



Science, Medicine and Industry  
Innovating for the Future.



# PROGRAM

**ASAIO 60th Annual Conference**

*"Looking To Our Future Through Our Past"*

**Washington, DC | June 18 - 21, 2014**

# MED DEVICE STRATEGIES LLC

## DEVICE DEVELOPMENT SOLUTIONS



## MDS - Your partner in medical device development

With over 200 years collective experience in the mechanical circulatory support field, MedDevice Strategies will work with you to create solutions to your development challenges, bringing your product from proof of concept through product approval and distribution. Areas of expertise include:

- Detailed product design, modeling, prototyping and functional testing
- Formal preclinical verification testing and manufacturing transfer
- Reliability engineering, quality system development
- Clinical trial design and regulatory strategy
- Business strategy, business plans and equity financing

MDS's broad experience is complemented through its collaboration with Cirtec Medical Systems. Together with Cirtec, MDS can provide a complete range of services from initial development through pilot production and volume manufacturing.



We thank our clients and look forward to future collaborations in the development of innovative medical devices.

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Phil.Miller @MedDevice-Strategies.com

www.MedDevice-Strategies.com  
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### ASAIO HEADQUARTERS

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### ASAIO Journal Editorial Office

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### ASAIOfyi – for young innovators

For individuals under age 40.  
A Strategic initiative of ASAIO to assist  
in the development of the future generation  
of scientists, engineers & clinicians.  
Details at [www.asaio.com](http://www.asaio.com) under "Membership"

## ASAIO EDUCATIONAL GRANT SPONSORS

### Platinum Level



### Gold Level



*Kurt A. Dasse, PhD*

### Bronze Level



### ASAIO Pediatric Day Co-sponsors



### ASAIO Student Design Competition Co-sponsor



# ACCREDITATION

## Physicians | Nurses

### 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 Sponsorship 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.

### CME CREDIT STATEMENT

The University of Massachusetts Medical School designates this educational activity for a maximum of 70.25 AMA PRA Category 1 Credits™. Physicians should claim only credit commensurate with the extent of their participation in the activity.

### NURSING ACCREDITATION

This activity meets the criteria of the Massachusetts Board of Registration in Medicine for risk management study 78.90 Nursing CEUs.

### CERTIFICATION

**All those who sign in each day, attend and 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. Pick up your course evaluation as well as a list of Accredited Sessions at the ASAIO Registration Desk.**

### CME Inquires

For all CME certificate inquiries, please contact the UMMS-OCME at (508) 856-1671 or (508) 856-6838.

### INTENDED AUDIENCE

Physicians, Perfusionists, Nurses, Scientists, Engineers & Industry

### COURSE OBJECTIVES

- Provide medical staff with the ability to understand the state of technology and regulatory development for several preclinical technologies in their field.
- Medical staff should be able to use late-breaking clinical trial results to guide their practice.
- Medical staff should be able to describe several syndromes associated with organ support.

### Perfusionists

The American Board of Cardiovascular Perfusion will allot Category 1 CEUs to those Perfusionists who attend the Conference with a **Total Possible of 25.3 CEUs.**

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

# ASAIO NEWS

## The 61st Annual Conference of ASAIO

will be held in Chicago June 24 – 27, 2015.  
The IFAO will meet in conjunction with ASAIO.



**ASAIO Program  
Chairman 2015**  
*Jonathan Haft, MD*



**ASAIO Deputy Program  
Chairman 2015**  
*Steven Koenig, PhD*

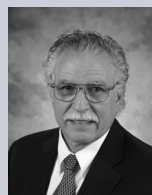


**ASAIO President  
June 22, 2014 – June 27, 2015**  
*William Weiss, PhD*



**ASAIO Journal  
Editor - Mark S Slaughter, MD**

### ASAIO Project Bionics



*Gerson Rosenberg, PhD*



*Steven J Phillips, MD*

## ASAIO AWARD & FELLOWSHIP RECIPIENTS 2014

**WILLEM J KOLFF / DON B OLSEN AWARD  
SPONSORED BY THE MEDFORTE FOUNDATION**  
**Michael Neidlin, MSc**

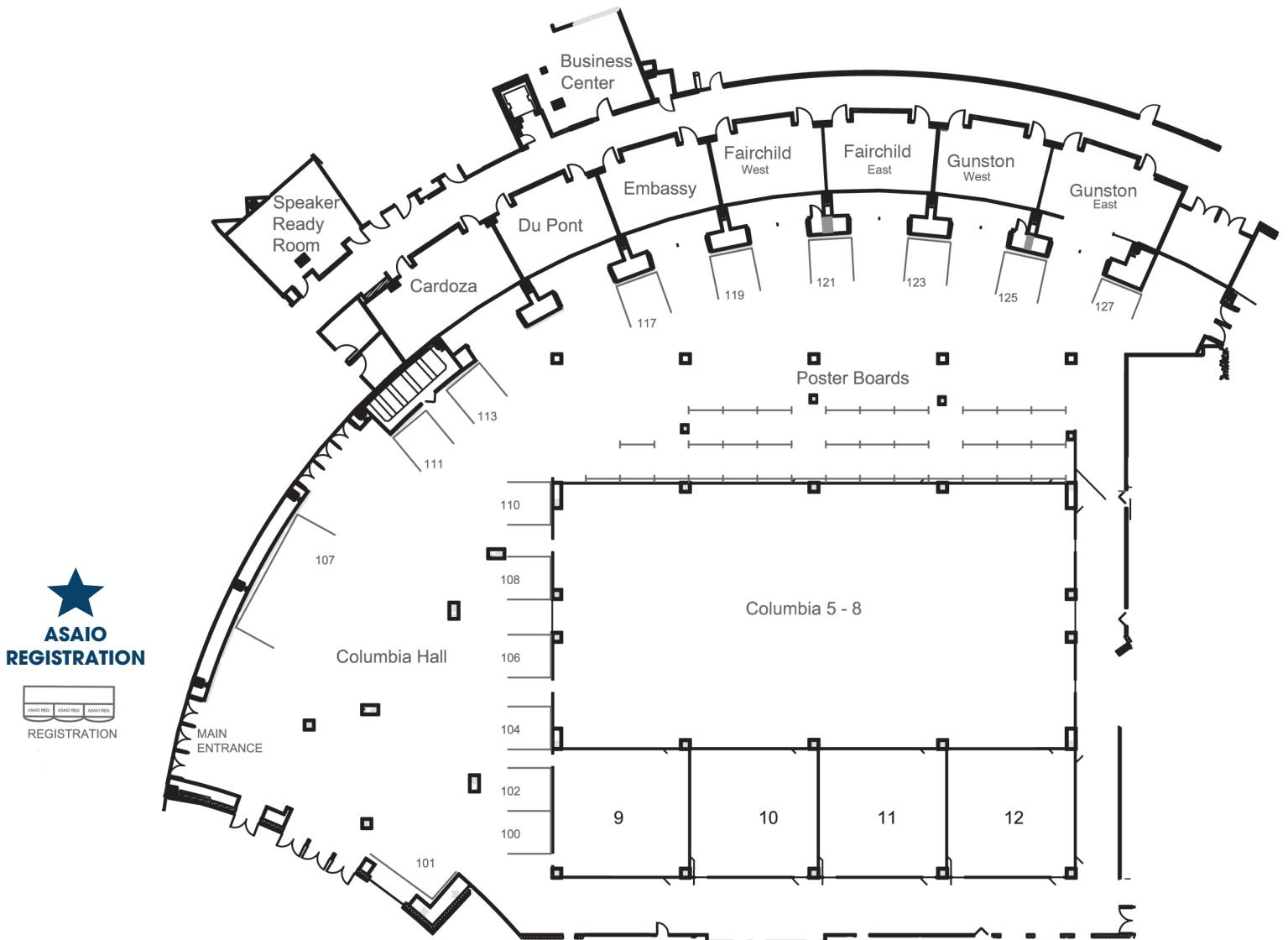
**ASAIO Y NOSE' INTERNATIONAL AWARD  
SPONSORED BY THE Y NOSE' AWARD FUND**  
**Po-Lin Hsu, PhD**

**ASAIOfyi – for young innovator FELLOWSHIPS  
SPONSORED BY THE PAUL S. MALCHESKY FELLOWSHIP FUND**  
**Natasha Loghmanpour, MD**  
**Yang Liu, MD, PhD**

**ASAIO FELLOWSHIPS**  
**Javier Navarro Rueda, MSME**  
**Brian Letzen, MS**  
**Sarah Knezek, BS**

# ASAIO 60<sup>th</sup> Annual Conference The Washington Hilton - Terrace Level

Scientific Sessions | Exhibits | Posters | Registration  
Refreshment Breaks | Welcome Reception | Speaker Ready Room



# ASAIO EXHIBITORS



**ABIOMED INC**  
*Danvers, Massachusetts*  
**BOOTH 121**

Abiomed (NASDAQ: ABMD) is a pioneer and global leader in healthcare technology and innovation, with a mission of RECOVERING HEARTS AND SAVING LIVES. Founded in 1981, Abiomed is focused on developing groundbreaking technologies designed to assist the life-sustaining pumping function of the failing heart.



**BERLIN HEART INC**  
*The Woodlands, Texas*  
**BOOTH 107**

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.



**CARDIACASSIST INC**  
*Pittsburgh, Pennsylvania*  
**BOOTH 113**

CardiacAssist's TandemHeart® System is a novel percutaneous left ventricle bypass system that can provide up to 5.0 L/min of cardiac output augmentation to patients in need of circulatory support. Unique transeptal cannulation of the left atrium maximizes unloading efficiency before returning oxygenated blood to the femoral artery



**HEARTWARE INC**  
*Framingham, Massachusetts*  
**BOOTH 119**

HeartWare, Inc. is developing a family of implantable mechanical circulatory support systems for the treatment of advanced heart failure. HeartWare's lead device, the HeartWare® Ventricular Assist System, incorporates state-of-the-art peripherals and features the only full-output pump designed to be implanted less invasively in the pericardial space. The HeartWare® System is commercially available in Europe and is the subject of a 150-patient US IDE trial.



**ICAOT**  
*Painesville, Ohio*  
**BOOTH 127**

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 on artificial organ technologies, manages the publication of Artificial Organs and Therapeutic Apheresis and Dialysis, and disseminates information on the historical development, current state of the art and future development of artificial organs and organ transplantation.



**IMACOR INC**  
*Garden City, New York*  
**BOOTH 117**

ImaCor Inc. designs, manufactures, and distributes hTEE (hemodynamic transesophageal echo) technology, the FIRST and ONLY critical care solution enabling clinicians to optimize cardiac performance with continuously-available direct cardiac visualization. hTEE provides patients, clinicians, and hospital administrators with the best-possible clinical outcomes while reducing the total cost of care. hTEE technology consists of the Zura™ ultrasound systems and the purpose-built miniaturized and disposable ClariTEE® probe, uniquely designed to remain indwelling for up to 72 hours. hTEE is an essential part of high-acuity patient management, and is designed to be the global, gold standard of critical care.



**ISIS SERVICES**  
*San Carlos, California*  
**BOOTH 110**

ISIS Services is a preclinical CRO specializing in medical device R&D testing, GLP and non-GLP studies and physician/sales force training. Our AAALAC-accredited research facility is built specifically to help clients get from research to clinical application efficiently. With 30 years of experience, we have a reputation for excellent science, strong surgical skills and customized timely services.

ISIS has 4 surgical suites. Our imaging equipment includes: c-arms, ultrasounds, OCT, laparoscopic and endoscopic towers, IVUS and access to CT and MRI scanners. We take a collaborative approach with our clients as we understand the complexities of research and the unique needs of individual companies.



**MINNETRONIX, INC**  
*St Paul, Minnesota*  
**BOOTH 106**

For over 15 years, Minnetronix has combined design and manufacturing, and our own innovative IP solutions, to help customers transform ideas into commercial success within the medical device and life science marketplaces. Our experienced engineers and manufacturing teams incorporate custom electronic, mechanical and software engineering into finished Class II & III devices and systems such as cardiovascular and monitoring systems, therapeutic and implantable devices, and diagnostic instruments, among others. Minnetronix has led over 200 design and manufacturing projects for 125 companies ranging in size from small start-ups to Fortune 100 companies. Minnetronix is ISO 13485 certified and FDA registered.



**PROCIRCA**

*Pittsburgh, Pennsylvania*

**BOOTH 125**

Procirca® offers patients, clinicians, and hospitals the most advanced Mechanical Circulatory Support (MCS) services in the market today. Capitalizing on our partnership with UPMC, an internationally renowned pioneer in transplant research and one of the nation's most active centers for solid organ transplantation, we leverage world-class academic resources and the latest developments in clinical research to provide the most advanced clinical support, education and program development services available for MCS.



**SUNSHINE HEART**

*Eden Prairie, Minnesota*

**BOOTH 123**

The C-Pulse® Heart Assist System is a balloon counter-pulsation technology used to treat patients with moderate to severe heart failure (Class III/Ambulatory Class IV). The implantable device is placed outside the bloodstream and gives patients the ability to disconnect from the system. Preliminary results of the C-Pulse System have indicated relief of heart failure symptoms, improved quality of life and cardiac function, and reduced the need for heart failure hospitalization. The C-Pulse implant procedure can be performed minimally invasively. The European Post-Market Study (OPTIONS HF) and the US Investigational Pivotal Trial (COUNTER HF™) are currently underway.



**SYNCARDIA SYSTEMS INC**

*Tucson, Arizona*

**BOOTH 108**

The SynCardia temporary Total Artificial Heart (TAH-t) is the world's only FDA, Health Canada and CE approved Total Artificial Heart. The TAH-t is currently approved as a bridge to transplant for patients dying from end-stage biventricular failure. The 13.5 lb Freedom® portable driver has received CE approval in Europe and is undergoing an IDE clinical study in the U.S. The Freedom driver is designed to provide mobility for stable TAH patients both inside and outside the hospital. Visit our booth for updates on pediatric and other expanding usage, and the 50cc TAH clinical study.



