ASAIO 56TH ANNUAL CONFERENCE
MAY 27 - 29, 2010
BALTIMORE, MARYLAND

PROGRAM
Engineering Exceptional Results

“The value that Minnetronix provides a startup company in current economic times is exceptional. A partnership with Minnetronix means speed-to-market and effective use of capital, backed by proven design and manufacturing resources.

Their superior project management ensures timeliness and accountability, all while proposing innovative solutions with an eye toward developing and enhancing a company’s IP.”

Philip Vierling, CEO
Kalypto Medical

www.minnetronix.com  FDA REGISTERED  ISO 13485 CERTIFIED
ASAIO MISSION STATEMENT
To Advance the Research, Development and Medical Application of Bionic Technologies

ASAIO EDUCATIONAL GRANT SPONSORS

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ASAIO - 4 - PROGRAM 2010
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ASAIO JOURNAL

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ASAIO YOUNG INNOVATOR FELLOWSHIPS FIRST TIME AUTHORS

Sponsored by an Educational Grant from Lippincott Williams and Wilkins

Mickey Ising, BS – University of Louisville
“Delivering Physiologic Pulse Pressures with Continuous Flow Ventricular Assist Devices”

Yajuan Wang, MS – Carnegie Mellon University
“Optimal Identification of Need for Right Ventricular Support Using Cost-Sensitive Decision Tree”

ASAIO FELLOWSHIP RECIPIENTS
Sponsored by an Educational Grant from Levitronix

Rebecca Schewe, MS – University of Michigan
“Compliant Thoracic Artificial Lung Design Using Fluid-Structure Interaction Modeling”

Jason Nanna, BS – Penn State University
“An Improved Experimental Wall Shear Estimation within a 50cc Penn State Blood Pump”

Jaewook Nam, PhD – Rice University
“Modeling and Numerical Analysis of Platelet Activation, Adhesion and Aggregation in Artificial Organs”

Pere Ventura, BS – Intermountain Medical Center
“Outcomes with the Levitronix CentriMag as Cardiopulmonary Support (CPS) for Cardiogenic Shock”

Sonya Bhavsar, BS – Virginia Commonwealth University
“Use of External Pressure Application to Augment Fontan Hemodynamics”

Alexandre Peyser, BS – Columbia University
“Dialyzer End-Caps Revisited”
ASAIO Y NOSÉ INTERNATIONAL FELLOWSHIP

Takashi Nishimura, MD, PhD – Univ of Tokyo
“Development of Native Heart Load Control System with Continuous Flow Ventricular Assist Device for Bridge to Recovery of Failing Heart”

SPONSORED BY THE Y NOSÉ FELLOWSHIP FUND

ASAIO WILLEM J. KOLFF / DON B. OLSEN AWARD

Nobumasa Katagiri, ME – Nat’l CV Ctr Research Inst
“An Ultra-Durable Heparin-Free Pediatric and Adult ECMO Systems and Its Clinical Application in Japan”

SPONSORED BY THE MEDFORTE FOUNDATION

BARNEY CLARK AWARD

Eli Friedman, MD
Downstate Medical Center
Eli Friedman, born in Brooklyn, obtained a BS degree from Brooklyn College and his MD from the State University of New York, Downstate Medical Center. His Nephrology fellowship was at the Peter Bent Brigham Hospital with John Merrill. He returned to Downstate in 1963 as an assistant professor and established a nephrology program and one of the first dialysis units outside Seattle. He became Professor of Medicine in 1971 and in 1992 was appointed Distinguished Teaching Professor.

Eli is a distinguished teacher, researcher, speaker and author on kidney failure and many other aspects of nephrology and is renowned around the world. He was president of the ASAIO in 1987-88 and Editor of the ASAIO Journal from 1968 to 2003. He is a past president of the ISAO and of the International Society for Geriatric Nephrology and Urology and has received many prestigious honors and awards. He has always been an advocate for patients and set up the first patient organization in the United States, now called the American Association of Kidney Patients.

ACCREDITATION CME/CCP/CNE

CME 19.5 AMA PRA CATEGORY 1 CREDITS™ - PHYSICIANS
This activity has been planned and implemented in accordance with the essential areas and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint sponsorship of the University of Massachusetts Medical School Office of Continuing Medical Education (UMMS-OCME) and ASAIO. The UMMS-OCME is accredited by the ACCME to provide continuing medical education for physicians.

