrombosis in Left Ventricular Assist Device Patients**
Joanna Grabska, Medical University of Vienna, Vienna, Austria
- 148 Longitudinal Neutrophil to Lymphocyte Ratio Assessment After Left Ventricular Assist Device Implantation**
Geetha Bhat, MD, PhD, Advocate Christ Medical Ctr, Oak Lawn, IL
- 149 Complications in Thyroid Disorder Patients with Left Ventricular Assist Devices**
Hannah Voorhees, BS, University of Maryland Medical Ctr, Baltimore, MD
- 150 Impact of Diuretic Dosage on Post-operative Right Heart Failure in LVAD Patients**
Jaclyn Wu, BS, Ohio State University, Columbus, OH
- 151 Effect of Left Ventricle Size on LVAD Thrombosis Risk**
Venkat Keshav Chivukula, PhD, University of Washington, Seattle, WA
- 152 Thromboelastography Platelet Mapping (TEG-PM) Based Anticoagulation Protocol for Mechanical Circulatory Support Devices (MCSD): a Follow Up Study**
Oksana Volod, MD, Cedars Sinai Medical Ctr, Los Angeles, CA
- 153 Case Series of a Novel Peripheral Right Ventricular Assist Device for Acute Right Heart Failure**
Amber Melvin, MD, University of Rochester, Rochester, NY
- 154 Long-term Impacts of Reducing Pulmonary Vascular Resistance with VAD Therapy in Bridge-to-transplant Patients**
Jennifer J. Chung, MD, Hospital at University of Pennsylvania, Philadelphia, PA
- 155 Long Term Outcomes of Elderly Patients Receiving Continuous Flow Left Ventricular Support**
Nicolas Brozzi, MD, University of Miami, Miami, FL
- 156 Ventricular Assist Device Cannulation Strategy for the Failing Single Ventricle: Atrium or Ventricle?**
Katsuhide Maeda, MD, PhD, Stanford University, Stanford, CA
- 157 Implantable Hemodynamic Monitoring in Patients with an LVAD**
Lauren Wolman Ahdut, BS, Scripps Health, San Diego, CA
- 158 Postoperative Acute Kidney Injury After Implantation of Left-ventricular Assist Device: a Comparison of Heartmate II and HeartWare Devices**
Andre Critsinelis, BS, BA, Baylor College of Medicine, Houston, TX
- 159 Hemodynamic Effects of a Compact Maglev Centrifugal LVAD Under Pulsatile Operation: an *in-vitro* Study**
Po-Lin Hsu, PhD, Soochow University, Suzhou, Jiangsu, China
- 160 Lactate Dehydrogenase Levels as Predictors of Acute Kidney Injury in the Setting of Pump Hemolysis in LVAD Patients**
Ghulam Murtaza, MD, Advocate Christ Medical Ctr, Oak Lawn, IL
- 161 PCC Use in VAD Implantation**
Yaron Barac, MD, Duke Medical Ctr, Durham, NC
- 162 Left Ventricular Assist Device Driveline Infection and Obesity**
Mehmet H. Akay, University of Texas Health Science Center, Houston, TX
- 163 Inflow Cannula Position Variability Between 2nd and 3rd Generation Left Ventricular Assist Devices**
Jama Jahanyar, MD, Mayo Clinic, Phoenix, AZ

- 164 Evaluation of Doxycycline's Effect on vWF and Platelets in the Presence of Haemolysis**
Christian Robinson, Swansea University, Swansea, United Kingdom
- 165 Elevated Heart Rate in Left Ventricular Assist Device (LVAD) Patients: Good or Bad?**
Alexandra Eisenbeiss, BS, Intermountain Medical Center, Murray, UT
- 166 Efficacy of Tolvaptan Therapy in Stage D Heart Failure Patients After LVAD Implantation**
George Gavrilos, Pharm D, MA, Advocate Christ Medical Center, Oak Lawn, IL
- 167 Single Center Experience of Bivads**
Gregory Macaluso, MD, Advocate Christ Medical Center, Oak Lawn, IL
- 168 Time-related Risk of Adverse Events During Long-term Support with HeartMate II**
Salvatore Poddi, MD, Mayo Clinic, Rochester, MN

Pediatric Posters

- 169 Antithrombotic Guideline for the PumpKIN Trial: Design and Rationale**
Patti Massicotte, MD, University of Alberta, Edmonton, Alberta
- 170 Durable Continuous Flow VAD Therapy Induces Pathogenic Changes in AV Leaflets: Gene Expression Changes in Common with Calcific Aortic Valve Disease Leaflets**
Katsuhide Maeda, MD, PhD, Stanford University, Stanford, CA
- 171 Effect of Inhaled Nitric Oxide on Hemodynamics in Lambs with Superior Cavopulmonary Shunt**
Hitoshi Kanamitsu, MD, Stanford University, Stanford, CA
- 172 Perfluorocarbons Promote Type II Pneumocyte Maturation and Surfactant Protein Synthesis in Preterm Lambs Supported on an Artificial Placenta**
Elena Perkins, BS, University of Michigan, Ann Arbor, MI
- 173 Cardiac Injury in Premature Lambs Supported by the Artificial Placenta**
Elena Perkins, BS, University of Michigan, Ann Arbor, MI
- 174 *In vitro* Characterization of the Pittsburgh Pediatric Ambulatory Lung Device**
Ryan Orizondo, PhD, University of Pittsburgh, Pittsburgh, PA
- 175 Platelet Aggregation Results in Chronic Studies with the Penn State Pulsatile Pediatric Ventricular Assist Device**
Branka Lukic, MS, Penn State University, Hershey, PA
- 176 Diamond in the Rough? Outcomes of VAD Implantation as a Bridge-to-decision in Children and Young Adults with Social Concerns**
Chet Villa, MD, Cincinnati Children's Hospital, Cincinnati, OH
- 177 Modeling Fetal and Neonatal Circulations with and Without Pulmonary Atresia**
Juliana Sánchez-Posada, PhD, Universidad de los Andes, Bogotá, Colombia

Friday, JUNE 23

8:00am - 12:00pm **Regency A-C - West Tower - Gold Level**
GENERAL SESSION 2

Co-Chairs:

Jonathan Haft, MD, University of Michigan, Ann Arbor, MI
Marvin Slepian, MD, University of Arizona, Tucson, AZ

8:00 - 8:30am

ASAIOfyi - for young innovators
Rapid Fire Presentations

8:00 - 8:05am

Using Compliant Oxygenators to Improve Flow Conditions in Pulsatile ECMO Circuit
Philine Ritter, MSc, enmodes GmbH, Aachen, NRW, Germany

8:05 - 8:10am

RAS-Q - A Novel Passive Right Heart Assist System
Tim Kaufmann, PhD, RWTH Aachen University, Aachen, NRW, Germany

8:10 - 8:15am

The Influence of Anastomosis Angle of Outflow Graft to Aorta on Hemodynamics of Aortic Valve Regurgitation in Left Ventricular Assist Device Support
Kei Iizuka, MD, National Cerebral & Cardiovascular Center, Suita, Osaka, Japan

8:15 - 8:20am

Effect of Eccentricity in a Blood Shearing Device Using Transient Cfd Analysis
Peng Wu, PhD, Soochow University, Suzhou, Jiangsu, China