**THORATEC CORPORATION**

*Pleasanton, California*

**BOOTH 111**

Thoratec is the world leader in mechanical circulatory support with the broadest product portfolio to treat full range of clinical needs for patients suffering from advanced heart failure. The company's products include the HeartMate LVAS and Thoratec VAD, with more than 20,000 devices implanted in patients suffering from heart failure. Thoratec also manufactures and distributes the CentriMag and PediMag / PediVAS Product lines. Thoratec is headquartered in Pleasanton, California. For more information, visit [www.thoratec.com](http://www.thoratec.com).



**TRANSONIC SYSTEMS INC**

*Ithaca, New York*

**BOOTHS 100 & 102**

The Measure of Better Results from Bench to Bedside

- ✓ NEW! ELSA Monitor. Early oxygenator clotting indication and recirculation measurements for ECMO (CE Marked, FDA pending)
- ✓ NEW! Implantable EndoGear Telemetry for animal research (Flow, Pressure, ECG)
- ✓ COstatus: Measure cardiac output and blood volumes in infants
- ✓ Hemodialysis Monitor: The gold standard for vascular access surveillance
- ✓ Gold standard Flowmeters for the Life Sciences: intra-operative/ implantable use
- ✓ Pressure Volume systems using Admittance by Transonic Scisense
- ✓ Clinical Transonic Inside OEM products and capabilities



**WAKE FOREST INNOVATIONS**

*Winston-Salem, North Carolina*

**BOOTH 104**

Wake Forest Innovations commercializes the great ideas, discoveries and capabilities of Wake Forest Baptist Medical Center. It helps to accelerate research & development through quality preclinical testing of medical devices, surgical procedures and therapeutics, taking advantage of the extensive experience of its internationally renowned scientists, veterinarians and surgeons.



**WOLTERS KLUWER HEALTH – LIPPINCOTT WILLIAMS & WILKINS**

*Philadelphia, Pennsylvania*

**BOOTH 101**

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

# ASAIO PROGRAM OUTLINE

## WEDNESDAY, JUNE 18, 2014

8:00AM – 5:00PM	<b>Practical Outpatient Dialysis Short Course</b> – Columbia 9
8:30AM – 5:00PM	<b>Third Annual Pediatric Medical Device Day</b> – Columbia 5
10:00AM – 12:00PM	<b>VAD Coordinator Program</b> – Columbia 10
1:00PM – 5:00PM	<b>VAD Proficiencies</b> – Gunston and Fairchild Rooms

## THURSDAY, JUNE 19, 2014

7:45AM – 12:00PM	<b>General Session 1</b> – Columbia 5 <i>ASAIOfyi Rapid Fire   Second Annual Student Design Competition</i>
12:15PM – 1:15PM	<b>Lunch Break</b> <b>ASAIOfyi – for young innovators Working Luncheon</b>
1:30PM – 3:00PM	<b>Cardiac 1 – Long-Term Mechanical Circulatory Support</b> – Columbia 5 <b>Bioengineering 1 – Biocompatible Surface, Biomaterials, Blood / Material Interaction</b> – Columbia 9 & 10 <b>Pulmonary 1 – Gas Exchange Membrane</b> – Columbia 11 & 12 <b>Renal 1 – Vascular Access: Clinical Standards Of Practice &amp; Unmet Needs</b> – Cardozo Room
3:00PM – 3:45PM	<b>Visit Exhibits &amp; Posters – Enjoy Refreshments</b> – Columbia Hall
3:45PM – 5:00PM	<b>Cardiac 2 – Short-Term Mechanical Circulatory Support</b> – Columbia 5 <b>Bioengineering 2 – Tissue Eng / Hybrid Devices / Physiologic Cell Culture Models</b> – Columbia 9 & 10 <b>VAD Coordinator 1 – Simulations</b> – Fairchild Room <b>Pulmonary 2 – ECMO For Severe Respiratory Diseases</b> – Columbia 11 & 12 <b>Renal 2 – Vascular Access: Vascular Remodeling &amp; Biomechanics Modeling</b> – Cardozo Room <b>Pediatric 1 – Pediatric ECMO: Historical, Current &amp; Future</b> – Gunston Room
5:15PM – 5:45PM	<b>ASAIO Member Business Meeting</b> – Embassy Room
6:00PM – 7:00PM	<b>ASAIO Welcome Reception</b> – Columbia Hall

## FRIDAY, JUNE 20, 2014

8:00AM – 12:00PM	<b>General Session 2</b> – Columbia Hall <i>ASAIOfyi Rapid Fire   Third Annual Medical Device Entrepreneur's Forum   ASAIO President's Address ASAIO Hastings Lectureship   ASAIO Fellowships &amp; Awards</i>
12:15PM – 1:15PM	<b>Lunch Break</b> <b>ASAIOfyi – for young innovators Luncheon</b>
1:30PM – 3:00PM	<b>Cardiac 3 – Complications And Long-Term Management</b> – Columbia 5 <b>Bioengineering 3 – Translation Of Artificial Organs From Academia To Bedside</b> – Columbia 9 & 10 <b>VAD Coordinator 2 – VADs For Adults</b> – Cardozo Room <b>Pulmonary 3 – Cannulation And New Device Development</b> – Columbia 11 & 12 <b>Renal 3 – Vascular Access: Innovative Devices</b> – Fairchild Room <b>Pediatric 2 – Pediatric Perfusion: Past, Present &amp; Future Innovations</b> – Gunston Room
3:00PM – 3:45PM	<b>Visit Exhibits &amp; Posters – Enjoy Refreshments</b> – Columbia Hall
3:45PM – 5:00PM	<b>Cardiac 4 – Controversies In Mechanical Circulatory Support</b> – Columbia 5 <b>Bioengineering 4 – Blood Damage And Thrombosis</b> – Columbia 9 & 10 <b>Pulmonary 4 – ECCO2R / Low Flow ECMO</b> – Columbia 11 & 12 <b>Renal 4 – Vascular Access: Innovative Therapeutics &amp; Materials</b> – Fairchild Room <b>Pediatric 3 – Abstracts</b> – Gunston Room
5:15PM – 6:45PM	<b>Moderated Poster Sessions</b> – Columbia Hall

## SATURDAY, JUNE 21, 2014

8:00AM – 9:30AM	<b>Cardiac 5 – The Future Of LVAD Technology</b> – Columbia 5 <b>VAD Coordinator 3 – Out Of The Box Thinking</b> – Embassy Room <b>Bioengineering 5 – New Technologies</b> – Columbia 9 & 10 <b>Pulmonary 5 – ECMO: Long Term And Bridge to Lung Transplant</b> – Columbia 11 & 12 <b>Renal 5 – Emerging Strategies In Acute Kidney Injury - Georgetown West</b> – Concourse Level <b>Pediatric 4 – Abstracts</b> – Georgetown East- Concourse Level
9:30AM – 10:15AM	<b>Visit Exhibits &amp; Posters – Enjoy Refreshments</b> – Columbia Hall
10:15AM – 10:45AM	<b>IFAO Session</b> – Cabinet Room – Concourse Level
10:45AM – 12:00PM	<b>Cardiac 6 – Socioeconomic Aspects Of MCS</b> – Columbia 5 <b>Bioengineering 6 – Computational Aspects Of Devices</b> – Columbia 9 & 10 <b>Pulmonary 6 – New Device Development</b> – Columbia 11 & 12 <b>Renal 6 – Enabling Technologies For Wearable Dialysis - Georgetown West</b> – Concourse Level

## "INNOVATION IN PEDIATRIC DEVICES"

8:30am-5:00pm - Columbia 5 & 7



Co-Chairs:

Robert Kroslowitz, President & CEO,  
Berlin Heart Inc, The Woodlands, TX



Robert Jaquiss, MD, Chief Pediatric Heart  
Surgery, Duke University Medical Center,  
Durham, NC

### INTRODUCTION

8:30-8:40am

Mr. Robert Kroslowitz

### INNOVATION IN PEDIATRIC MEDICAL DEVICE TRIALS

Co-Chairs: Mr. Robert Kroslowitz & Robert Jaquiss, MD

8:40-9:00am

#### Pediatric Medical Device Trial Design

John Laschinger, MD, FDA, Silver Spring, MD

9:00-9:20am

#### PumpKIN Update

Timothy Baldwin, PhD, NHLBI / NIH, Bethesda, MD

9:20-9:40am

#### PumpKIN Trial Design

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

9:40-10:00am

#### Panel Discussion

### REFRESHMENT BREAK

10:00-10:15am

### UPDATE ON THE PEDIATRIC DEVICE CONSORTIA PROGRAM ACTIVITIES INNOVATION IN PEDIATRIC DEVICE DEVELOPMENT

10:15am-12:00pm

Co-Chairs:

Peter Wearden, MD, PhD, University of Pittsburgh, Pittsburgh, PA

Tilman Humpl, MD, PhD, Hospital for Sick Children, Toronto, Canada

10:15-10:35am

#### FDA's Pediatric Device Consortia: An Overview

Linda Ulrich, MD, FDA, Silver Spring, MD

10:35-10:55am

#### Michigan Pediatric Device Consortium

James Geiger, MD, University of Michigan, Ann Arbor, MI

10:55-11:15am

#### Pediatric Cardiovascular Device Consortium

Pedro del Nido, MD, Boston Children's Hospital, Boston, MA

11:15-11:35am

#### National Capital Consortium For Pediatric Devices

Peter C. W. Kim, MD, PhD, Children's National Health System,  
Washington, DC

11:35-12:00pm

#### Use Of The HeartWare HVAD In The Pediatric Population

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

12:15-1:15pm

#### Pediatric Working Luncheon - Innovation In Pediatric Cardiovascular Surgery

Only For Individuals Registered for Pediatric Day  
William Norwood, MD, Wilmington, DE

### CONTEMPORARY CHALLENGES IN PEDIATRIC DEVICE INNOVATION

1:30-2:45pm

Co-Chairs:

Trevor Snyder, PhD, INTEGRIS Baptist Medical Center, Oklahoma  
City, OK

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

1:30-1:50pm

#### Contemporary Challenges Of Developing A Pediatric Circulatory Support Device

Robert Jarvik, MD, Jarvik Heart Inc, New York, NY

1:50-2:10pm

#### Contemporary Challenges Of Developing A Pediatric Cardiopulmonary Support Device

Mark Gartner, PhD, Ension Inc, Pittsburgh, PA

2:10-2:30pm

#### Contemporary Challenges Of Supporting The "Unsupportable" Cardiac Patient

Ryan Davies MD, Nemours / Alfred I duPont Hospital For Children,  
Wilmington, DE

2:30-2:45pm

#### Panel Discussion

### REFRESHMENT BREAK

2:45pm-3:00pm

### OTHER INNOVATIVE PEDIATRIC MEDICAL DEVICES

3:00-5:00pm

Co-Chairs:

Robert Jaquiss, MD, Duke University Medical Center, Durham, NC

David Morales, MD, Cincinnati Children's Hospital Medical  
Center, Cincinnati, OH

3:00-3:20pm

#### Atlanta Pediatric Device Consortium

Kevin Maher, MD, Children's Healthcare of Atlanta, Atlanta, GA

3:20-3:40pm

#### Novalung

Georg Matheis, MD, PhD, Novalung GmbH, Heilbronn, Germany

3:40-4:00pm

#### KIDS - CRRT

Matthew Paden, MD, Emory University, Atlanta, GA

4:00-4:20pm

#### Molecular Adsorbent Recirculating System

Francisco Flores, MD, University of South Florida, Tampa, FL

4:20-4:40pm

#### Wireless Implantable Pressure Sensor For Chronic Ambulatory Fontan Pressure Monitoring

Martin Bocks, MD, University of Michigan, Ann Arbor, MI

4:40-4:55pm

#### Panel Discussion

4:55-5:00pm

#### Closing Comments

## ASAIO SHORT COURSE: PRACTICAL OUTPATIENT DIALYSIS

8:00am-5:00pm - Columbia 9



**Course Director:** William Fissell, MD, Associate Professor of Medicine, Vanderbilt Univ Medical Center, Nashville, TN

8:00-9:00am

### Safe 'n' Easy Medical Directorship

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

9:00-10:00am

### Evaluating Practice Financials

Emil Abdulhayoglu, MD, MBA, Kidney Associates, Houston, TX

10:00-11:00am

### How Dialysis Really Gets Paid For

Jay Wish, MD, IU Health University Hospital, Indianapolis, IN

11:00-12:00pm

### We Need Another Unit?

James Tumlin, MD, University of Tennessee College of Medicine, Chattanooga, TN

## LUNCH BREAK

12:00-1:30pm

1:30-3:00pm

### Practical Aspects of Home Hemodialysis

Robert Lockridge Jr., MD, Lynchburg Nephrology Physicians, Lynchburg, VA

3:00-4:00pm

### In-Center Nocturnal Hemodialysis Howto

Rachel Fissell, MD, MS, Vanderbilt University Medical Center, Nashville, TN

4:00-5:00pm

### Run a Successful Peritoneal Dialysis Program

Thomas Golper, MD, Vanderbilt University Medical Center, Nashville, TN

## ASAIO VAD COORDINATOR PROGRAM

10:00am-5:00pm - Columbia 10

Co-Chairs: Pamela Combs, PhD, VAD Clinical Manager, Seton Heart Specialty Care & Transplant Ctr, Austin, TX

Aimee Gardner, CCP, BS, VAD Clinical Practice Lead, Cincinnati Children's Hosp Med Ctr, Cincinnati, OH

Michael Petty, PhD, RN, CNS, Clinical Nurse Specialist, Univ of Minnesota Med Ctr, Minneapolis, MN

10:00-10:15am

### Ambulatory ECMO

Dorothy Lockhart, RN, BSN, CCTC, University of Kentucky, Lexington, KY

10:15-10:30am

### Creative Strategies For The VAD Patient Hyde Park

Pamela Combs, PhD  
Aimee Gardner, CCP, BS  
Michael Petty, PhD, RN, CNS

10:30-11:00am

### Surgical Approaches And Post-Op Care

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

11:00-11:45am

### Outpatient Dialysis

11:00-11:15 - Erin Davis, RN, BSN, University of Utah, Salt Lake City, UT

11:15-11:30 - Laura Blue, MSN, NP, RN, Duke University Medical Center, Durham, NC

11:30-11:45 - Peggy Blood, MSN, RN, University of Alabama, Birmingham, AL

## LUNCH BREAK

12:00-1:00pm

## VAD PROFICIENCIES

1:00-5:00pm

MCS University will provide "hands-on" learning and practice of four devices in a controlled environment. VAD Coordinators will be present to answer questions you always wondered about but were afraid to ask!