The University of Massachusetts Medical School designates this educational activity for a maximum of 19.5 AMA PRA Category 1 Credits™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Accreditation for the ASAIO Program
THURSDAY, MAY 27 7.5 Contact Hours
FRIDAY, MAY 28 7.5 Contact Hours
SATURDAY, MAY 29 4.5 Contact Hours

Accreditation for the Intensive Dialysis Day Program
FRIDAY, MAY 28 16 Contact Hours

CEU 23.4 CREDIT HOURS - NURSES
Accreditation for the ASAIO Program
THURSDAY, MAY 27 9.0 Contact Hours
FRIDAY, MAY 28 9.0 Contact Hours
SATURDAY, MAY 29 5.4 Contact Hours

Accreditation for the Intensive Dialysis Day Program
FRIDAY, MAY 28 19.2 Contact Hours

CCP 23.1 CATEGORY 1 CEU’S - PERFUSIONIST
The American Board of Cardiovascular Perfusion will allot the following Category 1 CEU’s to those Perfusionist who attend the ASAIO Annual Conference as follows:
WEDNESDAY, MAY 26 2.4 Contact Hours
THURSDAY, MAY 27 8.4 Contact Hours
FRIDAY, MAY 28 8.7 Contact Hours
SATURDAY, MAY 29 3.6 Contact Hours

Perfusionists must sign in once a day at the ASAIO Registration Desk to verify attendance.
A photo ID is required for participation to obtain registration materials.
EXHIBIT PRODUCT DESCRIPTIONS

CINCINNATI SUB-ZERO
BOOTH 303
CINCINNATI, OHIO
Cincinnati Sub-Zero has been delivering patient temperature management systems to healthcare professionals since 1963; we design with the patient in mind. Our complete line of products include therapeutic heating and cooling therapy units along with a complete line of warming and cooling blankets for body temperature regulation and hyper-hypothermia treatment.

HEARTWARE, INC
BOOTH 103
FRAMINGHAM, MASSACHUSETTS
HeartWare, Inc. is developing a family of implantable mechanical circulatory support systems for the treatment of advanced heart failure. Through a cadence of progressively smaller devices implanted using less invasive techniques, HeartWare expects to treat an increasing proportion of heart failure patients and to access them at an earlier stage of their disease progression. 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 has CE-Mark approval and is currently the subject of a 150-patient US IDE clinical trial.

JARVIK HEART INC
BOOTH 301
NEW YORK, NEW YORK
Jarvik Heart, Inc is a privately held, New York based company that develops and manufactures miniaturized heart assist devices for the treatment of severe heart failure. The Jarvik 2000 is a battery-powered axial-flow left ventricular assist device (LVAD). It is the smallest implantable blood pump available for the long-term treatment of Heart Failure.

LEVITRONIX
BOOTH 302
WALTHAM, MASSACHUSETTS
Levitronix designed, developed, and produces the CentriMag, PediMag and PediVAS circulatory support devices. In the United States, the CentriMag pump is approved for up to 30 days of use for patients requiring right ventricular support, and is undergoing clinical trials to treat patients in cardiogenic shock as a bridge to decision. The PediVAS is optimized to provide circulatory support for neonatal and pediatric patients, and is currently only available outside the United States. The PediMag pump is available in the United States for use in a cardiopulmonary circuit for up to 6 hours. CentriMag and PediVAS systems are both CE Mark approved for use for up to 30 days for use as a VAD or for ECMO.

INTERNATIONAL CENTER FOR ARTIFICIAL ORGANS AND TRANSPLANTATION
BOOTH 204
PAINESVILLE, OHIO
The International Center for Artificial Organs and 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.
LIPPINCOTT WILLIAMS & WILKINS – WOLTERS KLUWER HEALTH

BOOTH 203
PHILADELPHIA, PENNSYLVANIA

Lippincott Williams & Wilkins, a Wolters Kluwer Health company is a leading international publisher of medical books, journals, and electronic media. We proudly offer specialized publications and software for physicians, nurses, students and clinicians. Please visit our booth to browse our comprehensive product line.

MINNTECH TTG

BOOTH 201
MINNEAPOLIS, MINNESOTA

Minntech Corp, a Cantel Medical Corp company, was founded in 1974 in Minneapolis. Minntech Corp is a leader in developing, manufacturing, and marketing medical devices, electronics, sterilants, and water purification products. Some of the medical applications currently being supplied to partner companies are hemofiltration, hemoconcentration, immunomodulator removal, encapsulated cell technology, biopharmaceutical research, and bioartificial organs. The Therapeutic Technologies Group within Minntech Corp is ready to provide regulatory and marketing support to partner companies, as well as to provide assistance in:

- Research and development
- Product design
- Packaging
- Product validation

SYNCARDIA SYSTEMS INC

BOOTH 102
TUCSON, ARIZONA

The SynCardia temporary Total Artificial Heart (TAH-t) is the only FDA, Health Canada and CE approved device that provides circulatory restoration in morbidly ill patients with irreversible bi-ventricular failure, providing a life-saving bridge until a donor human heart becomes available. In 2006, the EXCOR® TAH-t mobile driver was granted a CE mark, enabling European hospitals to discharge stable TAH-t patients to return home while they are awaiting a transplant. Visit our booth for updates on upcoming clinical studies for the Freedom™ driver, the 50cc TAH-t, and the pediatric VAD.