8:20 - 8:25am

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

8:30 - 9:30am

ASAIOfyi - for young innovators
Student Design Competition Presentations

8:30 - 8:37am

Urinary Catheter Redesign
Thomas Wright, BME, North Carolina State University, Raleigh, NC

8:37 - 8:44am

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

8:44 - 8:51am

Self-Clearing VP Shunt
Jonathan Freund, North Carolina State University, Raleigh, NC

8:51 - 8:58am

The "MICELI" - Point of Care Microfluidic Aggregometry System
Andrea Santoleri, Politecnico di Milano, Milano, Italy

8:58 - 9:05am

Adjustable Trocar
Zaid Atto, BAsC, EngSci, University of Toronto, Toronto, Ontario

9:05 - 9:12am

Hydraulic Cardiac Sleeve
Rachel McCoy, Carnegie Mellon University, Pittsburgh, PA

9:12 - 9:19am

Extrusion 3D Printing of a Microfluidic Chip for Use in Medical Research
Rachelle Walter, BS, University of Colorado, Denver, CO

9:19 - 9:30am

Discussion

9:30 - 9:50am **KEYNOTE ADDRESS**



Roderic Pettigrew, MD, PhD
Director NIBIB/NIH, Bethesda, MD

Medical Devices, Artificial Organs, Organs-On-A Chip And Beyond: How To Impact Healthcare In The Future - Perspectives From The NIH

Roderic Pettigrew, MD, PhD, Director NIBIB/NIH, Bethesda, MD

9:50 - 10:15AM **KEYNOTE ADDRESS**



John Rogers, PhD
Northwestern University, Evanston, IL

Stretching Our Way into the Future - Flexible and Stretchable Electronics - New Materials and Sensors for Medicine

John Rogers, PhD, Northwestern University, Evanston, IL

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

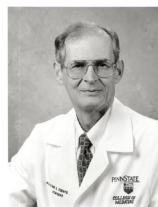
Riverside West Exhibit Hall - East Tower - Purple Level

10:15 - 11:00am **Visit Posters**

Riverside West Exhibit Hall - East Tower - Purple Level

11:00 - 12:00pm **Regency A-C - West Tower - Gold Level**

GENERAL SESSION 2 (continued)



William S. Pierce, MD
Penn State Hershey College of Medicine, Hershey, PA

11:00 - 11:30am

ASAIO History Group

Scientific Biography of William S Pierce, MD

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

KEYNOTE ADDRESS



Jack Copeland, MD
University of Arizona, Tucson, AZ

11:30am-12:00pm

ASAIO Hastings Lecture

The Total Artificial Heart - Past, Present and Future

Jack Copeland, MD, University of Arizona, Tucson, AZ

Introduction

Richard Smith, MSEE, University of Arizona, Tucson, AZ

12:00 - 12:15pm

Fellowship Award Announcements

12:15 - 1:30pm LUNCH BREAK

1:30 - 3:00pm **Regency A - West Tower - Gold Level**

CARDIAC 3- Acute Temporary Support

Co-Chairs:

Jonathan Rich, MD, Northwestern University, Chicago, IL

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

1:30 - 1:45pm

CASE #1:

INTERMACS I Patient on Short-Term Support: Transition to Durable System and Timing

Ulrich Jorde, MD, Montefiore Medical Center, Bronx, NY

1:45 - 1:50pm

Discussion

1:50 - 2:05pm

CASE #2:

Postcardiotomy Cardiogenic Shock: What, When, Where and Why?

Aly El Banayosy, MD, INTEGRIS Baptist Medical Center, Oklahoma City, OK

2:05 - 2:15pm

Discussion

2:15 - 3:00pm

CARDIAC ABSTRACTS

2:15 - 2:30pm

Concomitant Mitral Valve Procedures at the Time of Continuous-flow Left Ventricular Assist Device Implantation in Patients with Preoperative Severe Mitral Regurgitation

Masashi Kawabori, MD, Texas Heart Institute, Houston, TX

2:30 - 2:45pm

High-molecular-weight von Willebrand Factor Multimer Loss in Patients on Short Term Mechanical Circulatory Support Devices

Oksana Volod, MD, Cedars-Sinai Medical Center, Los Angeles, CA

2:45 - 3:00pm

Heartware™ vs. Heartmate II™: A Comparison of Post-implant Surgical Recovery

Alexandra Eisenbeiss, BS, Intermountain Medical Center, Murray, UT

1:30 - 3:00pm **Regency B - West Tower - Gold Level**

BIOENGINEERING 3

Co-Chairs:

Tom Sugar, PhD, ASU Polytech Engineering Program, Mesa, AZ

Arun Jayaraman, PhD, PT, Northwestern University, Chicago, IL

1:30 - 1:45pm

Mobility Exoskeletons, Robots: Artificial Organs Too!

Marvin J. Slepian, MD, University of Arizona, Tucson, AZ

1:45 - 2:00pm

Exoskeletons & Augmentation Systems - Present and Emerging Technology and Applications

Tom Sugar, PhD, Arizona State University, Mesa, AZ

2:00 - 2:15pm

The Hidden Mechanics of Human Locomotion and Relevance to Wearable Robots

Elliot J. Rouse, PhD, Rehabilitation Institute of Chicago, Chicago, IL

2:15 - 2:30pm

Medical and Rehab Applications of Exoskeletons and Robotics

Arun Jayaraman, PhD, PT, Northwestern University, Chicago, IL

2:30 - 2:45pm

Funding Opportunities and Commercialization of Robotics and Mobility Systems

Bruce Floersheim, PhD, GoX Studios, Tempe, AZ

2:45 - 3:00pm

Q&A

1:00 - 3:00pm **Regency D - West Tower - Gold Level**

VAD 2 Shark Tank

Chairs:

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

Karl Nelson, RN, MBA, INTEGRIS Baptist Medical Center, Oklahoma City, OK

Mark Slaughter, MD, University of Louisville

1:00 - 1:15pm

a. VAD Equipment Management

Kathleen Schultz, BSBME, MBA, Aurora St. Luke's Medical Ctr, Milwaukee, WI

1:15 - 1:30pm

b. Sustainable Staffing Models

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

1:30 - 1:45pm

c. Keeping Rehab, SNF and Dialysis Centers Ready to Receive

Carole Ballew, MSN, UVA, Charlottesville, VA

1:45 - 2:00pm

d. Self Care Management Model

Jesus Casida, PhD, RN, University of Michigan, Ann Arbor

2:00 - 2:15pm

e. Efficacy of a Thrombus Management Protocol

Mary Bradbury, PharmD, Inova Fairfax Hospital, Falls Church, VA

2:15 - 2:30pm

f. Importance of Understanding Why Patients Refuse DT LVAD

Matthias Loebe, MD, PhD, Miami Transplant Institute, Miami, FL

2:30 - 2:45pm

g. Outpatient Rehabilitation of VAD Patients & Monitoring Daily Life Activity

Thomas Schloeglhofer, BSc, Medical University of Vienna, Vienna, Austria

2:45 - 3:00pm

h. Orientation/Education of Team Members

Erin Justice, RN, MS, BSN, Medstar Heart and Vascular Institute, Washington, DC

1:30 - 3:00pm **Regency C - West Tower - Gold Level**

PULMONARY 3 - Bioartificial Lungs

Chair:

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

1:30 - 1:45pm

Dongfang Wang, MD, PhD, University of Kentucky, Lexington, KY

1:45 - 2:00pm

William Federspiel, PhD, University of Pittsburgh, Pittsburgh, PA

2:00 - 2:15pm

Panel Discussion

2:15 - 3:00pm

PULMONARY ABSTRACTS

2:15 - 2:30pm

Low Resistant Respiratory Assist System for Paracorporeal Lung Support: an *in-vivo* Study

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

2:30 - 2:45pm

***In-vitro* and *in-vivo* Chronic Studies of an Integrated, Wearable Blood Pump-lung**

Shalv Madhani, BS, University of Pittsburgh, Pittsburgh, PA

2:45 - 3:00pm

A CFD Model to Predict Oxygen Transfer in Artificial Lungs

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

1:30 - 3:00pm **Acapulco - West Tower - Gold Level**

RENAL 3 - Quantum Leaps: Merging Biology & Technology

Co-Chairs:

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

1:30 - 1:50pm

Bioengineering of Renal Membranes Using Supramolecular Biomaterials

Patricia Dankers, PhD, Eindhoven University of Technology, Netherlands

1:50 - 2:10pm

Microfluidic Diagnostics

Ian Papautsky, PhD, University of Illinois, Chicago, IL

2:10 - 2:30pm

Bioengineered Organs

Jason Wertheim, MD, PhD, Northwestern University, IL

2:30 - 3:00pm

RENAL ABSTRACTS

2:30 - 2:45pm

Small Animal Study and Hemocompatibility of Small Form Factor Microfluidic Filtration System with Nitride Membranes

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

2:45 - 3:00pm

Update on Continuous Electrolyte and pH Monitoring

Fokko Wieringa, PhD, imec, Eindhoven, Noord-Brabant, Netherlands

1:30 - 3:00pm **Toronto - West Tower - Gold Level**

PEDIATRIC 2: ECMO

Co-Chairs:

Ronald Hirschl, MD, CS Mott Children's Hospital, Ann Arbor, MI
Meredith Barrett, MD, University of Michigan - ECMO Lab, Ann Arbor, MI

1:30 - 1:45pm

Quadrox as a Central Shunt

David Hoganson, MD, Boston Children's Hospital, Boston, MA

1:45 - 2:00pm

ECMO and the FDA: Update

Claire Hambright, BS, FDA, Silver Spring, MD

2:00 - 2:20pm

DEBATE: USING A "RIGHT SIZED" ECMO CIRCUIT

Adult Circuits Are Fine for Small Patients

Neale Zingle, BS, LP, CCP, Lurie Children's Hospital, Chicago, IL

ECMO Circuits Should Be Appropriately Sized for the Patient

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

2:20 - 3:00pm

PEDIATRIC ABSTRACTS

2:22 - 2:34pm

Temporary Ventricular Assist Devices as a Bridge to Transplantation: Assessing the Impact of an Evolving Strategy

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

2:34 - 2:46pm

Development Update on the Ension pCAS System

Mark Gartner, PhD, MBA, Ension Inc., Pittsburgh, PA

2:46 - 2:58pm

Perfluorocarbons and the Artificial Placenta: Preventing Injury and Promoting Lung Development

Joseph Church, MD, University of Michigan Health System, Ann Arbor, MI

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

Riverside West Exhibit Hall - East Tower - Purple Level

3:00 - 3:45pm

Visit Posters

Riverside West Exhibit Hall - East Tower - Purple Level

3:45 - 5:00pm Regency A - West Tower - Gold Level

CARDIAC 4-Debate-VADS: Options for the Elderly

Co-Chairs:

James Long, MD, PhD, INTEGRIS Baptist Medical Center, Oklahoma City, OK
Randall Starling, MD, Cleveland Clinic, Cleveland, OH

3:45 - 4:05pm

Pro: Heart Transplantation Should Be Favored Over Durable VAD Strategy

Emma Birks, MD, PhD, University of Louisville, Louisville, KY

4:05 - 4:25pm

Con: All Elderly Patients Should Be Approached with VADS First

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

4:30 - 5:00pm

CARDIAC ABSTRACTS

4:30 - 4:45pm

Bridging to Heart Transplantation (BTT) in Septuagenarians with LVADs

Eugene DePasquale, MD, Ronald Reagan UCLA Medical Center, Buena Park, CA

3:45 - 5:00pm Regency B - West Tower - Gold Level

BIOENGINEERING 4

Co-Chairs:

Peter Wearden, MD, PhD, Nemours Children's Hospital, Orlando, FL
George Pantalos, PhD, University of Louisville, Louisville, KY

3:45 - 4:15pm

Managing the Future of Cardiovascular Imaging in Children

Rajesh Krishnamurthy, MD, Nationwide Children's Hospital, Columbus, OH

4:15 - 4:45pm

Falling in Love With Your Own Technology! Pros, Cons and Hitchhiking

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

4:45 - 5:00pm

Discussion

3:45 - 5:00pm *Regency C - West Tower - Gold Level*

PULMONARY 4 - ELCS and Big Data: Driving Innovation and Outcome

Chair:

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

3:45 - 4:00pm

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

4:00 - 4:15pm

James Blum, MD, Emory University Hospital, Atlanta, GA

4:15 - 4:30pm

Ryan Barbaro, MD, University of Michigan, Ann Arbor, MI

4:30 - 4:45pm

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

4:45 - 5:00pm

Panel Discussion

3:45 - 5:00pm *Acapulco - West Tower - Gold Level*

RENAL 4 - Vascular Access: From Bedside to Bench to Bedside

Co-Chairs:

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

3:45 - 4:00pm

Biology Of Vascular Access Dysfunction

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

4:00 - 4:15pm

Novel Therapies for Vascular Access Dysfunction

Joris Rotmans, MD, PhD, Leiden University Medical Ctr, Leiden, Netherlands

4:15 - 4:30pm

Clinical Trials in Vascular Access: Time for a Change

Gerald Beathard, MD, PhD, University of Texas Medical Branch, Houston, TX

4:30 - 4:45pm

Patient Perspectives on Vascular Access: Not to Be Forgotten

Terry Foust Litchfield, Lifeline, Vernon Hills, IL

4:45 - 5:00pm

Discussion

3:45 - 5:00pm *Toronto - West Tower - Gold Level*

PEDIATRIC 3 - Beyond Bridge to Transplant

Co-Chairs:

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

3:45 - 4:00pm

Destination Therapy

Jenna Murray, MSN, CPNP-AC, Lucile Packard Children's Hospital, Palo Alto, CA

4:00 - 4:15pm

Psychosocial Issues for VAD Patients: Sex, Drugs, and Rock n' Roll

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

4:15 - 4:30pm

Remote Monitoring

Holger Buchholz, MD, Stollery Children's Hospital, Edmonton, Alberta

4:30 - 4:45pm

Home Echo

David Rosenthal, MD, Stanford University, Palo Alto, CA

4:45 - 5:00pm

End of Life Issues

Beth Kaufman, MD, Stanford University, Palo Alto, CA

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

8:00am - 5:00pm *Riverside West Exhibit Hall - East Tower - Purple Level*

ABSTRACT POSTER PRESENTATIONS

Poster Numbers

Bioengineering Posters

- 178 Shear Induced Degradation of Signal Molecules in PI3K-Akt Pathway in Human Platelets**
Shirong Zheng, MD, University of Louisville, Louisville, KY
- 179 Controlled Gas Exchange in Whole Lung Bioreactors**
Alexander Engler, MS, Yale University, New Haven, CT
- 180 The Platelet Activity State Assay Can Detect Shear-mediated Platelet Activation Associated with Thrombosis in LVAD Patients**
Filippo Consolo, PhD, Università Vita Salute, Milano, Italy
- 181 Development of Axial Flow Blood Pumps That Implanted at Aortic Valve Position to Realize Concept of Valvo Pump**
Eiji Okamoto, PhD, Tokai University, Sapporo, Hokkaido, Japan
- 182 Long-term Use Assessment of the Apico-aortic Blood Pump: Bearing System Analysis**
Bruno Utiyama, PhD, Instituto Dante Pazzanese de Cardiologia, São Paulo, Brazil
- 183 The Progress in the Sputnik Ventricular Assist Device Development**
Dmitry Telyshev, PhD, National Research University of Electronic Technology, Zelenograd, Moscow, Russia
- 184 Muscle-powered Counterpulsation VAD for Long-term Cardiac Support**
Jooli Han, Carnegie Mellon University, Pittsburgh, PA
- 185 Open Storage Effect on Nitric Oxide Releasing Materials**
Kagya Amoako, PhD, University of New Haven, West Haven, CT
- 186 Comparison of Large-eddy and Reynolds-averaged Navier-stokes Simulations Regarding Their Potential to Predict Hemolysis in Blood Pumps**
Benjamin Torner, Institute of Turbomachinery, Rostock, Germany
- 187 Asymmetric Membranes for Extracorporeal Blood Circulation Devices**
Monica Faria, PhD, Universidade de Lisboa, Lisbon, Portugal
- 188 Effect of Turbulent Flow on von Willebrand Factor**
Choon-Sik Jhun, PhD, Penn State College of Medicine, Hershey, PA
- 189 ECG-synchronized Rotational Speed Change System Has Preventive Effect on Right Heart Failure During Continuous-flow LVAD Support**
Daichi Akiyama, MD, National Cerebral and Cardiovascular Center, Research Institute, Osaka, Japan

- 190 Comparative *in-vitro* Hemolysis as a Measurable Parameter for Minor Polishing Defect Diagnosis for a Compact Maglev LVAD**
Po-Lin Hsu, PhD, Soochow University, Suzhou, Jiangsu, China
- 191 Use of Robust Mock Circulatory Loops to Effectively Evaluate the Physiological Flow Performance of VADs**
Luke Herbertson, PhD, FDA, Silver Spring, MD
- 192 Artificial Shear Effect on Leukocytes at a Biomaterial Interface Using a Rheometer **Presentation Cancelled****
Gemma Radley, Calon Cardio - Technology Ltd., Swansea, United Kingdom
- 193 Prediction Method of Shear Induced Thrombus Formation on Pipe Orifice Flows by Hybrid CFD Methods with Considering Aggregation Process**
Masaaki Tamagawa, PhD, Kyushu Institute of Technology, Kitakyushu, Fukuoka, Japan
- 194 Progress in the Development of an Automatic Ventricular Assist Device with Pulse Augmentation and Regurgitant Flow Shutoff**
Nicole Byram, BS, Cleveland Clinic, Cleveland, OH
- 195 Methodology for the Design of Control System Based on the Concepts of Reliability Analysis and Inherent Safety for VADs**
Jeferson Dias, Jr., MD, University of São Paulo, São Paulo, Brazil
- 196 Method for Design a Control System Considering Fail and Safety Interaction Between VAD and Patient Body**
Andre Cavalheiro, Sr., PhD, Fundacao Santo Andre, Santo Andre, Brazil
- 197 Transient Power Elevation During Iron Dextran Infusion in a Patient with a Heart Mate II Continuous-flow Left Ventricular Assist Device: Case Report and *in vitro* Testing**
Paulino Alvarez, MD, Cleveland Clinic, Cleveland, OH
- 198 Wireless Mechano-Acoustic Characterization of Altered Flow in Ventricular Assist Devices**
Genevieve Messina, University of Arizona, Tucson, AZ
- 199 Annexin V Binding: a Useful Marker of Shear-mediated Platelet Activation Induced with Mechanical Circulatory Support**
Yana Roka Moija, PhD, University of Arizona, Tucson, AZ
- 200 Characterization of an Arteriovenous Mock Circulation Loop for Testing Intervascular Bioartificial Organs**
Jarrett Moyer, MD, University of California San Francisco, San Francisco, CA
- 201 Framework for Development of Hybrid Control System for Ventricular Assist Device**
Marcelo Silva, MD, Escola Polit écnica da USP, São Paulo, Brazil
- 202 Low Shear and Thromboresistance in the Synchronous Pulsatile Adult and Pediatric TORVAD**
Jeffrey Gohean, MSME, Windmill Cardiovascular Systems Inc., Austin, TX
- 203 Formation of Aggregates in Perfluorocarbon Emulsions When These are Diluted with Plasma Expanders**
Yissel Luengas, Universidad de los Andes, Bogot á, Colombia
- 204 A Bicameral Pump for Sustained Moderate Flow Extracorporeal Circulation**
Edward Leonard, PhD, Columbia University, New York, NY
- 205 Design and Development of a Hybrid Mock Circulation Loop for Hardware-in-the-loop Validation of Ventricular Assist Devices**
Ethan Rapp, University of Texas, Austin, TX
- 206 Stability of PEG and Zwitterionic Surface Modifications on PDMS PDMS**
Thomas Plegue, VA Ann Arbor Healthcare System, Ann Arbor, MI