Gunston East - Berlin Heart  
Gunston West - SynCardia  
Fairchild East - HeartWare  
Fairchild West - HeartMate II

# THURSDAY, JUNE 19

## GENERAL SESSION 1

7:45am-12:00pm - Columbia 5



Co-Chairs:

Peter Wearden, MD, PhD, Assistant Professor Surgery, Univ of Pittsburgh, Pittsburgh, PA



Mark Slaughter, MD, Prof & Chairman, CV & Thoracic Surgery, Univ of Louisville, Louisville, KY

7:45-8:00am

### Introduction & Welcome

Peter Wearden, MD, PhD, ASAIO Program Chairman

## ASAIOfyi – for young innovators Rapid Fire Presentations – Session 1

8:00-8:15am

8:00-8:05am

### Augmented Pulsatility By Modulating Pump Speed In Bovine Ischemic Heart Failure Model

Kevin Soucy, PhD, University of Louisville, Louisville, KY - ASAIOfyi Member

8:05-8:10am

### Shear Stress Enhanced Proximal Tubule Cell Bioreactor Systems

Peter Soler, University of California, Berkeley, CA - ASAIOfyi Member

**8:10-8:15am**

**Magnetic Apheresis Device For Filtration Of Malaria-Infected Red Blood Cells**

Andrea Martin, BS, Carnegie Mellon University, Pittsburgh, PA - ASAIOfyi Member

**8:15-8:45am**



**A Tribute to ASAIO: For Members Past and Present**

Kurt Dasse, PhD, President & CEO, GeNO LLC, Waltham, MA

**8:45-9:15am**



**How Do We Continue To Innovate?**

Marvin Slepian, MD, Professor of Medicine & Biomedical Engineering, University of Arizona, Tucson, AZ

**9:15-9:45am**



**How Do We Pay For And Regulate Innovation?**

Ali Mohamadi, MD, Physician, FDA, Silver Spring, MD

**Visit Exhibits & Posters – Enjoy Refreshments**

**9:45-10:30am**

**ASAIO 2nd Annual Student Design Competition**

**10:30am-12:00pm**

Chairmen:



William Federspiel, PhD, W.K. Whiteford Professor, University of Pittsburgh, PA



Salim Olia, BS, Graduate Student Researcher, University of Pittsburgh, PA

**10:30-10:40am**

**Embrace: Reducing Suboptimal Exposures In The IVF Embryo Culture**

Nicole Moskowitz, Columbia University, New York, NY

**10:40-10:50am**

**Device For Detecting Periprosthetic Infection**

Forrest Miller, BS, Columbia University, New York, NY

**10:50-11:00am**

**OstoPump: A Novel Refeeding Solution for Infants With Necrotizing Enterocolitis**

Natalie Powers, University of Virginia, Charlottesville, VA

**11:00-11:10am**

**Novel Subcutaneous Emergency Pacing**

Benjamin Weira, Rice University, Houston, TX

**11:10-11:20am**

**Multi-Polymeric 3D Print Head For Use In Bioprosthetic Research**

Jacob Oberg, University of Texas, Arlington, TX

**11:20-11:30am**

**Liver On A Chip**

Jing Liu, BS, University of Science & Technology of China, Hefei, Anhui, China

**11:30-11:40am**

**MRI Phantom For Cardiac Perfusion Imaging**

Jason Ross, University of New York, Buffalo, NY

**11:40-11:50am**

**Simulations Cryoanchoring & Radiofrequency Ablation For Cardiac Arrhythmia Treatment**

Ke Zeng, University of California, Los Angeles, CA

**11:50-12:00pm**

**Q & A**

**LUNCH BREAK**

**12:15-1:15pm**

**ASAIOfyi – for young innovators**

**Working Luncheon 1 – “Networking With Industry”**

Embassy - Attendance is limited to 20 reservations from

ASAIOfyi Members

Robert Kroschwitz, President & CEO, Berlin Heart Inc

David Farrar, PhD, VP Research & Scientific Affairs, Thoratec Corporation

Jeffrey LaRose, MSME, Chief Scientific Officer, HeartWare Inc

**CARDIAC 1 | LONG-TERM MECHANICAL**

**CIRCULATORY SUPPORT**

**1:30-3:00pm** - Columbia 5

Co-Chairs:

O. Howard Frazier, MD, Texas Heart Institute, Houston, TX

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

**1:30-1:45pm**

**Current Outcomes With Long-Term MCS**

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

**1:45-2:00pm**

**Future Advances In Long-Term MCS**

William Cohn, MD, Texas Heart Institute, Houston, TX

**CARDIAC ABSTRACTS**

**2:00-2:15pm**

**A Predictive Model for Mortality Post Continuous Flow LVAD Implant Using Bayesian Analysis: The First Application To The Interagency Registry For Mechanically Assisted Circulatory Support (INTERMACS) Database**

Natasha Loghmanpour, MS, Carnegie Mellon University, Pittsburgh, PA - ASAIOfyi Member - ASAIOfyi Malchesky Fellowship recipient

**2:15-2:30pm**

**The Effect of Continuous Flow Left Ventricular Assist Device Pump Design On Severity Of Acquired von Willebrand Syndrome: Is There a Quantifiable Difference Between HeartMate-II and HeartWare?**

Simon Maltais, MD, PhD, Vanderbilt University, Nashville, TN - ASAIOfyi Member

2:30-2:45pm

**Warfarin Polymorphisms (VKORC1 and CYP2C9) Predict Anticoagulation Variability in a Continuous Flow Left Ventricular Assist Device Population**

Blair Miller, Pharm D, Vanderbilt University Medical Center, Nashville, TN

2:45-3:00pm

**Allosensitization After Total Artificial Heart Does Not Affect Short-Term Survival**

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

## BIOENGINEERING 1 | BIOCOMPATIBLE SURFACE, BIOMATERIALS, BLOOD / MATERIAL INTERACTION

1:30-3:00pm - Columbia 9 & 10

Co-Chairs:

Keith Cook, PhD, Carnegie Mellon University, Pittsburgh, PA

Robert Padera, MD, PhD, Brigham and Women's Hospital, Boston, MA

1:30-1:45pm

**Interaction Of Surfaces And Biofilms**

Robert Padera, MD, PhD, Brigham and Women's Hospital, Boston, MA

## BIOENGINEERING ABSTRACTS

1:45-2:00pm

**QuickSeeding Blood-Derived Endothelial Cells Onto Ventricular Assist Device Surface Generates An Anti-Thrombotic Lining**

Maria Noviani, BSc, Duke University, Durham, NC - ASAIOfyi Member

2:00-2:15pm

**Comparative Evaluation Of Nanoscale Surface Coatings On Silicon Substrates For Implantable Device Applications**

Zohora Iqbal, BS, University of California, San Francisco, CA - ASAIOfyi Member

2:15-2:30pm

**Improved Hemocompatibility of Extracorporeal Circuits Coated With a Combined Direct Thrombin Inhibitor And Nitric Oxide Releasing Polymer**

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

2:30-2:45pm

**Study On Early Cellular Adhesion During The Development of 3D Small Intestinal Submucosa Scaffolds**

Javier Navarro Rueda, MSc, Universidad de Los Andes, Bogota, Colombia - ASAIOfyi Member - ASAIO Fellowship Recipient

2:45-3:00pm

**Development Of The Calon Minivad™ – A Novel LVAD With Potential for a Lower Cost and Reduced Complications**

Graham Foster, Calon Cardio Technology Ltd, Swansea, United Kingdom - ASAIOfyi Member

## PULMONARY 1 | GAS EXCHANGE MEMBRANE

1:30-3:00pm - Columbia 11 & 12

Co-Chairs:

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

Patrick Cahalan, Enson Inc, Cape Coral, FL

1:30-1:50pm

**Enson Bioactive Surface For Artificial Gas Exchange**

Patrick Cahalan, BS, Enson Inc, Cape Coral, FL

1:50-2:10pm

**Nitric Oxide Coating Of ECMO Circuit**

Gail Annich, MD, University of Michigan, Ann Arbor, MI

2:10-2:30pm

**Hollow Fiber Membrane Modification For CO<sub>2</sub> Removal Enhancement. CO<sub>2</sub> Removal Enhancement Coating**

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

## PULMONARY ABSTRACTS

2:30-2:45pm

**Immune-Mediator Regulation From Donor Lungs Using The Organ Care System® – A Potential Mechanism For Improved Outcome**

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

2:45-3:00pm

**An Ovine Animal Model For Long Term Evaluation Of Artificial Pump Lungs**

Yang Liu, MD, PhD, Fourth Military Medical University, Shaanxi, China - ASAIOfyi Member - ASAIOfyi Malchesky Fellowship Recipient

## RENAL 1 | VASCULAR ACCESS: CLINICAL STANDARDS OF PRACTICE & UNMET NEEDS

1:30-3:00pm - Cardozo Room

Co-Chairs:

Howard Loree, PhD, Flow Forward Medical Inc, Lowell, MA

Lenar Yessayan, MD, Henry Ford Hospital, Detroit, MI

1:30-1:52pm

**AVF, AVG & Catheter**

Bradley Dixon, MD, University of Iowa, Iowa City, IA

1:52-2:16pm

**ECMO & VAD Cannulation**

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

2:16-2:38pm

**Cannulation for Percutaneous ECMO & CO<sub>2</sub> Dialysis**

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

2:38-3:00pm

**Management Of Infection, Thrombosis, Fibrin Sheath And Biofilm**

Stephen Ash, MD, HemoCleanse Inc, Lafayette, IN

## Visit Exhibits & Posters – Enjoy Refreshments

3:00-3:45pm

## CARDIAC 2 | SHORT-TERM MECHANICAL CIRCULATORY SUPPORT

3:45-5:00pm - Columba 5

Co-Chairs:

Aly El Banayosy, MD, Penn State Milton Hershey Medical Center, Hershey, PA

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

3:45-4:00pm

**Which Device Is Best For Short-Term MCS**

Aly El Banayosy, MD, Penn State Milton S Hershey Medical Center, Hershey, PA

4:00-4:15pm

**Future Advances In Short-Term MCS**

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

## CARDIAC ABSTRACTS

4:15-4:30pm

### **Extracorporeal Membrane Oxygenation Support In Refractory Cardiogenic Shock: Treatment Strategies And Analysis Of Risk Factors**

Antonio Loforte, MD, PhD, A.O. S Orsola Malpighi, Bologna, Italy - ASAIOfyi Member

4:30-4:45pm

### **Centrifugal Pumps for ECMO Are Associated With Higher Incidence of Pulmonary And Neurologic Hemorrhage**

Adam Cole, BA, University of Michigan, Ann Arbor, MI

4:45-5:00pm

### **A 28-Year Experience With Emergent Percutaneous Cardiopulmonary Bypass for Cardiovascular Collapse**

Karl Limmer, MD, Sharp Memorial Hospital, San Diego, CA

## BIOENGINEERING 2 | TISSUE ENGINEERING / HYBRID DEVICES / PHYSIOLOGIC CELL CULTURE MODELS

3:45-5:00pm - Columbia 9 & 10

Co-Chairs:

Zhongjun Wu, PhD, University of Maryland School of Medicine, Baltimore, MD

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

3:45-4:00pm

### **Novel Approaches To Tissue Engineering**

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

## BIOENGINEERING ABSTRACTS

4:00-4:15pm

### **Liposome Encapsulated Hemoglobin Accelerates Skin Wound Healing In Diabetic dBdB Mice**

Akira Kawaguchi, MD, PhD, Tokai University School of Medicine, Kanagawa, Japan

4:15-4:30pm

### **Development Of Noble Autologous Heart Valve (Biovalve)**

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

4:30-4:45pm

### **Full Regeneration Of The Aorta In A Porcine Model With Small Intestinal Submucosa Vascular Grafts**

Diana Sanchez-Palencia, Universidad de los Andes, Bogota, Colombia

4:45-5:00pm

### **Artificial Liver MARS Application In ACLF Patients: A New Concept**

Vincenzo Morabito, MD, Sapienza University of Rome, Rome, Italy

## VAD COORDINATOR SESSION 1 | SIMULATIONS

3:45-5:00pm - Fairchild Room

Co-Chairs:

Aimee Gardner, CCP, BS, Cincinnati Children's Hospital Medical Center, Cincinnati, OH

Michael Petty, PhD, RN, CNS, University of Minnesota Medical Center, Minneapolis, MN

### **Participate in a cutting edge educational experience through live simulations of CICU and emergency department MCS emergencies**

Aimee Gardner, CCP, BS, Cincinnati Children's Hospital Medical Center, Cincinnati, OH

Gary Geis, MD, Cincinnati Children's Hospital Medical Center, Cincinnati, OH

## PULMONARY 2 | ECMO FOR SEVERE RESPIRATORY DISEASES

3:45-5:00pm - Columbia 11 & 12

Co-Chairs:

Daniel Brodie, MD, Columbia University Medical Center, New York, NY

Enrique Diaz-Guzman, MD, University of Alabama, Birmingham, AL

3:45-4:05pm

### **ECMO For Respiratory Support, Clinical Trial**

Daniel Brodie, MD, Columbia University Medical Center, New York, NY

4:05-4:25pm

### **ECMO For Respiratory Support: Pulmonologist Perspective**

Harish Seethamraju, MD, University of Kentucky, Lexington, KY

## PULMONARY ABSTRACTS

4:30-4:45pm

### **Use of Double Lumen Veno-Venous Extracorporeal Membranous Oxygenation Cannula For Patients With Acute Pulmonary Failure As A Bridge To Decision Or Lung Transplantation**