THORATEC CORPORATION

BOOTH 202
PLEASONTON, CALIFORNIA

With more than 14,000 patient implants and three decades of experience, Thoratec® Corporation offers the broadest portfolio of mechanical circulatory support devices. Thoratec’s product line includes the CentriMag®, Acute Circulatory Support Device, HeartMate® LVAS, Thoratec PVAD™ and IVAD™. Now the HeartMate II® is FDA approved for both Bridge to Transplantation and Destination Therapy.

SPECIAL INTERACTIVE EXHIBIT
FRIDAY, MAY 28TH
1:30PM – 5:00PM

Demonstrating the Preparation and Management During Transport of a Critically Ill Patient Who is Being Sent to a Tertiary Care Facility for a Highly Technical Procedure. In addition, Attendees Can See How Well They Perform Resuscitation-Related Procedures

Richard Aghababian, MD - Assoc Dean CME, Univ of Massachusetts Medical School
**James DuCanto, MD - Asst Clinical Prof Liver Transplant Anesthesia, Aurora St Luke’s Medical Ctr
Jorge Yarzebski, NREMT-P - Emergency Med Prg Coordinator, Univ of Massachusetts
## PROGRAM OUTLINE

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<tr>
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<tr>
<td>8:00am – 5:00pm</td>
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### FRIDAY, MAY 28, 2010

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<td>1:30pm – 3:00pm</td>
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BELDING H SCRIBNER, MD
50TH ANNIVERSARY

In March 1960, Belding Scribner, head of the Division of Nephrology at the University of Washington’s Medical School and Wayne Quinton, head of the University Hospital’s Instrument Shop, developed the Teflon Shunt that for the first time made long term Hemodialysis for chronic renal failure possible. The first patient, Clyde Shields, had a shunt implanted on March 9, 1960 by David Dillard, a pediatric cardiac surgeon, and went on to live for 11 years on Hemodialysis. The first Reports on this were published in the 1960 Transactions of ASAIO. Some later developments by Scribner and his colleagues included the world’s first out-of-hospital dialysis center, the use of proportioning pumps to prepare dialysate, home hemodialysis, home peritoneal dialysis, the Tenckhoff catheter, the square meter-hour and middle-molecule hypotheses, and the Hickman catheter. Throughout the 1960’s and the early 1970’s, Seattle was the Mecca for those interested in chronic dialysis. As Scribner said later the successful treatment of Clyde Shields represents “one of the few instances in medicine where a single success was all that was required to validate a new therapy.” From that one patient there are now many more than a million and a half people throughout the world alive today wither on dialysis or with a kidney transplant.
Learn How Nanotechnology is Impacting Medicine and Engineering

The *Journal of Nanotechnology in Engineering and Medicine* focuses on how nanotechnology is impacting medicine and what the potential is for its future in all fields of science, engineering and clinical arenas, including:

- Cardiology
- Neurology and neurosurgery
- Oncology
- Diabetes
- Metabolic Disorders

Learn the most important developments of clinicians, engineers and scientists on new nanomedical technologies.

You get the latest in electronic organic sensors and nano and micro-engineering as they apply to monitoring and control of various human diseases and disorders.

Submit a paper for publication or browse the current issue of the *Journal of Nanotechnology in Engineering and Medicine* (table of contents and abstracts) on the ASME Digital Library:

www.asmedl.org/NANO
8:00am - 8:30am
RAPID FIRE FLASH PRESENTATIONS

Five Abstracts have been selected for presentation in the New Rapid Fire format. Authors will have five minutes to present up to three slides. Please direct all questions to the speaker at their poster board in the Exhibit Hall.

Hemolysis Rate after Biventricular Centrifugal Ventricular Assist Device Implantation: Preliminary Data of Clinical Study
**Alexander Stepanenko, MD - Deutsches Herzzentrum Berlin

Clinical Predictors for Long Hospital Stay after Left Ventricular Assist Device (LVAD) Implantation
**Ian Ledford - Intermountain Medical Ctr

Gas Exchange Performance of a Silicon Nanoporous Membrane on a Liquid-Gas System
**Fernando Casas, PhD - Cleveland Clinic

Different Flow Conditions Do Not Adversely Affect Integrity and Activation of the Endothelial Surface of a Novel Artificial Gas Exchange Membrane
**Bettina Wiegmann, MD - Hannover Medical School