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

Cardiac Posters

- 208 Motion-activated System for Better Chest Drainage: Bench Testing, *in vivo*, and First Clinical Experience Report**
Jamshid Karimov, MD, PhD, Cleveland Clinic, Cleveland, OH
- 209 Synchronized Paracorporeal Electromagnetic Pulsatile Pump Can Decrease Infarct Size in Porcine Model with Acute Myocardial Infarction**
Chi-Hsiao Yeh, MD, Chang Gung Memorial Hospital, Keelung, Keelung, Taiwan
- 210 International VAD Coordinator Team Compositions and Advanced Nurse Practitioners in VAD Teams**
Thomas Schlöglhofer, BS, Medical University of Vienna, Vienna, Austria
- 211 Space and Time Resolved Detection of Platelet Activation and von Willebrand Factor Conformational Changes in Deep Suspensions**
Jacopo Biasetti, PhD, Johns Hopkins University, Baltimore, MD
- 212 Changes in Hemodynamic and Pump-related Parameters in Regards to Posture in Calves Implanted with a Continuous-flow Total Artificial Heart**
Nicole Byram, BS, Cleveland Clinic, Cleveland, OH
- 213 Neutrophil to Lymphocyte Ratio Predicts Survival in Patients Supported with Extracorporeal Membrane Oxygenation**
Gardner Yost, MS, Advocate Christ Medical Center, Oak Lawn, IL
- 214 High Oxygen Partial Pressure Generates Reactive Oxygen Species and Pro-inflammatory Cytokines During Cardiopulmonary Bypass**
Yutaka Fujii, PhD, Niigata University of Health and Welfare, Niigata, Japan
- 215 Towards the Perfect Fit of VADs: Virtual Fitting and Hemodynamic Investigation**
Simon Sonntag, PhD, enmodes GmbH, Aachen, Germany
- 216 Continuous-flow Left Ventricular Assist Device Therapy in Adult Patients with Transposition of the Great Vessels**
Tadahisa Sugiura, MD, Texas Heart Institute, Houston, TX
- 217 Influence of Systemic Blood Pressure and LVAD Speed on Thrombogenicity of LVAD Therapy**
Venkat Keshav Chivukula, PhD, University of Washington, Seattle, WA
- 218 3D Printed Mitral Valve Models: Realistic Surgical Simulation**
Divneet Mandair, University of Arizona, Tucson, AZ
- 219 Thrombogenic Potential of Altered Hemodynamics at the Left Ventricular Apex-LVAD Cannula Interface: a Numerical Study**
Filippo Consolo, PhD, Università Vita Salute, Milano, Italy
- 220 Trend Analysis of the Recent Redemption Price of the Medical Devices in Japanese Insurance System**
Eiki Akagawa, PhD, National Cerebral & Cardiovascular Center, Suita, Japan
- 221 Optimal Cannula and Pump Position Associating with Better Left Ventricular Unloading and Clinical Outcome in Patients with HeartMate II Ventricular Assist Device**
Teruhiko Imamura, MD, PhD, University of Chicago Medicine, Chicago, IL
- 222 Geographic Distance Implications in LVAD Therapy Clinical Outcomes**
Dallin Rees, Intermountain Medical Center, Murray, UT

- 223 Thrombus Formation in Chest Tubes: Histological Analysis and High-speed Camera Visualization of Intraluminal Clot**
Jamshid Karimov, MD, PhD, Cleveland Clinic, Cleveland, OH
- 224 The Role of NOX4 (NADPH Oxidase 4) in Platelet Activation**
Naing Bajaj, BS, University of Arizona, Tucson, AZ
- 225 Non Coronary Aortic Valve Cusp Tear from Peripheral Imeplla When Utilized as Left Ventricular Vent for Patients on Extra Corporeal Membrane Oxygenation Support for Cardiogenic Shock**
Muhammad Masood, MD, Washington University in St. Louis, St. Louis, MO
- 226 Identifying the Origin of Gastrointestinal Bleeding in Left Ventricular Assist Devices- Is Timing of the Essence?**
Alyssa Choi, MD, University of Washington, Seattle, WA
- 227 HMII Driveline Fracture and Outflow Graft Bend Relief Disconnection with Pseudoaneurysm Formation**
Bessie Sycip, RN, Medstar Washington Hospital Center, Washington, DC
- 228 Effects of Using a Torsional Ventricular Assist Device (tVAD) on Regional Cardiac Mechanics**
Elaine Soohoo, MS, BME, Carnegie Mellon University, Pittsburgh, PA
- 229 Continuous Suction Monitoring Reveals High Probability of Suction in Well-adjusted VAD-outpatients**
Heinrich Schima, PhD, Medical University Vienna, Vienna, Austria
- 230 Modeling of Mechanical Circulatory Support Pump Interactions with the Variable Hemodynamic Environment**
David Horvath, BS, Cleveland Clinic, Cleveland, OH
- 231 Advantages of Integrating Pressure-regulating Devices into Mechanical Circulatory Support Pumps**
David Horvath, BS, Cleveland Clinic, Cleveland, OH
- 232 Versatile Potential of a New Rotary Blood Pump Heartmate 3 in Patients with Multiple Assist Device Related Complications**
Presentation Cancelled
Jens Garbade, MD, PhD, Heart Center Leipzig, Leipzig, Germany
- 233 Blood Trauma and Inflammation During Cardiopulmonary Bypass: The Role of Air and Negative Pressure**
Benjamin Carr, MD, University of Michigan, Ann Arbor, MI
- 234 Predictive Value of Preoperative Prealbumin on Outcomes in Patients Undergoing LVAD Implantation**
Andre Critsinelis, BS, Baylor College of Medicine, Houston, TX
- 235 Outcomes in Adult Patients with Advanced Heart Failure and Small Body Size Undergoing LVAD Implantation**
Nastasya Volkovicher,THI/BCM, Houston, TX
- 236 In vitro Modelling of Calcific Particles and Testbed for Cerebral Protection Devices (CPD) Under Physiological Conditions**
Catharina Lierath, MD, Institute of Applied Medical Engineering/ AME, Aachen, Germany
- 237 Renal Function with Long-term Support on a Durable Left Ventricular Assist Device**
Masatoshi Akiyama, MD, PhD, Tohoku University Hospital, Sendai, Japan
- 238 Percutaneous Assessment and Management of Outflow Graft Obstruction in Patients with Continuous Flow Left Ventricular Assist Devices: a Single Center Case Series**
Carlos Davila, MD, Tufts Medical Center, Boston, MA
- 239 Synchronization of a Soft Robotic Ventricular Assist Device to the Native Cardiac Rhythm Using an Epicardial Electrogram**
Nickolay Vasilyev, MD, Boston Children's Hospital, Boston, MA
- 240 Chronic Administration of Electrical Microcurrent to the Heart is Safe and Does Not Impair Cardiac Function**
Johannes Mueller, MD, Berlin Heals, Berlin, Germany
- 241 ECMO Utilization and Short-term Outcomes in Pediatric Patients with Congenital Heart Disease**
Alejandro Martinez Herrada, MD, Nicklaus Children's Hospital, Miami, FL
- 242 Management of Heart Failure Patients Based on Pulmonary Artery Pressure Measurements Using CardioMEMS - Single Center Experience**
Hema Krishna, MD, Medical College of Wisconsin, Milwaukee, WI
- 243 Six-minute Walk Distance Under 200 Meters Predicts 30-day Heart Failure Readmission**
Hema Krishna, MD, Medical College of Wisconsin, Milwaukee, WI
- 244 The Effect of Extreme Hemodilution with Crystalloids and Colloids on Platelet Aggregability**
Jan Simoni, PhD, Texas HemoBioTherapeutics & BioInnovation Center, Lubbock, TX
- 245 Impact of Multiple Sternotomies on Heart Transplant Survival**
Eugene DePasquale, MD, University of California Los Angeles, Los Angeles, CA
- 246 Evaluation of Late Follow-up in Patients with Pulmonary Insufficiency Submitted to Intervention to Correct the Tetralogy of Fallot in Cardiovascular Simulator**
Jeison Fonseca, PhD, Institute Dante Pazzanese of Cardiology, São Paulo, Brazil
- 247 Maximum Level of Mobility During Acute Mechanical Circulatory Support with Axillary Deployment of the Impella 5.0 is Associated with Improved Survival**
Michele Esposito, MD, Tufts Medical Center, Boston, MA
- 248 Outcomes of Patients with Acute Decompensated Heart Failure and the Relationship to Diuretic Induced Weight Loss - Single Center Experience**
Christopher Boyd, MD, Medical College of Wisconsin, Milwaukee, WI
- 249 Assessing Contraction Kinetics and Sarcomeric Protein Expression in Electrically Paced Engineered Heart Tissues**
Vic Keschrumrus, PhD, University of Arizona, Tucson, AZ
- 250 "Strategy Formulation" for the Assessment of Power Loss in the Total Cavopulmonary Connection Zone**
Sanjeev Dasrao Muskawad, MD, Indian Institute of Technology, Bombay, Mumbai, India