Roh Yanagida, MD, PhD, University of Kentucky, Lexington, KY

4:45-5:00pm

### **Propofol Use In Patients Supported With Extracorporeal Membrane Oxygenation Is Associated With An Increased Risk Of Adverse Events**

Aida Venado, MD, University of Alabama, Birmingham, AL - ASAIOfyi Member

## RENAL 2 | VASCULAR ACCESS: VASCULAR REMODELING & BIOMECHANICS MODELING

3:45-5:00pm - Cardozo Room

Co-Chairs:

Howard Loree, PhD, Flow Forward Medical Inc, Lowell, MA

Nicholas Franano, MD, Flow Forward Medical Inc, Olathe, KS

3:45-4:08pm

### **Mechanisms Of Flow-Mediated Dilation And Intimal Hyperplasia**

Prabir Roy-Chaudhury, MD, PhD, University of Cincinnati, Cincinnati, OH

4:08-4:30pm

### **The Role Of Disturbed Flow In AVF Stenosis: Numerical And Experimental Results**

Bogdan Ene-Iordache, Eng. D, Mario Negri Institute of Pharmacological Research, Milan, Italy

## RENAL ABSTRACTS

4:30-4:45pm

### **Particle Image Velocimetry (PIV) Of The Venous Needle Jet During Haemodialysis**

David Fulker, University of New South Wales, Sydney, Australia

4:45-5:00pm

### **Fluid And Solid Mechanics Modeling Of Arteriovenous Fistula Biomechanics**

Patrick McGah, PhD, University of Washington, Seattle, WA

## PEDIATRIC 1 | PEDIATRIC ECMO: A HISTORICAL PERSPECTIVE, CURRENT EXPERIENCE AND FUTURE INNOVATIONS

3:45-5:00pm - Gunston Room

Co-Chairs:

David Cooper, MD, University of Cincinnati, Cincinnati, OH

Mark Plunkett, MD, Amplatz Children's Hospital, Minneapolis, MN

3:45-4:10pm

### ECMO – Humble Beginnings

Gail Annich, MD, University of Michigan, Ann Arbor, MI

4:10-4:35pm

### ECMO – State Of The Art

David Cooper, MD, Cincinnati Children's Hospital, Cincinnati, OH

4:35-5:00pm

### ECMO – The Future Is Bright

Matthew Paden, MD, Emory University, Atlanta, GA

## CARDIAC POSTERS

8:00-5:00pm - Columbia Hall

- 101 Single Access Versus Dual Access Perfusion**  
Saad Abdel-Sayed, PhD, University Hospital CHUV, Lausanne, Switzerland
- 102 Use Of A Single Circuit To Provide Temporary Mechanical Respiratory And Circulatory Support In Patients With LV Apical Thrombus And Cardiogenic Shock**  
Geetha Bhat, MD, PhD, Advocate Christ Medical Center, Oak Lawn, IL
- 103 Use of HVADR Controller Log Parameters to Identify Suction Events with a Novel Index**  
Jennifer Carrasquilla, HeartWare Inc, Miami Lakes, FL
- 104 Computational Fluid Dynamics Evaluation Of Unsteady Flow In A Left Ventricular Assist Device**  
Jeerasit Bumrungratch, Queensland University of Technology, Toowong, Australia
- 105 The MVAD® Pump: Suction Detection Initial in-vivo Performance**  
Fernando Casas, PhD, HeartWare Inc, Miami Lakes, FL
- 106 The MVAD® Pump: Flow Estimation Initial in-vivo Performance**  
Fernando Casas, PhD, HeartWare Inc, Miami Lakes, FL
- 107 Progress In The Development Of A Pneumatic Extracorporeal Ventricular Assist System**  
Jeff Conger, BS, RRT, Texas Heart Institute, Houston, TX
- 108 Development Of An LVAD Inlet Cannula Tip With Integrated Volume Sensor**  
Joshua Cysyk, PhD, Penn State College of Medicine, Hershey, PA
- 109 Rotary Blood Pump Control Based On Left Ventricular Stroke Work**  
Joshua Cysyk, PhD, Penn State College of Medicine, Hershey, PA
- 110 Alternation Of Left Ventricular Load By A Continuous-flow Left Ventricular Assist Device With A Native Heart Load Control System In Chronic Awake Phase**  
Kazuma Date, MD, National Cerebral & CV Research Institute, Osaka, Japan
- 111 Rapid Postoperative Recovery Of High Molecular Weight von Willebrand Factor Multimers After Cardiac Transplantation In A Patient Bridged With A Continuous Flow Left Ventricular Assist Device**  
Mary Beth Davis, MSc, CTP, CCRP, Vanderbilt University, Nashville, TN
- 112 Enhanced Hemolytic Performance of the MVAD® Pump After CFD-Based Optimization**  
Zoe Demou, PhD, HeartWare Inc, Miami Lakes, FL
- 113 High Oxygen Partial Pressure Promotes An Inflammatory Response During Extracorporeal Circulation In A Rat Model**  
Yutaka Fujii, PhD, National Cerebral & CV Research Institute, Osaka, Japan - ASAIOfyi Member
- 114 The Amelioration Of The Structure Of Intraaortic Axial Flow Pump For Improving Its Hydrodynamic Performance**  
Li Guorong, MD, PhD, Fu Wai Hospital, Beijing, China
- 115 Diagnostic Efficacy Of Miniaturized Tee In Hemodynamic Management**  
Harold Hastings, PhD, ImaCor, Garden City, NY
- 116 Flow In A Wound Fiber Membrane Oxygenator: Particle Image Velocimetry For The Validation Of Computational Fluid Dynamics**  
Felix Hesselmann, Dipl.-Ing, Institute of Applied Medical Engineering, Aachen, Germany
- 117 Paracorporeal VAD For Left And Right Heart Support**  
Andrew Hunsberger, MSBE, MiTiHeart Corporation, Albany, NY
- 118 Thrombosis In Ventricular Assist Devices**  
Staci Jessen, BS, Texas A&M University, College Station, TX - ASAIOfyi Member
- 119 Hemodynamic Effects Of The Impella CP And TandemHeart Temporary Circulatory Support Devices In A Model Of Acute Left Heart Injury**  
Vikram Paruchuri, MD, Tufts Medical Center, Boston, MA
- 120 Intraoperative Fitting Study Of Cleveland Clinic Continuous-Flow Total Artificial Heart**  
Jamshid Karimov, MD, PhD, The Cleveland Clinic, Cleveland, OH
- 121 Venous Arterial Extracorporeal Membrane Oxygenation with Minimally Invasive Left Ventricular Decompression**  
Jeffery Keenan, MD, Duke University Medical Center, Durham, NC
- 122 The MVAD® Pump: Flow And Impeller Axial Displacement**  
Jeffrey Kennington, MSME, HeartWare Inc, Miami Lakes, FL
- 123 The Influence Of A Novel Pulsatile Driving Mode In An Implantable Continuous Flow LVAD (EVAHEART) Of Hemolytic Performance**  
Satoru Kishimoto, MD, National Cerebral & Cardiovascular Center, Osaka, Japan
- 124 An Improved Method For Triphenyl Tetrazolium Chloride (TTC) Staining Of Myocardial Sections In Ischemia-Reperfusion Studies**  
Sara Lee, BS, Texas A&M University, College Station, TX - ASAIOfyi Member
- 125 Lessons Learned From Failed Left Ventricular Assist Device: Inflow Cannula Is An Important Source Of Device Thrombosis**  
Kenneth Liao, MD, PhD, University of Minnesota, Minneapolis, MN
- 126 Programmed Speed Reduction Enables Aortic Valve Opening And Increased Pulsatility Without Diminishing Aortic Flow**  
Karen May-Newman, PhD, San Diego State University, San Diego, CA
- 127 Berlin Heart Innovation Pipeline**  
Francisco Morales Serrano, PhD, Berlin Heart GmbH, Berlin, Germany
- 128 Coagulation-Based Hemotherapy Protocol To Decrease Blood Utilization And Need For Reoperation For Bleeding Associated With Left Ventricular Assist Device Implantation**  
Rajko Radovancevic, MD, University of Texas, Houston, TX
- 129 In Vitro Evaluation Of A Physiological VAD Controller Under Fibrillation, Tachycardia, Hypovolemia, And Hypertension Conditions**  
Gregor Ochsner, MS, ETH Zurich, Zurich, Switzerland

- 130 Position Sensing Development For Pulsatile Blood Pumps**  
Stephanie, Schmitz, Dipl.-Ing, Institute of Applied Medical Engineering, Aachen, Germany
- 131 State of The Art: Virtual Implantation Technique Of Mechanical Circulatory Support Devices To Ensure Spatial Compatibility In Small-Size Patients**  
Tony Aliatim, BA, Materialise USA, Plymouth, MI
- 132 ECMO To Cardiopulmonary Bypass via Reservoir Insertion**  
Ryan Davies, MD, Nemours/Alfred I duPont Hospital for Children, Wilmington, DE
- 133 Blood Pressure Measurement In Axial Flow Left Ventricular Assist Devices**  
Rajko Radovanecvic, MD, University Of Texas Health Science Center, Houston, TX
- 134 The Role Of Cardiac Trabeculae On Ventricular Mechanics**  
Camilla Bianchi, MSc Politecnico di Milano, Milan, Italy
- 135 Inferior hemolytic Performance Of The MVADR Pump After CFD-Based Optimization**  
Behzad Soleimani, MD, Penn State Hershey Medical Center, Hershey, PA
- 136 Transient Reversible Inflow Obstruction In Diaphragmatically-Inserted Ventricular Assist Devices**  
Erik Sorensen, PhD, University of Maryland Medical Center, Baltimore, MD
- 137 Prospective Characterization Of Power Utilization And Temporal Correlation With Indices Of Hemolysis, Coagulation Status, And Adverse Events In A Continuous Axial Flow Pump**  
Robert Steffen, MD, Cleveland Clinic, Cleveland, OH
- 138 Development Of A Compact Pneumatic Drive Unit With A DC Servo Motor For A Ventricular Assist Device**  
Hirohito Sumikura, PhD, National Cerebral & Cardiovascular Center, Osaka, Japan - ASAIOfyi Member
- 139 Comparison Of The Impella And TandemHeart: Numerical Simulation Of Unloading**  
Robert Svitek, PhD, CardiacAssist Inc, Pittsburgh, PA
- 140 Valve Surgery In Hemodialysis Patients: Surgical Outcomes And Risk Factor Analysis**  
Ippei Takazawa, MD, Jichi Medical University, Tochigi, Japan - ASAIOfyi Member
- 141 Miniaturization Of An Implantable Axial-Flow Ventricular Assist Device With Non-Contacting Levitation System**  
Tomonori Tsukiya, PhD, National Cerebral & Cardiovascular Center, Osaka, Japan
- 142 Evaluation Of An Intra-Aortic Ventricular Assist Device Concept In A Hybrid Multi-lumped Mock Circulatory Loop**  
Yaxin Wang, MD, University of Cambridge, Cambridge, United Kingdom
- 143 The Improvements of Hemodynamic Performance Of The Synchronized Bileaflet Mechanical Heart Valve**  
Chi-Hsiao Yeh, Chang Gung Memorial Hosp, Keelung, Taiwan
- 144 Analysis Of Specific Absorption Rate And Internal Electric Field In Human Muscle Tissue Surrounding Air-core-coil Type Transcutaneous Energy Transmission Transformer**  
Nur Zulkifli, Tokyo University of Science, Tokyo, Japan
- 145 EuroSCORE And STS-SCORE In Indicating Vascular Access For Transcatheter Aortic Valve Implantation (TAVI)**  
Akira Kawaguchi, MD, PhD, Tokai University School of Medicine, Isehara, Japan

**RENAL POSTERS**

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

- 146 Prediction Of Single Response During Dialysis: Bayesian Estimation Of Patient-specific Parameters And Latent State Variables**  
Camilla Bianchi, MSc, Politecnico di Milano, Milan, Italy
- 147 Quantitation of Transfer Of Dissolved Oxygen In Extracorporeal Hemodialysis Circuits**  
Mohamed Elnachef, MD, SIOF Institute, Orange, CA
- 148 Effects Of Anastomotic Angle And Boundary Conditions On Disturbed Flow In Radiocephalic Fistulae For Hemodialysis**  
Bogdan Ene-Iordache, Eng D, Mario Negri Institute, Milan, Italy
- 149 Comparison Of Outflow Vein Pulse Pressure With The Arteriovenous Fistula Eligibility (AFE) System And Traditional Arteriovenous Fistula (AVF) Using Mock Loop In Vitro Models**  
Howard Loree, PhD, Flow Forward Medical Inc, Lowell, MA
- 150 On-line Dialysate Infusion To Estimate Absolute Blood Volume In Dialysis Patients**  
Daniel Schneditz, PhD, Medical University Graz, Graz, Austria
- 151 Absolute Blood Volume And Hepato-splanchnic Blood Flow Measured By Indocyanine Green Kinetics During Hemodialysis**  
Daniel Schneditz, PhD, Medical University Graz, Graz, Austria
- 152 The Self-locating Catheter Is Preferable To A Straight Tenckhoff For Acute Onset Of Peritoneal Dialysis**  
Bernd Stegmayr, MD, PhD, Umea University, Umea, Sweden
- 153 The World Apheresis Association Apheresis Registry Enables You To Perform Own Report**  
Bernd Stegmayr, MD, PhD, Umea University, Umea, Sweden