Pulmonary Posters

- 251 Lower Extremity Paralysis Related to Femoral Venous-arterial ECMO Support in Lung Transplant Candidates**
Gabriela Dincheva, BS, University of California San Francisco, San Francisco, CA
- 252 Effects of Pulsatile Blood Flow on Oxygenator Performance**
Niklas Steuer, MSc, RWTH Aachen, Aachen, NRW, Germany
- 253 Ex vivo Lung Perfusion: A Case Report of a Single-Lung Salvage After Judged Unsuitable for Transplantation During Procurement**
Fares Alghanem, BS, University of Michigan, Ann Arbor, MI
- 254 Development of an Ultra Compact Durable ECMO System and Evaluation in a Chronic Animal Experiment for Over 2 Weeks**
Nobumasa Katagiri, PhD, National Cerebral and Cardiovascular Center Research Institute, Suita, Japan
- 255 Determining Optimal Thoracic Artificial Lung Aspect Ratio Using Computational Fluid Dynamics Modeling**
Niyu Li, BS, Carnegie Mellon University, Pittsburgh, PA

FRIDAY, JUNE 23 (continued)

256 Effects of Hollow Fiber Oscillation on Artificial Lungs

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

257 The Advancing Front Model is Effective at Modeling Oxygen Transfer for Microchannel Artificial Lungs

Rei Ukita, BS, Carnegie Mellon University, Pittsburgh, PA

258 Successful Extra-corporeal Membrane Oxygenation (ECMO) in HIV-positive Patient

Mariam Abdelkader, MD, Wellspan - York Hospital, York, PA

259 Targeted FXII Inhibition for Localized Anticoagulation Effects in Artificial Lungs

Alida R. Cooke, BS, Carnegie Mellon University, Pittsburgh, PA

10:55 - 11:15am

Data from Oklahoma ECMO Network Model

Karl Nelson, RN, MBA, INTEGRIS Baptist Medical Ctr, Oklahoma City, OK

11:15 - 11:35am

Transition from ECMO to Durable MCS Devices: Criteria and Long-Term Results

Behzad Soleimani, Penn State Hershey Medical Ctr, Hershey, PA

11:35am - 12:00pm

Panel Discussion

12:00 - 1:10pm

LUNCH BREAK

1:10 - 2:45pm

SESSION III

1:10 - 1:30pm

Quality Measures for ECMO Programs

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

1:30 - 1:50pm

Difficult Cannulation: Tips and Tricks

Alireza Ghodsizad, MD, PhD, University of Miami, Miami, FL

1:50 - 2:10pm

rECMO: Programming Challenge and Clinical Results

Christoph Brehm, MD, Penn State Hershey Medical Ctr, Hershey, PA

2:10 - 2:30pm

ECMO Beyond Your Imagination

Michael Koerner, MD, PhD, INTEGRIS Baptist Medical Ctr, Oklahoma City, OK

2:30 - 2:45pm

Panel Discussion

2:45 - 3:00pm

BREAK

3:00 - 5:00pm

SESSION IV

3:00 - 3:20pm

ARDS: Lessons Learned from Recent Trials

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

3:20 - 3:40pm

VV ECMO in ARDS Patients: Excellent Outcomes

Christoph Brehm, MD, Penn State Hershey Medical Ctr, Hershey, PA

3:40 - 4:00pm

Prone vs VV ECMO Trial in ARDS Patients: Are We There Yet?

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

4:00 - 4:20pm

Screening and Infection Management in Adult ECMO Patients

Allison Nazinitsky, MD, INTEGRIS Baptist Medical Ctr, Oklahoma City, OK

4:20 - 4:40pm

Role of ECMO in Organ Donation

Christopher Wigfield, Advocate Christ Medical Ctr, Chicago, IL

4:40 - 4:55pm

Panel Discussion

4:55 - 5:00pm

Closing Remarks

SATURDAY, JUNE 24

8:00am - 5:00pm **ADULT ECMO COURSE** - Admission by Ticket
Regency D - West Tower - Gold Level



Course Director:

Aly El Banayosy, MD

INTEGRIS Baptist Med Ctr, Oklahoma City, OK

8:00 - 8:10am

Welcome

Aly El Banayosy, MD, INTEGRIS Baptist Med Ctr, Oklahoma City, OK

8:10 - 10:00am

SESSION I

8:10 - 8:30am

ELSO Report

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

8:30 - 8:50am

Hemocompatibility of Short-Term Support Devices

James Long, MD, PhD, INTEGRIS Baptist Medical Ctr, Oklahoma City, OK

8:50 - 9:10am

Biomaterials and Inflammatory Response in Adult ECMO Patients

Marvin Slepian, MD, University of Arizona, Tucson, AZ

9:10 - 9:40am

What Is in the Pipeline?

Martin Strueber, MD, Newark Beth Israel Medical Ctr, Newark, NJ

9:40 - 10:00am

Panel Discussion

10:00 - 10:15am

BREAK

10:15 - 12:00pm

SESSION II

10:15 - 10:35am

Approaching Cardiogenic Shock Patients Beyond Medical Management: Which Way to Go?

Aly El Banayosy, MD, INTEGRIS Baptist Medical Ctr, Oklahoma City, OK

10:35 - 10:55am

Impact of New Technology on Complications Profile

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

8:30 - 10:00am MEDICAL DEVICE ENTREPRENEUR'S FORUM

Gold Coast - West Tower - Bronze Level



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

Panelists:

H. David Humes, MD, University of Michigan, Ann Arbor, MI
Edward Berger, PhD, Larchmont Strategic Advisors, Chestnut Hill, MA
Eric Chen, MS, FDA, Silver Spring, MD

8:30 - 9:00am

Mayalife
Sarah Cheng, UC Berkeley/UCSF, Berkeley, CA

9:00 - 9:30am

Lamprey
Chethanya Eleswarpu, UC Berkeley, Berkeley, CA

9:30 - 10:00am

DoseDial
Gwenyth Fischer, MD, University of Minnesota, Minneapolis, MN

8:30 - 10:00am Regency A - West Tower - Gold Level

CARDIAC 5 - Debate - VADS: Finances, Cost of Therapy, and VADs

Co-Chairs:

Ashish Shah, MD, Vanderbilt University Medical Ctr, Nashville, TN
Jonathan Haft, MD, University of Michigan, Ann Arbor, MI

8:30 - 8:50am

Pro: VADs Is a Cost-Effective Therapy
Andrew Sauer, MD, University of Kansas Hospital, Kansas City, KS