**BIOENGINEERING POSTERS**

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

- 154 Liposome-Encapsulated Hemoglobin Improves Tumor Oxygenation as Detected by Near-Infrared Spectroscopy (NIRS) in Colon Carcinoma in Mice**  
Akira Kawaguchi, MD, PhD, Tokai University School of Medicine, Kanagawa, Japan
- 155 Nanofiber Manufacturing Device For Stem Cell Studies**  
Alaa Alhussein, George Mason University, Sterling, VA
- 156 Computational Simulations Of Embolus Migration In The Inferior Vena Cava**  
Kenneth Aycock, BS, The Pennsylvania State University, University Park, PA
- 157 Heparin Leakage In Central Venous Catheters**  
Michael Barbour, BS, University of Washington, Seattle, WA
- 158 The Histological Identification Of Iron As A Function Of Thrombus Aging**  
Xavier Candela, BS, Pennsylvania State University, State College, PA
- 159 Control System To Diagnosis And Treatment Of Failures For Ventricular Assist Devices**  
Andre Cavalheiro, MSc, Fundacao Santo Andre, Sao Paulo, Brazil
- 160 Mechanical Characterization of Alginate/Chitosan-Based Bone Adhesives For Trauma Surgery**  
Francisco Cedano Serrano, Universidad de Los Andes, Bogota, Colombia
- 161 Particle Image Velocimetry Flow Studies On A Pulsatile Pediatric Ventricular Assist Device**  
Idagene Cestari, PhD, University of Sao Paulo School Heart Institute, Sao Paulo, Brazil

- 162 Changes Induced In Stem Cells Shape And Orientation Using Laser Patterning**  
*Ismar Cestari, MD, PhD, University of Sao Paulo Heart Institute, Sao Paulo, Brazil*
- 163 Comparison In The Dosification Strategy Of Nitric Oxide (NO) During Resuscitation From Hemorrhagic Shock (HS): Inhaled NO And NO Nanoparticles (NO-np)**  
*Julian Crump, MSc, Universidad de Los Andes, Bogota, Colombia*
- 164 Systems Biology Approach To Identify Critical Risk Factors For Pulmonary And Intestinal Edema With Continuous-flow LVADs**  
*Ranjeet Dongaonkar, PhD, Texas A&M University, College Station, TX - ASAIOfyi Member*
- 165 Comparison Between Two Different Cannulation Systems Of A Left Ventricular Assist Device Using A Cardiovascular Simulator – Hydrodynamic Impacts On Right Ventricular**  
*Jeison Fonseca, PhD, Institute Dante Pazzanese of Cardiology, Sao Paulo, Brazil - ASAIOfyi Member*
- 166 Multi-species in vitro Assays For Platelet Activation And VWF Degradation For in vitro Safety Assessment of VADs**  
*Chris Hoi Houn Chan, PhD, Calon Cardio-Technology Ltd., Swansea United Kingdom - ASAIOfyi Member*
- 167 In Vivo Validation Of Ultrasound Image Velocimetry**  
*Katherine Fraser, PhD, Imperial College London, United Kingdom - ASAIOfyi Member*
- 168 Oxygen Therapy Burn Prevention**  
*James Hartanto, BS, University of California, Davis, CA - ASAIOfyi Member*
- 169 Gabor Wavelet Transformation For Monitoring The Thrombosis In The Blood Pump**  
*Choon-Sik Jhun, PhD, Penn State College of Medicine, Hershey, PA*
- 170 Ventricular Unloading By Continuous Flow Blood Pump And its Effect On Myocardial Wall Stress: Finite Element Analysis**  
*Choon-Sik Jhun, PhD, Penn State College of Medicine, Hershey, PA*
- 171 Development Of A Jet Flow Circulation System For Preventing Filter Clogging During Cell-Free And Concentrated Ascites Reinfusion Therapy (CART)**  
*Masato Katayama, The University of Tokushima, Tokushima, Japan - ASAIOfyi Member*
- 172 Do the Difference of HQ Curve Gradient and the Stiffness of Rotational Speed Control for Rotary Blood Pump Make Any Change on Blood Flow on an End Organ?**  
*Tomoya Kitano, MME, Sun Medical Technology Research Corp, Suwa, Japan*
- 173 Vascular Adaptation to Pulsatile Endothelial Shear Stress Plays a Central Role in the Physiological Response to Continuous-flow VADs**  
*Sarah Knezek, BS, Texas A&M University, College Station, TX - ASAIOfyi Member - ASAIO Fellowship Recipient*
- 174 The Role of Neutron Activation Analysis in Pathological Evaluation of Silver-Eluting Biomedical Devices**  
*Sara Lee, BS, Texas A&M University, College Station, TX*
- 175 Hydrodynamic Performance and Hemolysis Tests Comparing Different Impeller Angles of a Centrifugal Blood Pump to be Used as Bridge to Decision or Recovery**  
*Aaron Andrade, PhD, Institute Dante Pazzanese of Cardiology, Sao Paulo, Brazil*
- 176 Flow Analysis of the Tip of a Hemodialysis Puncture Needle Based on Computational Fluid Dynamics**  
*Yoichi Marushita, PhD, Toin University of Yokohama, Yokohama, Japan*
- 177 ETHICON OMNEXTM Surgical Sealant Achieves Greater Than 98% Reduction in Suture Hole Bleeding on Average in an ex-vivo Porcine Aortotomy Closure Model**  
*John Matonick, PhD, Ethicon, Somerville, NJ*
- 178 The Effect of Mitral Incompetence During LVAD Power Loss In Patients With a Closed Aortic Valve**  
*Karen May-Newman, PhD, San Diego State University, San Diego, CA*
- 179 Minimally Invasive Handheld Balloon Sinuplasty Device**  
*Caroline Mayo, University of Cincinnati, Cincinnati, OH*
- 180 Leakage of Central Venous Catheter Locking Fluid by Hemodynamic Transport**  
*Patrick McGah, PhD, University of Washington, Seattle, WA*
- 181 Evaluation of Functionality Of Modified Red Blood Cells for Intravascular Drug Delivery**  
*Ryan Mooney, University of Pittsburgh, Pittsburgh, PA - ASAIOfyi Member*
- 182 Evaluation of Vascular Access Function Based on the Normalized Duration Time of Shunt Murmurs**  
*Yuka Motohashi, PhD, Toin University of Yokohama, Yokohama, Japan*
- 183 Sterilization Study of Perfluorocarbon (PFC) Emulsions Used as Oxygen Carriers**  
*Sandra Navarrete, Universidad de los Andes, Bogota, Colombia*
- 184 Effects of Hydration State and Preserved Intestinal Layers on the Mechanical Properties of SIS Vascular Grafts**  
*Javier Navarro Rueda, MSc, Universidad de Los Andes, Bogota, Colombia - ASAIOfyi Member*
- 185 Hemodynamic Factors That Affect Hemolysis in Turbulent Shear Flows**  
*Quoc Nguyen, PhD Candidate, The University of Oklahoma, Norman, OK*
- 186 In-Vitro Shear Stress-Induced platelet activation: Differences between Species: Human, Ovine, and Porcine**  
*Shuqiong Niu, MD, University of Maryland School of Medicine, Baltimore, MD - ASAIOfyi Member*
- 187 Study On Evaluation Of Cell Growth Potential With Cell Aging For Culture Process Simulation**  
*Hiroo Noguchi, PhD, Tokyo Denki University, Tokyo, Japan - ASAIOfyi Member*
- 188 Impact of Outflow Restriction on the HeartWare HVAD® Pump Flow Estimation Accuracy**  
*Nathalie Nunez, MS, HeartWare Inc, Miami Lakes, FL*
- 189 Experimental Study of Recirculation Rate in Coaxial Double-lumen Catheter**  
*Hisano Oshiro, Toin University of Yokohama, Yokohama, Japan*
- 190 Effects of Turbulent Eddy Structures on Hemolysis**  
*Mesude Ozturk, University of Oklahoma, Norman, OK*
- 191 Computational and Theoretical Approach to Determining Radial-Coordinate Spring Constant in Universidad de los Andes' Nitinol Cardiovascular Occluder Devices.**  
*Andres Rubiano, MSME, University of the Andes, Bogota, Colombia*
- 192 Quantitative Evaluation of the Relationship Between Shunt Murmur Characteristics and Fluid Parameters**  
*Kazuma Sasaki, Toin University of Yokohama, Yokohama, Japan*
- 193 Quantitative Evaluation of Improvement of Swallowing Function by Swallowing Viscosity Adjusted Foods and Carbonated Beverages**  
*Kazuma Sasaki, Toin University of Yokohama, Yokohama, Japan*
- 194 Effect of High Shear Exposure on Neutrophil Rolling Behavior**  
*David Schmidtke, PhD, University of Oklahoma, Norman, OK*

## THURSDAY, JUNE 19 (continued)

- 195 Experimental Investigation of The Effects of Pressure Guide Wire Thickness on Fractional Flow Reserve Using Coronary Stenosis Models**  
*Masato Takenaka, Toin University of Yokohama, Yokohama, Japan*
- 196 Preparation, Characterization and Evaluation of Scaffolds Produced From Small Intestinal Submucosa and Hyaluronic Acid for Potential Use in Tissue Regeneration**  
*Javier Navarro Rueda, MSc, Universidad de Los Andes, Bogota, Colombia- ASAIOfyi Member*
- 197 Validation of a Computational Thrombosis Model With an in vitro MRI Thrombus Growth Data Set**  
*Joshua Taylor, BS, The Pennsylvania State University, University Park, PA*
- 198 Control Strategy for Preventing Suction and Maintaining Physiological Perfusion With Rotary Blood Pumps**  
*Yu Wang, PhD, University of Louisville, Louisville, KY - ASAIOfyi Member*
- 199 Effect of Rotary Bend Fatigue on the Corrosion Resistance of Common Medical Alloys**  
*Jason Weaver, PhD, FDA, Silverspring, MD*
- 200 In Vitro Analysis of Thrombi Growth Using PDMS Models**  
*Kory Witmer, PhD, The Pennsylvania State University, University Park, PA*
- 201 Polymer-linked Argatroban Provides an Effective and Safe Nonthrombogenic Coating for Extracorporeal Circulation**  
*Jane Yu, MD, University of Michigan, Ann Arbor, MI*

### ASAIO MEMBER BUSINESS MEETING

**5:15-5:45pm** - Embassy Room

### ASAIO WELCOME RECEPTION

**6:00-7:00pm** - Columbia Hall

## FRIDAY, JUNE 20

### GENERAL SESSION 2

**8:00am-12:00pm** - Columbia 5

Co-Chairs:

*William Weiss, PhD, Prof Surgery & Bioengineering, Penn State College of Medicine, Hershey, PA*

*Jonathan Haft, MD, Associate Prof Cardiac Surgery, University of Michigan, Ann Arbor, MI*

### ASAIOfyi – for young innovators Rapid Fire Presentations Session 2

**8:00-8:15am**

**8:00-8:05am**

**Further Development And Validation of RBC Mechanical Fragility Test**

*Andrew Wearden, University of Pittsburgh, Pittsburgh, PA - ASAIOfyi Member*

**8:05-8:10am**

**Hemodynamic Transesophageal Echocardiography After Left Ventricular Assist Device Implantation**

*Simon Maltais, MD, PhD, Vanderbilt University Medical Center, Nashville, TN - ASAIOfyi Member*

**8:10-8:15am**

**Left Ventricular End-diastolic Pressure-dependent Passive And Active Flow Adjustment Scheme In Continuous-flow Left Ventricular Assist Devices**

*Vakhtang Tchanchaleishvili, MD, University of Rochester, Rochester, NY - ASAIOfyi Member*

### ASAIO 3rd Annual Medical Device Entrepreneur's Forum – *Uniting Scientific Research, Clinical Practice, Regulatory Affairs and New Business Development*

**8:15-9:45am**

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

#### Panelists:

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

*Brian Duncan, MD, MBA, Sorin Group, Arvada, CO*

*Eric Chen, MS, FDA, Silver Spring, MD*

#### Ballstent Microcatheter<sup>TM</sup>

*Nicholas Franano, MD, Metactive Medical Inc, Olathe, KS*

#### Tonometry Based System For CF-VAD Optimization

*Peter Eckman, MD, University of Minnesota, Minneapolis, MN*

#### The Cordex Smartcuff<sup>TM</sup>: A Direct, Calibrated Measurement Of Endothelial Dysfunction

*Kathy Magliato, MD, MBA, St. John's Health Center, Santa Monica, CA*

### PRESIDENT'S ADDRESS



**9:45-10:15am** - ASAIO: Shaping The Future

*Mark Slaughter, MD, Professor & Chairman, CV & Thoracic Surgery, University of Louisville, Louisville, KY*

### Visit Exhibits & Posters – Enjoy Refreshments

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



**11:00-11:30am** - ASAIO Hastings Lecture – Serene Stupidity

*Richard Wampler, MD, Associate Prof Surgery, Oregon Health Sciences University, Loomis, CA*

**11:30-11:45am** - ASAIO Fellowships & Awards

*Dr. Mark Slaughter, President ASAIO*

### LUNCH BREAK

**12:15-1:15pm**

### ASAIOfyi – for young innovators - Working Luncheon 2 – “Meet The Experts”

**Embassy - Attendance Is Limited to 20 Reservations from ASAIOfyi Members**

*ASAIO President: Mark Slaughter, MD, University of Louisville, Louisville, KY*

*ASAIO President Elect: William Weiss, PhD, Penn State College of Medicine, Hershey, PA*

*ASAIO Immediate Past President: Kurt Dasse, PhD, GeNO LLC, Waltham, MA*

## CARDIAC 3 | COMPLICATIONS AND LONG-TERM MANAGEMENT

**1:30-3:00pm** - Columbia 5

Co-Chairs:

*Michael Bowdish, MD, University of Southern California, Los Angeles, CA*

*Scott Silvestry, MD, Washington University School of Medicine, St. Louis, MO*

**1:30-1:45pm**

**What INTERMACS Has Taught Us About Complications**

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

**1:45-2:00pm**

**What INTERMACS Has Taught Us About Patient Management**

*Pavan Atluri, MD, Hospital Of The University of Pennsylvania, Philadelphia, PA*

## CARDIAC ABSTRACTS

**2:00-2:15pm**

**Association Of Left Ventricular Assist Device Speed And Risk of Hemorrhagic Stroke**

*Jeffrey Ziffra, Advocate Christ Medical Center, Oak Lawn, IL*

**2:15-2:30pm**

**Thoratec HeartMate II To HeartWare HVAD Ventricular Assist Device Exchange Experience**

*Jatin Anand, MD, Baylor College of Medicine, Houston, TX - ASAIOfyi Member*

**2:30-2:45pm**

**Percutaneous Driveline Fracture Following Implantation of the HeartMate II Left Ventricular Assist Device: How Durable Is Driveline Repair?**

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

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

**Model For End-Stage Liver Disease Score Predicts Right Ventricular Failure In Left Ventricular Assist Device Patients**

*Laura Coyle, MSN, Advocate Christ Medical Center, Oak Lawn, IL - ASAIOfyi Member*

## BIOENGINEERING 3 | TRANSLATION OF ARTIFICIAL ORGANS FROM ACADEMIA TO BEDSIDE: PATHS, IMPEDIMENTS, AND SOLUTIONS

**1:30-3:00pm** - Columbia 9 & 10

Co-Chairs:

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

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

**1:30-1:45pm**

**Role Of Bioengineering In Clinical Practice**

*Michael Sobieski, RN, CCP, University of Louisville, Louisville, KY*

**1:45-2:00pm**

**Artificial Organ Research In Bioengineering Education**

*Amy Throckmorton, PhD, Drexel University, Philadelphia, PA*

**Panel Discussion:**

**2:00-2:10pm**

**Funding Perspective**

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

**2:10-2:20pm**

**Clinical Perspective**

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

**2:20-2:30pm**

**Academia Perspective**

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

**2:30-2:40pm**

**Industry Perspective**

*Jeffrey LaRose, MSME, HeartWare Inc, Miami Lakes, FL*

**2:40-2:50pm**

**Regulatory Perspective**

*Eric Richardson, MS, FDA, Silver Spring, MD*

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

**Q&A**

## VAD COORDINATOR SESSION 2 | VADs FOR ADULTS WITH CONGENITAL HEART DISEASE

**1:30-3:00pm** - Cardozo Room

Co-Chairs:

*Aimee Gardner, CCP, BS, Cincinnati Children's Hospital Med Center, Cincinnati, OH*

*Pamela Combs, PhD, Seton Heart Specialty Care & Transplant Center, Austin, TX*

**1:30-2:10pm**

**Pediatric Perspective**

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

*David Morales, MD, Cincinnati Children's Hospital Medical Center, Cincinnati, OH*

**2:10-2:30pm**

**Adult Perspective**

*Ernest Haeusslein, MD, Seton Heart Specialty Care & Transplant, Austin, TX*

**2:30-2:50pm**

**Patient Speaking On Their Transition**

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

**Q & A**

## PULMONARY 3 | CANNULATION AND NEW DEVICE DEVELOPMENT

**1:30-3:00pm** - Columbia 11 & 12

Co-Chairs:

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

*Ralf Borchardt, Dipl.-Ing, University of Aachen, Aachen, Germany*

**1:30-2:00pm**

**ECMO Cannulation And Configuration**

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

## PULMONARY ABSTRACTS

**2:00-2:15pm**

**Superior RV Unloading Of A Transseptal Right-Atrium-to-Left-Atrium Artificial Lung: A Simulation Study**

*Po-Lin Hsu, PhD, Soochow University, Jiangsu, China - ASAIOfyi Member - ASAIO Y Nose' International Award Recipient*

**2:15-2:30pm**

**Oxygenator With Integrated Pulsatile Pump And Heat Exchanger: In-Vitro And In-Vivo Results**

*Ralf Borchardt, Dipl.-Ing, RWTH Aachen University, Aachen, Germany - ASAIOfyi Member*

**2:30-2:45pm**

**The Pediatric Artificial Lung: Development Of A Model Of Pediatric Chronic Lung Disease**

*Ryan Davis, MD, University of Michigan, Ann Arbor, MI*

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

**Development Of A High Efficiency Passive Exchange Paracorporeal Ambulatory Assist Lung (P-PAAL) Through Bundle Geometry Variation**

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

## RENAL 3 | VASCULAR ACCESS: INNOVATIVE DEVICES

**1:30-3:00pm** - Fairchild Room

Co-Chairs:

Lalathaksha Kumbar, MD, Henry Ford Hospital, Detroit, MI

Jeffrey Lawson, MD, PhD, Duke University Medical Center, Durham, NC

**1:30-1:45pm**

### Arteriovenous Fistula Eligibility System

Nicholas Franano, MD, Flow Forward Medical Inc, Olathe, KS

**1:45-2:00pm**

### TVA-FLEX Percutaneous Autogenous Arteriovenous Fistula

William Cohn, MD, Texas Heart Institute, Houston, TX

**2:00-2:15pm**

### Optiflow Vascular Anastomosis

Adam Dakin, MBA, Bioconnect Systems Inc, Ambler, PA

**2:15-2:30pm**

### NexSite Catheter

Chris Davey, MBA, Marvao Medical Devices Ltd, Galway, Ireland

## RENAL ABSTRACTS

**2:30-2:45pm**

### Practical Lifelong Vascular Access For Forearm Wearable Artificial Organs

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

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

### Novel Use Of Existing Technology For Better Patient Outcome In Outpatient Hemodialysis Unit

Roshan Patel, MD, Elmhurst Hospital, Elmhurst, NY

## PEDIATRIC 2 | PEDIATRIC PERFUSION: PAST, PRESENT & FUTURE INNOVATIONS

**1:30-3:00pm** - Gunston Room

Co-Chairs:

Richard Walczak, BS, Duke University Medical Center, Durham, NC

Vincent Olshove, CPP, Cincinnati Children's Hospital Medical Center, Cincinnati, OH

**1:30-1:55pm**

### Pediatric Perfusion – Historical Perspective – 1950's through 1980's

Aaron Hill, BS, Sentara Carplex, Hampton, VA

**1:55-2:20pm**

### Present State of Pediatric Perfusion – 1990's through 2014

Craig McRobb, CCP, Children's Hospital Colorado, Aurora, CO

**2:20-2:45pm**

### Pediatric Perfusion – The Future – Beyond 2014 To Tomorrow

Vincent Olshove, CCP, Cedars-Sinai, Los Angeles, CA

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

Q&A

## Visit Exhibits & Posters –

## Enjoy Refreshments

**3:00-3:45pm** -

## CARDIAC 4 | CONTROVERSIES IN MECHANICAL CIRCULATORY SUPPORT

**3:45-5:00pm** - Columbia 5

Co-Chairs:

Edwin McGee, MD, Northwestern Memorial Hospital, Chicago, IL

Sanjeev Aggarwal, MD, Mid America Heart & Lung Surgeons, Kansas City, MO

## REVIVE-IT

**3:45-4:00pm**

### Right Pump, Right Time

Scott Silvestry, MD, Washington University School of Medicine, St. Louis, MO

**4:00-4:15pm**

### Wrong Pump, Wrong Time

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

## I Need a Device For BTT, Which Is Best?

**4:15-4:30pm**

### Heartmate II

Peter Eckman, MD, University of Minnesota, Minneapolis, MN

**4:30-4:45pm**

### HeartWare HVAD

Robert Kormos, MD, University of Pittsburgh Medical Center, Pittsburgh, PA

**4:45-5:00pm**

### Total Artificial Heart

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

## BIOENGINEERING 4 | BLOOD DAMAGE AND THROMBOSIS

**3:45-5:00pm** - Columbia 9 & 10

Co-Chairs:

Katherine Fraser, MD, Imperial College London, London, England

Richard Malinauskas, PhD, FDA, Silver Spring, MD

**3:45-4:00pm**

### Shear Stress And Platelet Activation Process

Zaverio Ruggeri, MD, The Scripps Research Institute, La Jolla, CA

**4:00-4:15pm**

### Flow In The Left Ventricle And Relationship With Thromboembolism

Karen May-Newman, PhD, San Diego State University, San Diego, CA

## BIOENGINEERING ABSTRACTS

**4:15-4:30pm**

### Creation Of A Blood Damage Evaluation Handbook - A Suite Of In Vitro Haemocompatibility Tests For Ventricular Assist Devices

Ina Laura Pieper, MSc, Calon Cardio-Technology Ltd, Swansea, United Kingdom - ASAIOfyi Member

**4:30-4:45pm**

### Hyperspectral Imaging Of Thrombus Formation In A Hydrodynamically Levitated Centrifugal Blood Pump

Daisuke Sakota, National Institute Advanced Industrial Science & Tech, Tsukuba, Japan - ASAIOfyi Member

**4:45-5:00pm**

### Decreased Platelet Aggregation Following Single Pass Exposure To Elevated Shear Rates

Trevor Snyder, PhD, Integrus, Baptist Medical Center, Oklahoma, OK

## PULMONARY 4 | ECCO2R / LOW FLOW ECMO

**3:45-5:00pm** - Columbia 11 & 12

Co-Chairs:

Daniel Brodie, MD, University of Columbia Medical Center, New York, NY

Keith Cook, PhD, Carnegie Mellon University, Pittsburgh, PA

**3:45-4:05pm**

### Transport ECMO

Daniel Brodie, MD, University of Columbia Medical Center, New York, NY

**4:05-4:25pm**

**Extracorporeal CO2 Removal System: Recent Advances And Results In Hypercapnic Respiratory Failure**

*Nausherwan Burki, MD, PhD, University of Connecticut Health Center, Farmington, CT*

**4:25-4:45pm**

**ECMO Simulation**

*Marc Dickstein, MD, Columbia University, New York, NY*

## PULMONARY ABSTRACT

**4:45-5:00pm**

**Development Of A Ventilator System For Total Liquid Ventilation Using Silicone Membrane Oxygenator**

*Norihiro Miyagi, Tokyo Denki University, Tokyo, Japan*

## RENAL 4 | VASCULAR ACCESS: INNOVATIVE THERAPEUTICS & MATERIALS

**3:45-5:00pm** - Fairchild Room

Co-Chairs:

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

*Nicholas Franano, Flow Forward Medical Inc, Olathe, KS*

**3:45-4:05pm**

**Immunosuppressive Therapies to Prevent Intimal Hyperplasia**

*Timmy Lee, MD, University of Alabama, Birmingham, AL*

**4:05-4:25pm**

**EnSION Infection Resistant Surface**

*Patrick Cahalan, BS, EnSION Inc, Cape Coral, FL*

**4:25-4:45pm**

**Tissue-Engineered Vascular Grafts**

*Jeffrey Lawson, MD, PhD, Duke University Medical Center, Durham, NC*

## RENAL ABSTRACT

**4:45-5:00pm**

**A Nanofibrous Bioactive Hemodialysis Access Graft**

*Mauricio Contreras, MD, BIDMC, Boston, MA*

## PEDIATRIC 3 | ABSTRACTS

**3:45-4:00pm** - Gunston Room

Co-Chairs:

*Robert Jaquiss, MD, Duke University Medical Center, Durham, NC*

*Mark Plunkett, Amplatz Children's Hospital, Minneapolis, MN*

**3:45-4:00pm**

**Development Of A Neonatal Index For Complications Of ECMO**

*Peter Wearden, MD, PhD, Children's Hospital of Pittsburgh UPMC, Pittsburgh, PA*

**4:00-4:15pm**

**Lung Development In Premature Lambs During Treatment With An Artificial Placenta**

*Benjamin Bryner, MD, University of Michigan, Ann Arbor, MI*

**4:15-4:30pm**

**Surgical Reconstruction Of The Head & Neck Vessels Following ECMO Decannulation In Infants**

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

**4:30-4:45pm**

**Transvenous Laser Assisted Extraction Of Pacing Leads In Pediatric And Complex Congenital Heart Disease**

*Vinod Sebastian, MD, UT Southwestern Medical Center, Dallas, TX*

**4:45-5:00pm**

**Three-Dimensional Laser Flow Measurements Of A Patient-Specific Fontan Physiology With Mechanical Circulatory Assistance**

*Steven Chopski, PhD, Drexel University, Philadelphia, PA - ASAIOfyi Member*

## PEDIATRIC POSTERS

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

*These Posters Will Be Moderated From 5:15-6:45pm*

**ASAIOfyi Member Moderators:**

*Salim Olia, BS, University of Pittsburgh, Pittsburgh, PA*

*Steven Chopski, PhD, Drexel University, Philadelphia, PA*

**202 A Porcine Survival Model for the Novel Impella Pediatric Prototype**

*Melissa Webb, MD, University of Texas Southwestern, Dallas, TX*

**203 Optimal Insertion of HVAD in Children**

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

**204 Mid-term Results of a Novel Valved Polytetrafluoroethylene Conduit for the Right Ventricular Outflow Tract**

*Masahiro Yoshida, Children's Hospital of Pittsburgh, Pittsburgh, PA*

**205 Hemodynamics of a Pediatric End-to-Side Anastomotic Graft with a Viscoelastic Blood Model**

*Bryan Good, Pennsylvania State University, University Park, PA*

**206 Computations and Experiments in the Design of Axial Flow Blood Pumps for Patients with Complex Congenital Cardiac Malformations**

*Steven Chopski, Drexel University, Philadelphia, PA - ASAIOfyi Member*

**207 New Method to Predict Clot Events in ECMO (Theory and Validation)**

*Nikolai Krivitski, PhD, DSc, Transonic Systems Inc, Ithaca, NY*

**208 Peritoneal Dialysis in Infants With Acute Kidney Injury Following Open Heart Surgery: A Single-institution Experience**

*Yang Liu, MD, PhD, Fourth Military Medical University, Shaanxi, China*

**209 A Fluid Dynamic Study of the Effect of Hematocrit in the 12cc Penn State Pediatric Ventricular Assist Device**

*Jeremy Silver, Penn State University, University Park, PA*

**210 Development of Mechanical Circulatory Assist Device For Failed Fontan Circulation**

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

## PULMONARY POSTERS

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

*These Posters Will Be Moderated From 5:15-6:45pm*

**ASAIOfyi Member Moderators:**

*Ralf Borchardt, Dipl.-Ing, RWTH Aachen University, Aachen, Germany*

*Susan Hastings, BS, Georgia Institute of Technology, Atlanta, GA*

**211 A New Software Control with Safety Feedback on Airway Pressure for a Total Liquid Ventilation Prototype**

*Camillia Bianchi, MSc, Politecnico di Milano, Milan, Italy*

**212 Percutaneous Double Lumen Cannula for Right Ventricular Assist: A Computational Fluid Dynamics Study with Experimental Validation**