8:50 - 9:10am

Con: Our Community May Have to Limit VAD Therapy
Keith Aaronson, MD, University of Michigan, Ann Arbor, MI

9:15 - 10:00am

CARDIAC ABSTRACTS

9:15 - 9:30am

Outcomes in Patients with Surgical Closure of Left Ventricular Outflow Tract After Continuous Flow Left Ventricular Assist Device Implantation
Chitaru Kurrihara, MD, Baylor College of Medicine, Houston, TX

9:30 - 9:45am

Center Variability in Pediatric VAD Discharge: How Do We Learn from Each Other?
Amanda Schubert, BSN, RN, Cincinnati Children's Hospital Medical Center, Cincinnati, OH

9:45 - 10:00am

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

8:30 - 10:00am Regency B - West Tower - Gold Level

BIOENGINEERING 5 - Abstracts

Co-Chairs:

Heinrich Schima, PhD, Medical University of Vienna, Vienna, Austria
Amy Throckmorton, PhD, Drexel University, Philadelphia, PA

8:30 - 8:45am

Contribution of Computational Model for Heart Tissue Local Stress Caused by Suture in VAD Implantation
Antoine Chalon, Université de Lorraine, Nancy, France

8:45 - 9:00am

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

9:00 - 9:15am

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

9:15 - 9:30am

Optimization of a Small Scale, PDMS Microfluidic Artificial Lung
Lindsay Ma, VA Ann Arbor Healthcare System, Ann Arbor, MI

9:30 - 9:45am

In vitro Blood Flow Loop System for Evaluating the Thrombogenicity of Medical Devices and Biomaterials
Megan Jamiolkowski, PhD, FDA, Silver Spring, MD

9:45 - 10:00am

Surface-engineered Small Intestinal Submucosa for New Regenerative Vascular Grafts
Karen Valencia Rivero, MSc, Universidad de los Andes, Bogotá, DC

8:30 - 10:00am Regency C - West Tower - Gold Level

PULMONARY 5

Chair:

Dongfang Wang, MD, PhD, University of Kentucky, Lexington, KY

8:30 - 8:45am

Lung Scaffolding/Printing
Bryan Whitson, MD, PhD, Ohio State University, Columbus, OH

8:45 - 9:00am

Liquid Ventilation
Ron Hirschl, MD, CS Mott Children's Hospital, Ann Arbor, MI

9:00 - 9:15am

Lung Stem Cell Transplantation
Don Hayes, Jr, MD, MS, Ohio State University, Columbus, OH

9:15 - 9:30am

Panel Discussion

9:30 - 10:00am

PULMONARY ABSTRACTS

9:30 - 9:45am

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

9:45 - 10:00am

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

8:30 - 10:00am **Acapulco - West Tower - Gold Level**

RENAL 5 - Patient Preferences: If Not Now When...?

Co-Chairs:

Gema Gonzalez, MS, FDA, Silver Spring, MD
Richard Knight, BS, MBA, American Association of Kidney Patients,
Tampa, FL

8:30 - 8:50am

The Science of Measuring Patient Preferences

Anindita Saha, FDA, Silver Spring, MD

8:50 - 9:10am

First Things First

Fokko Wieringa, PhD, imec, Eindhoven, Noord-Brabant, Netherlands

9:10 - 9:30am

Patient Driven Clinical Research

Lalita Subramanian, PhD, MPH, Arbor Research Collaborative,
Ann Arbor, MI

9:30 - 9:50am

Patient Preferences as a Regulatory Tool

Carolyn Neuland, PhD, FDA, Silver Spring, MD

9:50 - 10:00am

Discussion

8:30 - 10:00am **Toronto - West Tower - Gold Level**

PEDIATRIC 4 - Mechanical Support of Single Ventricles

Co-Chairs:

George Pantalos, PhD, University of Louisville, Louisville, KY
Chet Villa, MD, Cincinnati Children's Hospital Medical Ctr,
Cincinnati, OH

8:30 - 8:50am

Failing Fontan Pump

Amy Throckmorton, PhD, Drexel University, Philadelphia, PA

8:50 - 9:10am

Improving Fontan Circulation

Richard Figliola, PhD, PE, Clemson University, Clemson, SC

9:10 - 10:00am

PEDIATRIC ABSTRACTS

9:10 - 9:22am

Use of Hemodynamic Ramp Test to Optimize Continuous-flow Assist Device in a Fontan Patient

Peter Chau, MD, University of Michigan, Ann Arbor, MI

9:22 - 9:34am

Pediatric Ventricular Assist Device Therapy for End-staged Heart Failure: a Contemporary Ten Year Experience

Mahesh Sharma, MD, University of Pittsburgh Medical Center,
Pittsburg, PA

9:34 - 9:46am

Design of a Percutaneous Axial-centrifugal Flow Pump for Failing Fontan Circulation

Dongfang Wang, MD, PhD, University of Kentucky College of
Medicine, Lexington, KY

9:46 - 9:58am

Fontan Simulation Using MCS Training Platform

Richard Smith, MSEE, CCE, Banner University Medical Center, Tucson, AZ

10:00 - 10:45am **Enjoy Refreshments**

Regency Foyer

10:45am - 12:00pm **Regency A - West Tower - Gold Level**

Cardiac 6 - Debate - VADs: Total Artificial Heart (TAH), Continuous-Flow Biventricular Support or Heart Transplant

Co-Chairs:

William Cohn, MD, Texas Heart Institute, Houston, TX
Yoshifumi Naka, MD, PhD, Columbia University, New York, NY

10:45 - 11:05am

Pro: Durable Mechanical Circulatory Support Should Be Favored for Most Indications

Francisco Arabia, MD, Cedars-Sinai Medical Center, Los Angeles, CA

11:05 - 11:25am

Con: Heart Transplantation Should Be the Primary Strategy for Most Indications

Randall Starling, MD, MPH, Cleveland Clinic, Cleveland, OH

11:25 - 11:30am

Discussion

11:30am - 12:00pm

CARDIAC ABSTRACTS

11:30 - 11:45am

Development of a Model to Predict Central Venous Pressure in SynCardia 50cc TAH-t Patients

Katrina DeCook, MSBE, SynCardia Systems Inc., Tucson, AZ

11:45am - 12:00pm

Prediction of Right Ventricular Failure in the Current Continuous-flow Left Ventricular Assist Device Era

Cristiano Amarelli, MD, Monaldi, Azienda dei Colli, Naples, Italy

10:45am - 12:00pm **Regency B - West Tower - Gold Level**

BIOENGINEERING 6 - Abstracts

Co-Chairs:

Priscilla Petit, BMS, Hbeat Medical, Cocoa, FL
Guruprasad Giridharan, PhD, University of Louisville, Louisville, KY

10:45 - 11:00am

Downsizing of Bidirectional Self-expanding Arterial Cannula Designs

Saad Abdel-Sayed, PhD, Cardiovascular Research Center, Lausanne,
Vaud, Switzerland

11:00 - 11:15am

Development of a Miniaturized Heart Assist Device with Interchangeable Hydraulics of a Miniaturized Heart Assist Device with Interchangeable Hydraulics