*Francesca Condemi, University of Kentucky, Lexington, KY*

**213 An in vitro System to Replicate Thrombosis in ECMO**

*Susan Hastings, BS, Georgia Institute of Technology, Atlanta, GA - ASAIOfyi Member*

**214 Evaluation of a Long-term Durability and Antithrombogenicity for a Novel ECMO System Consisting of BIOCUBE 6000 and SOFTLINE Coated ROTAFLOW**

*Nobumasa Katagiri, PhD, National Cerebral CV Center Research Institute, Osaka, Japan*

**215 Development of an Ultra-compact Membrane Oxygenator for New Born Infant**

*Shohei Nukii, BS, Tokyo Denki University, Tokyo, Japan*

**216 Utility Operating Method to Achieve Effective Veno-venous Extracorporeal Membrane Oxygenation**

*Konomi Togo, MA, National Cerebral CV Center Research Institute, Osaka, Japan*

**217 Computational Study of Blood Damage Potential in Three Types of Hollow Fiber Membrane Bundles**

*Jiafeng Zhang, PhD, University of Maryland School of Medicine, Baltimore, MD - ASAIOfyi Member*

**CARDIAC POSTERS:  
Clinical Application Of Available Pumps**

**8:00am-5:00pm** - Columbia Hall  
*These Posters Will Be Moderated From 5:15-6:45pm*  
**ASAIOfyi Member Moderators:**

*Francesco Moscato, PhD, Medical University of Vienna, Vienna, Austria*

*Natasha Loghmanpour, MS, Carnegie Mellon Univ, Pittsburgh, PA*

**218 Evaluation of Potential Device-related Factors Related to HeartMate II Device Thrombosis**

*Kartik Sundaeswaran, PhD, Thoratec Corporation, Pleasanton, CA*

**219 Utilization of Cardiac Tomography Angiography to Assess Predictability of Device Thrombus in Patients with a Left Ventricular Assist Device (LVAD)**

*Sandra Carey, MS, MPH, Baylor University Medical Center, Dallas, TX*

**220 Replacement of the HeartMate II Pump Without Cardiopulmonary Bypass**

*Behzad Soleimani, MD, Penn State Hershey Medical Center, Hershey, PA*

**221 Mid-Term Outcomes Following Left Ventricular Assist Device Therapy: A Single Center Experience**

*Burhan Mohamedali, MD, University of Illinois at Chicago, Chicago, IL*

**222 Performing DT Alone - Kazakhstan Experience**

*Assel Medressova, MD, National Research Center for Cardiac Surgery, Astana, Kazakhstan*

**223 Continuous Flow Left Ventricular Assist Device Does Not Cause More Aortic Valve Leaflet Fusion Than Pulsatile Left Ventricular Assist Device**

*Kenneth Liao, MD, PhD, University of Minnesota, Minneapolis, MN*

**224 Influence of Intermittent Pump Speed Reductions on Pump Flow and Aortic Valve Opening in Rotary Blood Pump Recipients**

*Francesco Moscato, PhD, Medical University of Vienna, Vienna, Austria - ASAIOfyi Member*

**225 Effectiveness of Protocol Guided Heparin Anticoagulation in Patients With TandemHeart Percutaneous Ventricular Assist Device**

*Yeunju Lee, Pharm D, Memorial Hermann - Texas Medical Center, Houston, TX*

**226 Five-year Durability of the HeartMate II Left Ventricular Assist Device**

*Aaron Healy, MD, University of Utah, Salt Lake City Utah - ASAIOfyi Member*

**CARDIAC POSTERS:  
Issues In Patient Management**

**8:00am-5:00pm** - Columbia Hall  
*These Posters Will Be Moderated From 5:15-6:45pm*  
**ASAIOfyi Member Moderators:**

*Teruhiko Imamura, MD, University of Tokyo, Tokyo, Japan*

*Jatin Anand, MD, Baylor College of Medicine, Houston, TX*

**227 Sequential Conditioning of the LVAD-supported Heart as a Strategy for Facilitating Myocardial Recovery**

*Aaron Healy, MD, University of Utah, Salt Lake City Utah - ASAIOfyi Member*

**228 The Use of Probiotics Does Not Reduce Gastrointestinal Bleeding in Patients with Continuous Flow Left Ventricular Assist Devices**

*Aaron Healy, MD, University of Utah, Salt Lake City Utah - ASAIOfyi Member*

**229 Morbid Obesity in HeartMate II Patients is Associated With Lower Rates of Cardiac Transplantation**

*Christopher Holley, MD, University of Minnesota, Minneapolis, MN*

**230 Low Incidence of Driveline and Pump Pocket Infections in a Start-Up LVAD Program**

*Rajko Radovancevic, MD, University Texas Health Science Center, Houston, TX*

**231 Patients Listed with Status 2 had a Poor Prognosis without Mechanical Circulatory Support - How to Indicate Device Implantation among Them?**

*Teruhiko Imamura, MD, PhD, University of Tokyo, Toyo, Japan - ASAIOfyi Member*

**232 Optimized Post-Cardiopulmonary Bypass Biventricular Pacing Improves Hemodynamics Despite QRS Widening: Results From The BiPACS Trial**

*Robin Brusen, MD, Columbia University, New York, NY*

**233 Pulmonary Function Tests after Left Ventricular Assist Device Placement**

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

**234 Pulmonary Function is Decreased After LVAD Placement in Both Obese and Non-Obese Populations**

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

**CARDIAC POSTERS:  
Temporary Support And ECMO**

**8:00am-5:00pm** - Columbia Hall  
*These Posters Will Be Moderated From 5:15-6:45pm*  
**ASAIOfyi Member Moderators:**

*Tim Kaufmann, PhD, RWTH Aachen Univ, Aachen, Germany*

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

**235 Extracorporeal Membrane Oxygenator (ECMO) Support as Bridge to Implantation of Durable Mechanical Circulatory Support (MCS) in Patients with Advanced Cardiogenic Shock (ACS)**

*Behzad Soleimani, MD, Penn State Hershey Medical Center, Hershey, PA*

**236 Extracorporeal Membrane Oxygenator Support as Bridge to Implantation of Continuous Flow Left Ventricular Assist Devices in Patients with Advanced Cardiogenic Shock**

*Behzad Soleimani, MD, Penn State Hershey Medical Center, Hershey, PA*

**237 Outcomes of Left Ventricular Assist Device Patients Requiring a Temporary Right Ventricular Assist Device**

Laura Coyle, MSN, ACN, Advocate Christ Medical Center, Oak Lawn, IL - ASAIOfyi Member

**238 Temporary Biventricular Mechanical Support With CentriMag as Bridge to Decision**

Gardner Yost, BS, Advocate Christ Medical Center, Oak Lawn, IL

**239 Improved Survival in Postcardiotomy Shock Using Modern ECMO**

Edward Stephenson, Penn State Hershey Medical College, Hershey, PA

**240 Extracorporeal Membrane Oxygenation as a Bailout Strategy for Transcatheter Aortic Valve Replacement Complications**

Igor Banjac, University of Texas Health Science Center at Houston, Houston, TX

**241 Development of a Mock Extra Corporeal Membrane Oxygenation (ECMO) Circuit to Assess Recirculation and Cerebral Perfusion**

Ishanth Jayewardene, MD, Victor Chang Cardiac Research Institute Sydney, Australia

**242 Chronic Effects of Air Exposure and Suction on Blood Cell Activation and Renal Injury in an Extracorporeal Circuit**

Lucas Witer, MD, University of Michigan, Ann Arbor, MI

**CARDIAC POSTERS: VAD Management**

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

**These Posters Will Be Moderated From 5:15-6:45pm**

**ASAIOfyi Member Moderators:**

Stephanie Schmitz, Dipl.-Ing, Inst of Applied Medical Engineering, Aachen, Germany

Gretchen Piwinski, BS, Meng, Abiomed Inc, Danvers, MA

**243 Use of a Simple Modified Outpatient Ramp Study to Identify Patients with an Improperly Functioning LVAD**

Robert Steffen, MD, Cleveland Clinic, Cleveland, OH

**244 Experience of The MERA, Pivot-bearing Centrifugal Pump System For Short-term Circulatory Support**

Masataoshi Akiyama, MD, Tohoku University Hospital, Sendai, Japan

**245 Design and Development of a Durable, Percutaneous, Wireless Left Ventricular Assist Device**

Brian Letzen, MS, Yale University, New Haven, CT - ASAIOfyi Member  
ASAIO Fellowship Recipient

**246 Are Flow Measurements Obtained from Continuous Flow Left Ventricular Assist Devices Accurate?**

Firehiwot Achamyeleh, BS, Penn State College of Medicine, Hershey, PA

**247 Reduction of the Radiation Magnetic Field from a Transcutaneous Energy-Transmission Transformer Using a Three-Phase Alternating Current - Analysis and Measurement**

Issei Hashimoto, Tokyo University of Science, Tokyo, Japan

**248 A Totally Implantable Controller for Use With Rotary LVADs**

Lori Lucke, PhD, Minnetronix, Saint Paul, MN

**249 Development of an Implantable Compliance Chamber for a Total Artificial Heart**

Stephanie Schmitz, Dipl.-Ing, Institute of Applied Medical Engineering, Aachen Germany - ASAIOfyi Member

**RENAL POSTERS**

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

**These Posters Will Be Moderated From 5:15-6:45pm**

**ASAIOfyi Member Moderators:**

Nicholas Ferrell, PhD, Vanderbilt University, Nashville, TN

Peter Soler, University of California, Berkeley, CA

**250 Manipulating the Microenvironment of Primary Renal Tubular Epithelial Cells Alters Cell Phenotype**

Nicholas Ferrell, PhD, Vanderbilt University, Nashville, TN - ASAIOfyi Member

**251 8-Day Implantation of Silicon Nanopore Hemofilter**

Clark Kensinger, MD, Vanderbilt University Medical Center, Nashville, TN

**252 Comparison of Outflow Vein Wall Shear Stress (WSS) with the Arteriovenous Fistula Eligibility (AFE) System and Traditional Arteriovenous Fistula (AVF) Using Mock Loop In Vitro Models**

Howard Loree, PhD, Flow Forward Medical Inc, Lowell, MA

**253 Microembolies of Air are Deposited in the Lungs of Haemodialysis Patients**

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

**254 Optimizing the Shape of Hemodialysis Puncture Needles Based on Measurement of Pressure Distribution Inside the Needle**

Satomi Takahashi, Toin University of Yokohama, Yokohama, Japan - ASAIOfyi Member

**255 Obesity-associated Renal Injury: Role of Endoplasmic Reticulum Stress and the Protective Effects of Acetaminophen**

Cuifen Wang, Marshall University, Huntington, WV

**256 Acetaminophen Attenuates High Glucose-induced Oxidative Stress and Fibrogenesis in the Human Renal Mesangial Cells**

Cuifen Wang, Marshall University, Huntington, WV

**BIOENGINEERING POSTERS: Pump Development**

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

**These Posters Will Be Moderated From 5:15-6:45pm**

**ASAIOfyi Member Moderators:**

Amy Throckmorton, PhD, Drexel University, Philadelphia, PA

Katherine Fraser, PhD, Imperial College London, United Kingdom

**257 Geometric Design of Spiral Groove Bearing to Reduce Hemolysis in a Hydrodynamically Levitated Centrifugal Blood Pump**

Tomotaka Murashige, MSE, Tokyo University of Science, Tokyo, Japan

**258 Six-Year In-Vitro Reliability Results of the HeartWare HVAD® Pump**

Neil Voskoboynikov, BS, HeartWare Inc, Miami Lakes, FL

**259 MVADR Impeller Modification: Computational and Experimental Evaluation**

Mustafa Taskin, PhD, HeartWare Inc, Miami Lakes, FL

**260 Mitral Regurgitation Compromises Cardiac Function During LVAD Support**

Karen May-Newman, PhD, San Diego State University, San Diego, CA

**261 Intraventricular Flow Patterns and Stasis in the LVAD-assisted Heart**

Karen May-Newman, PhD, San Diego State University, San Diego, CA

- 262 Hemodynamic Response of the qPulse™ Algorithm with the HeartWare MVAD® Pump in an Acute Heart Failure Ovine Model**  
*Nathalie Nunez, MS, HeartWare Inc, Miami Lakes, FL*
- 263 Housing Design for Cavopulmonary Assist Device to Provide Chronic Fontan Biventricular Maintenance: a Computational Study**  
*Anna-Elodie Kerlo, Indiana University School of Medicine, Indianapolis, IN*
- 264 Assessing the Acute Thrombogenicity of Clinically-Relevant Opaque Materials**  
*Megan Jamiolkowski, PhD Candidate, University of Pittsburgh, Pittsburgh, PA - ASAIOfyi Member*

## BIOENGINEERING POSTERS: Blood Cells And Non Cardiac Organs

- 8:00am-5:00pm** - Columbia Hall  
**These Posters Will Be Moderated From 5:15-6:45pm**  
**ASAIOfyi Member Moderators:**  
*Michael Neidlin, MSc, Inst of Applied Medical Engineering, Aachen, Germany*  
*Joshua Taylor, BS, The Pennsylvania State University, University Park, PA*
- 265 Comparison of Bovine and Ovine Erythrocyte Mechanical Fragility Using the Hemolyzer**  
*Branka Lukic, MS, Penn State College of Medicine, Hershey, PA*
- 266 Blood Substitute With Vasodilatory, Antioxidant and Anti-inflammatory Properties: From Concept to Bedside'**  
*Jan-Stanley Simoni, DVM, PhD, Texas Tech University Health Sciences Center, Lubbock, TX*
- 267 Modified RBCs for Modeling Malaria Infected Erythrocytes to Test Magnetic Cell Separation Device**  
*Constance Robbins, University of Pittsburgh, Pittsburgh, PA*
- 268 Simulation of Blood Platelet Aggregation**  
*Rudolf Hellmuth, MSc, National University of Ireland Galway, Ireland*
- 269 3D-Flow Investigations In The Aortic Arch During Cardiopulmonary Bypass With Stereo-PIV**  
*Michael Neidlin, MSc, Inst of Applied Medical Engineering, Aachen, Germany - ASAIOfyi Member*
- 270 Development of Novel Treatment With an Artificial Esophageal Wall for Benign Esophageal Stricture**  
*Masayasu Aikawa, Saitama Medical University, Saitama, Japan*
- 271 Development of New Artificial Nerve: Influence of Sodium Chloride in the Scaffold**  
*Tatsuo Nakamura, MD, PhD, Kyoto University, Kyoto, Japan*