J. Ryan Stanfield, PhD, VADovations, Oklahoma City, OK

11:15 - 11:30am

Analysis of the Effect of Component Elements of Hemodynamic Shear Stress Profiles on Shear-mediated Platelet Activation in Cardiovascular Implantable Therapeutic Devices

Filippo Consolo, PhD, Università Vita Salute, Milano, Italy

11:30 - 11:45am

Ex vivo Pathological Platform for Vascular Device Testing

Noemi Vanerio, Eindhoven, Netherlands

11:45am - 12:00pm

Variable-length Trajectory Sequences and Field-oriented Control to Efficiently Produce Arbitrary Pulsatile Output on Mechanical Circulatory Support Pumps

Barry Kuban, BSEE, Cleveland Clinic, Cleveland, OH

10:45am - 12:00pm Regency C - West Tower - Gold Level
PUMONARY 6: Mechanical Treatment of PH & RV
Failure: Impella, Tandem, Nova Lung

10:45 - 11:05am

Impella

Navin Kapur, MD, Tufts Medical Ctr, Boston, MA

11:05 - 11:25am

Tandem Heart and Extra Corporeal Devices

Brian Whitson, MD, PhD, Ohio State University, Columbus, OH

11:25 - 11:45am

Nova Lung and Intra-thoracic Assist Devices

Christian Bermudez, MD, Hospital of the Univ of Pennsylvania, Philadelphia, PA

11:45am-12:00pm

Discuss

10:45am-12:00pm Acapulco - West Tower - Gold Level

RENAL 6 - Abstracts

Co-Chairs:

Stephen Ash, MD, IU Health Arnett, Lafayette, IN
Shuvo Roy, PhD, University of California San Francisco, San Francisco, CA

10:45 - 11:00am

The Influence of Catheter Design on Convection-dominated Heparin Leakage

Alberto Aliseda, PhD, University of Washington, Seattle, WA

11:00 - 11:15am

Centrifugal Separator for Implantable Artificial Kidney

Koki Ariyoshi, BS, University of Tokyo, Tokyo, Japan

11:15 - 11:30am

Bioactive Supramolecular Polymer Materials for Renal Membrane Bioengineering

Ronald van Gaal, Eindhoven University of Technology, Eindhoven, Netherlands

11:30 - 11:45am

Blood Foam in the Air Trap During Hemodialysis and Automatic Priming of FX-Dialyzers

Bernd Stegmayr, MD, PhD, Umea University of Sweden, Umea AC, Sweden

11:45am - 12:00pm

Development of a Novel Cell-free and Concentrated Ascites Reinfusion Therapy (CART) Machine Which Can Be Easily Used in Safety

Toshiya Okahisa, MD, PhD, Institute of Health Biosciences, Tokushima, Japan

12:00 - 1:00pm Toronto - West Tower - Gold Level

IFAO SESSION

Co-Chairs:

Bernd Stegmayr, MD, PhD, Umea University, Umea, AC, Sweden
Marvin Slepian, MD, University of Arizona, Tucson, AZ

12:00 - 12:20pm

Biomedical Application of Decellularized Tissues

Akio Kishida, Tokyo Medical and Dental University, Tokyo, Japan – representing JSAO

12:20 - 12:40pm

Effectively Increasing Safety and Survival of VAD Patients

Heinrich Schima, PhD, Medical University of Vienna, Vienna, Austria – representing ESAO

12:40 - 1:00pm

Academia-Industry Collaboration for Medical Device Innovation Supported by Government Strategy in Japan

Yoshiyuki Taenaka, MD, PhD, National Cerebral & Cardiovascular Ctr, Suita, Osaka, Japan

8:00am - 3:00pm ASAIO / ICCAC MCS Proficiency Verification Courses - Admission by Ticket

Stetson E, F, G, Haymarket, Columbian - West Tower



Course Co-Chairs:

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

Thomas Schloeglhofer, BSc, Medical University of Vienna, Vienna, Austria

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

SATURDAY, JUNE 24 (continued)

Invited Faculty Include:

Carole Ballew, MSN, RN, University of Virginia, Charlottesville, VA
 Peggy Blood, MSN, RN, University of Alabama, Birmingham, AL
 Pamela Combs, PhD, RN, Advocate Christ Medical Center, Oak Lawn, IL
 Lori Edwards, MSN, RN, INOVA Fairfax Hospital, Falls Church, VA
 Stephanie Hopper, BSN, University of Alabama, Birmingham, AL
 Jodie Lantz, MSN, RN, Childrens Health, Dallas, TX
 Janelle McLean, RN, The Alfred Hospital, Melbourne, VIC, Australia
 Karen Meehan, MSN, Advocate Christ Medical Center, Oak Lawn, IL
 Heather Moody, APRN ACNP, University of Louisville, Louisville, KY
 Amanda Schubert, BSN, RN, Cincinnati Children's Hospital, Cincinnati, OH

Michael Sobieski, RN, CCP, University of Louisville Jewish Hospital, Louisville, KY
 Maureen Thompson, RN, University of Minnesota, Minneapolis, MN
 Eugene DePasquale, MD, Ronald Reagan UCLA Medical Center, Los Angeles, CA
 Claudius Mahr, DO, University of Washington, Seattle, WA
 Evgenij Potapov, PD, Dr. Med, German Heart Center Berlin, Berlin, Germany
 Edwardo Rame, MD, University of Pennsylvania, Philadelphia, PA
 Benjamin Sun, MD, Minneapolis Heart Institute, Minneapolis, MN
 Jeffrey Teuteberg, MD, University of Pittsburgh Medical Ctr, Pittsburgh, PA
 Nir Uriel, MD, MSc, University of Chicago, Chicago, IL

Time	Room 1	Room 2	Room 3	Room 4
0800	Introduction - Session Instructions			
0815	HVAD S1 Session 1	HeartMate II Session 1	Impella Session 1	Berlin Heart Session 1
0830	HVAD S2 Session 1		Centrimag Session 1	Syncardia Session 1
0845				
0900	HVAD S1 Session 2	HeartMate II Session 2	Impella Session 2	Berlin Heart Session 2
0915	HVAD S2 Session 2		Centrimag Session 2	Syncardia Session 2
0930				
0945	Break			
1000	HVAD S1 Session 3	HeartMate II Session 3	Impella Session 3	Berlin Heart Session 3
1015	HVAD S2 Session 3		Centrimag Session 3	Syncardia Session 3
1030				
1045	HVAD S1 Session 4	HeartMate II Session 4	Impella Session 4	Berlin Heart Session 4
1100	HVAD S2 Session 4		Centrimag Session 4	Syncardia Session 4
1115				
1130	Lunch Break			
1200				
1230	HVAD S1 Session 5	HeartMate II Session 5	Impella Session 5	Berlin Heart Session 5
1300	HVAD S2 Session 5		Centrimag Session 5	Syncardia Session 5
1315				
1330	HVAD S1 Session 6	HeartMate II Session 6	Impella Session 6	Berlin Heart Session 6
1345	HVAD S2 Session 6		Centrimag Session 6	Syncardia Session 6
1400				
1415	HVAD S1 Session 7	HeartMate II Session 7	Impella Session 7	Berlin Heart Session 7
1430	HVAD S2 Session 7		Centrimag Session 7	Syncardia Session 7
1445				
1500	End 1500			

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