# SATURDAY, JUNE 21

## CARDIAC 5 | THE FUTURE OF LVAD TECHNOLOGY

**8:00-9:30am** - Columbia 5

Co-Chairs:

*James Kirklin, MD, University of Alabama, Birmingham, AL*

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

**8:00-8:15am**

**Pumps In Less Sick Patient Populations**

*Joseph Rogers, MD, Duke University Medical Center, Durham, NC*

**8:15-8:30am**

**The Future Of Energy Transmission In VADs**

*William Weiss, PhD, Penn State College of Medicine, Hershey, PA*

**8:30-8:45am**

**Pump Design And Approaches In VADs**

*William Cohn, MD, Texas Heart Institute, Houston, TX*

## CARDIAC ABSTRACTS

**8:45-9:00am**

**Safety Assessment Of HeartMate III LVAS, a 60 Day Chronic Bovine GLP Study**

*Kelly Walsh, MS, Thoratec Corporation, Burlington, MA*

**9:00-9:15am**

**Comparison of Intraplatelet Reactive Oxygen Species, Mitochondrial Damage and Platelet Apoptosis After HeartMate II, Jarvik 2000 and HeartWare Left Ventricular Assist Device Implantation**

*Nandan Mondal, PhD, Univ of Maryland School of Medicine, Baltimore, MD - ASAIOfyi Member*

**9:15-9:30am**

**Aortic Percutaneous Circulatory Assist Device Decreases Afterload, Improves Renal Function In Chronic HF**

*Jace Heuring, PhD, Procyron, Houston, TX*

## VAD COORDINATOR SESSION 3

### OUT OF THE BOX THINKING

**8:00-9:30am** - Embassy

Co-Chairs:

*Pamela Combs, PhD, Seton Heart Specialty Care & Transplan Center, Austin, TX*

*Michael Petty, PhD, RN, CNS, University of Minnesota Medical Center, Minneapolis, MN*

**Panel:**

**8:00-8:15am**

**Patient Selection**

*Leslie Goldstein, Seton Healthcare, Austin, TX*

**8:15-8:30am**

**Creative Solutions In DT**

*Megan Del Corral, RN, BSN, CCRN, Cincinnati Children's Hospital Medical Ctr, Cincinnati, OH - ASAIOfyi Member*

**8:30-8:50am**

**Innovations With VAD Complications**

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

**8:50-9:05am**

**D/C Planning**

*Lili Bauman, MSN, University of Minnesota Medical Center, Minneapolis, MN*

**9:05-9:20am**

**Establishing A DT Clinic**

*Rhodora Jocson, MSN, PNP, CNS, Cedars-Sinai Medical Center, Los Angeles, CA*

**9:20-9:30am**

**Q & A**

## BIOENGINEERING 5 | NEW TECHNOLOGIES – TRANSCATHETER VALVES, microVAD, STENTS, NANOMEDICINE, NEW THERAPEUTIC DEVICES

8:00-9:30am - Columbia 9 & 10

Co-Chairs:

Mark Rodefeld, MD, Indiana University School of Medicine,  
Indianapolis, IN

Zhongjun Wu, PhD, University of Maryland School of Medicine,  
Baltimore, MD

8:00-8:15am

**Bioengineering Of New Configurations Of Impella**

Scott Corbett, PhD, Abiomed Inc, Danvers, MA - ASAIOfyi Member

8:15-8:30am

**Bioengineering Consideration Of Transcatheter Heart Valves**

Wei Sun, PhD, Georgia Institute of Technology, Atlanta, GA

## BIOENGINEERING ABSTRACTS

8:30-8:45am

**Pulsatile Modulation Of Centrifugal LVAD Improves Left Ventricular Unloading And End-Organ Perfusion In Ischemic Heart Failure**

Kevin Soucy, PhD, University of Louisville, Louisville, KY - ASAIOfyi Member

8:45-9:00am

**Performance Characteristics Of A Novel Collapsible Percutaneous Heart Pump For Acute Left Ventricular Support**

Keif Fitzgerald, MBA, Thoratec Corporation, Pleasanton, CA

9:00-9:15am

**A 0-D/3-D Multiscale Multiphysics Approach To Computational Fluid Dynamics Studies Of Cardiopulmonary Bypass**

Michael Neidlin, MSc, Inst of Applied Medical Engineering, Aachen, Germany - ASAIOfyi Member - ASAIO Willem J Kolff | Don B Olsen Award Recipient

9:15-9:30am

**Hemodynamic Monitoring Of Large Animal Chronic Studies After Median Sternotomy: Experiences With Different Telemetric Physiological Devices**

Yasuhiro Fujii, MD, PhD, Okayama University, Okayama, Japan - ASAIOfyi Member

## PULMONARY 5 | ECMO: LONG TERM AND BRIDGE TO LUNG TRANSPLANT

8:00-9:30am - Columbia 11 & 12

Co-Chairs:

Christian Bermudez, MD, University of Pittsburgh Medical Center, Pittsburgh, PA

Charles Hoopes, MD, University of Kentucky, Lexington, KY

8:00-8:25am

**Long Term ECMO – The Challenge And Benefit**

Si Pham, MD, University of Maryland School of Medicine, Baltimore, MD

8:25-8:50am

**ECMO Bridge To Lung Transplant: University of Pittsburgh Experience**

Christian Bermudez, MD, UPMC Presbyterian Hospital, Pittsburgh, PA

8:50-9:15am

**ECMO Bridge To Lung Transplant: University of Kentucky Experience**

Charles Hoopes, MD, University of Kentucky, Lexington, KY

9:15-9:30am

Q&A

## RENAL 5 | EMERGING STRATEGIES IN ACUTE KIDNEY INJURY & EXTRACORPOREAL SUPPORT

8:00-9:30am - Georgetown West – Concourse Level

Co-Chairs:

Lenar Yessayan, MD, Henry Ford Hospital, Detroit, MI

Balazs Szamosfalvi, MD, Henry Ford Hospital, Detroit, MI

8:00-8:15am

**Polymixin Binding Filter For Sepsis**

Gualitero Guadagni, PhD, Spectral Diagnostics Inc, Toronto, Canada

8:15-8:30am

**Selective Cytopheretic Device Immunomodulation For AKI**

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

8:30-8:45am

**Spleen-On-A-Chip**

Joo Kang, PhD Harvard University, Cambridge, MA

8:45-9:00am

**Ultrafiltration For Advanced Heart Failure**

Sevag Demirjian, MD, Cleveland Clinic, Cleveland, OH

## RENAL ABSTRACT

9:15-9:30am

**Hemocompatibility Enhancement Of Silicon Nanopore Membranes (SNM) Using Optimized Deposition Of Thin-Film Poly (Sulfobetaine Methacrylate) (pSBMA)**

Steven Kim, MD, University of California, San Francisco, CA - ASAIOfyi Member

## PEDIATRIC 4 | ABSTRACTS

8:00-9:30am - Georgetown East – Concourse Level

Co-Chairs:

Peter Wearden, MD, PhD, University Of Pittsburgh, Pittsburgh, PA

James St. Louis, MD, University of Minnesota, Minneapolis, MN

8:00-8:15am

**Six-Day in vivo Performance Of Infant Jarvik 2000®**

**Ventricular Assist Device In A Juvenile Sheep Model**

Yang Liu, MD, PhD, Fourth Military Medical Center, Shaaxi, China

8:15-8:30am

**Pre-clinical Evaluation Of The PediaFlow® Pediatric VAD And Inflow Cannula**

Salim Olia, BS, University of Pittsburgh, Pittsburgh, PA

8:30-8:45am

**Continuous Flow Support In Children Using The HeartWare HVAD: Lessons Learned From A Single Center Experience**

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

8:45-9:00am

**Is Continous Flow Superior To Pulsatile Flow In Single Ventricle Mechanical Support? Results From A Large Animal Pilot Study**

Yasuhiro Fujii, MD, PhD, Okayama University, Okayama, Japan

9:00-9:15am

**Biventricular Continuous Flow Support In An Adolescent Female**

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

9:15-9:30am

**Anticoagulation And Hematological Measuremetns In Surgical Shams And In Animals Implanted With The Penn State Pediatric VAD**

William Weiss, PhD, Penn State College of Medicine, Hershey, PA

## Visit Exhibits & Posters – Enjoy Refreshments

9:30-10:15am

### IFAO SESSION

10:15-10:45am - Cabinet – Concourse Level

Chairman:

Kurt Dasse, PhD, President, GeNO LLC, Waltham, MA

10:15-10:25am

**JSAO – Challenge To The Next Stage Of Artificial Kidney**  
Kenichi Matsuda, MD, PhD, University of Yamanashi School of Medicine, Yamanashi, Japan

10:25-10:35am

**ESAO Highlights**  
Bernd Stegmayr, MD, PhD, Umea University, Umea, Sweden

10:35-10:45am

**IFAO Highlights**  
Takeshi Nakatani, MD, PhD, National Cerebral & CV Center, Osaka, Japan

### CARDIAC 6 | SOCIOECONOMIC ASPECTS OF MCS

10:45am-12:00pm - Columbia 5

Co-Chairs:

Robert Kormos, MD, University of Pittsburgh, Pittsburgh, PA  
John Stulak, MD, Mayo Clinic, Rochester, MD

10:45-11:00am

**Cost-Effectiveness OF MCS**  
Ana Carolina Alba, MD, PhD, Toronto General Hospital, Toronto, Canada

11:00-11:15am

**Role Of INTERMACS In Regulating MCS**  
James Kirklin, MD, University of Alabama, Birmingham, AL

### CARDIAC ABSTRACTS

11:15-11:30am

**Unplanned Hospital Readmissions After Continuous Flow Left Ventricular Assist Device Implantation**  
Ben Chung, MD, University of Chicago, Chicago, IL

11:30-11:45am

**Development Of Gastrointestinal Bleeding During Continuous Flow Left Ventricular Assist Device Support Is Associated With Lower Rates Of Cardiac Transplantation In Transplant Eligible Patients**  
Christopher Holley, MD, University of Minnesota, Minneapolis, MN

11:45-12:00pm

**Blood Product Utilization In VAD Patients At Time Of Transplant And the Effect On Post Transplant Outcomes**  
Palak Shah, MD, MS, Inova Fairfax Hospital, Falls Church, VA

### BIOENGINEERING 6 | COMPUTATIONAL ASPECTS OF DEVICES

10:45am-12:00pm -Columbia 9 & 10

Co-Chairs:

Guruprasad Giridharan, PhD, University of Louisville, Louisville, KY  
Greg Burgreen, PhD, Mississippi State University, Starkville, MS

**Debate: Computational Modeling Should Not Be Used For Device Regulation**

10:45-10:58am - Pro: Greg Burgreen, PhD, Mississippi State University, Starkville, MS

10:58-11:02am - Rebuttal

11:02-11:15am - Con: Tina Morrison, PhD, FDA, Silver Spring, MD

11:15-11:19am - Rebuttal

11:19-11:26am - Q & A

**Debate: Do We Need Physiologic VAD Control And Flow Estimation For Improved Patient Care?**

11:26-11:39am - Pro: Heinrich Schima, PhD, Medical University Vienna, Vienna, Austria

11:39-11:43am - Rebuttal

11:43-11:56am - Con: Mark Slaughter, MD, University of Louisville, Louisville, KY

11:56-12:00pm - Q & A

### PULMONARY 6 | NEW DEVICE DEVELOPMENT

10:45am-12:00pm - Columbia 11 & 12

Co-Chairs:

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

Jutta Arens, Dipl.-Ing, University of Aachen, Aachen Germany

10:45-11:00am

**Bioengineered Lung**  
Elizabeth Calle, PhD Candidate, Biomedical Engineering, Yale University, New Haven, CT

11:00-11:15am

**Development Of A Miniaturized Heart Lung Machine**  
Jutta Arens, Dr Ing, University of Aachen, Aachen, Germany

### PULMONARY ABSTRACTS

11:15-11:30am

**Efficacy Of A Parallelized Oxygenator Circuit In A Pumpless Artificial Placenta**  
Masatoshi Saito, PhD, Tohoku University Hospital, Japan

11:30-11:45am

**Investigating Effects Of Internal Pulsation On Gas Heat Exchange In An Oxygenator**  
Ralf Borchardt, Dipl.-Ing, RWTH Aachen University, Aachen, Germany - ASAIOfyi Member

11:45-12:00pm

**Particle Image Velocimetry For The Validation Of Computational Fluid Dynamic Simulations Of A Cross Layered Oxygenator**  
Peter Schlanstein, RWTH Aachen University, Aachen, Germany

### RENAL 6 | ENABLING TECHNOLOGIES FOR WEARABLE DIALYSIS AND ARTIFICIAL KIDNEY

10:45am-12:00pm - Georgetown West – Concourse Level

Co-Chairs:

Stephen Ash, MD, HemoCleanse, Lafayette, IN

William Fissell, MD, Vanderbilt University Medical Center, Nashville, TN

10:45-11:00am

**Automated Wearable Artificial Kidney: A Peritoneal Dialysis Approach**  
Martin Roberts, PhD, University of California, Los Angeles, CA

11:00-11:15am

**Ultrathin Silicon Membranes For Wearable Dialysis**  
James McGrath, PhD, University of Rochester, Rochester, NY

11:15-11:30am

**Nanomaterials To Prevent Membrane Fouling**  
Baoxia Mi, PhD, University of Maryland, College Park, MD

11:30-11:45am

**Dialysate Regeneration With Sorbent Technology**  
Stephen Ash, MD, HemoCleanse Inc, Lafayette, IN

11:45-12:00pm

**Bioartificial Kidney**  
William Fissell, MD, Vanderbilt University Medical Center, Nashville, TN



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