Two-Pool Physical Simulator of the Inter-Compartmental Mass Transfer during Dialysis
**Giustina Casagrande, PhD - Politecnico di Milano

8:30am - 12:15pm
GENERAL SESSION 1 - THURSDAY

"Opportunities for Innovation in the Face of Healthcare Reform"
Room: Key Ballroom 8, 11, 12 - Level 2
Chairmen: William Holman, MD & Kurt Dasse, PhD

8:30am - 9:30am
SYMPOSIUM

IT / Bioinformatics / Healthcare
John Giobbi - President & CEO, Proxense LLC
Ryan Gallivan, MD - Medical Advisor Otolaryngology, Proxense LLC

9:30am - 10:00am
KEYNOTE ADDRESS

The Future Impact of Healthcare Reform in the United States and the Regulatory Climate on Medical Device Innovation
Roger Evans, PhD - CEO, Transplant Professionals LLC

10:00am - 10:45am
VISIT EXHIBITS & POSTERS - ENJOY REFRESHMENTS
Exhibit Area: Key Ballroom 6 - Level 2

10:45am - 11:45am
SYMPOSIUM

International Perspectives on Healthcare Reform
Changes in Healthcare Reform in Europe
Emma Birks, MRCP, PhD - Prof Medicine, Univ of Louisville

Changes in Healthcare Reform in Asia
**Takeshi Nakatani, MD, PhD - Dir Organ Transplantation, Nat'l Cardiovascular Ctr

11:45am - 12:15pm
ASAIO Y NOSÉ INTERNATIONAL FELLOWSHIP PRESENTATION

**Takashi Nishimura, MD, PhD - Univ of Tokyo

12:15pm - 1:15pm
WORKING LUNCHEON - Admission by Ticket
Room: Tubman A, B - Level 3

Sponsored by EvaHeart Medical Inc.
Decreasing Complications with VAD Support - Role of Physician & Industry
**Ranjit John, MD - Asst Prof Surgery, Univ of Minnesota

1:30pm - 5:15pm
CARDIAC TRACK

1:30pm - 3:00pm
CARDIAC SLIDE SESSION 1
Short Term Circulatory Support
Room: Key Ballroom 9 - Level 2
Moderators: Ranjit John, MD & Jeffrey Morgan, MD

1:30pm Use of the Levitronix Left Ventricular Assist Device for Treating Postcardiotomy Cardiogenic Shock
Mehmet Akay - Texas Heart Inst

1:45pm Outcomes with the Levitronix CentriMag as Cardiopulmonary Support (CPS) for Cardiogenic Shock
**Pere Ventura, BS - Intermountain Medical Ctr

2:00pm CentriMag-ECMO in Management of Acute Heart Failure Syndrome and Beyond
**Aly El Banayosy, MD - Penn State Univ

2:15pm Recovery: To Explant or Not To Explant
Joshua Baker, MD - Massachusetts General Hospital

2:30pm Comparison of Circulatory Support with IABP and Impella 2.5LP
Stephanie Schampaert, BS - Eindhoven Univ of Technology

2:45pm Remote Cannulation for CentriMag Right Ventricular Support To Reduce In Hospital Morbidity
Matthew Schiralli, MD - Univ of Rochester
1:30pm - 3:00pm
CARDIAC INVITED SPEAKERS 1
Room: Key Ballroom 10 - Level 2
Moderators: Egemen Tuzun, MD & Peter Wearden, MD, PhD

1:30pm - 2:00pm
SYMPOSIUM

Next Trial for REVIVE - IT

The Need and the Challenge
Leslie Miller, MD - Walters Chair CV Medicine, Georgetown Univ Hospital

REVIVE - IT Trial Update
**Timothy Baldwin, PhD - Prog Dir NHLBI, NIH

2:00pm - 2:30pm
DEBATE

Control Based on Venous Return - Is It Enough?
**Robert Benkowski, BSME - COO, MicroMed Cardiovascular Inc
**Heinrich Schima, PhD - Prof Physics & Biomed Eng, Medical Univ Vienna

2:30pm - 3:00pm
FDA’s Role & Position on the Harmonization By Doing Initiative
**Eric Chen, MS - Biomedical Engineer, FDA

3:00pm - 3:45pm
VISIT EXHIBITS & POSTERS - ENJOY REFRESHMENTS
Exhibit Area: Key Ballroom 6 - Level 2

3:45pm - 5:15pm
CONTINUOUS FLOW PUMPS - TECHNICAL CONSIDERATION

CARDIAC SLIDE SESSION 2
Room: Key Ballroom 9 - Level 2
Moderators: Greg Burgreen, PhD & Roberta Bogaev, MD

3:45pm Algorithm for HeartMate II LVAD Speed Adjustments in the Perioperative Period
Joshua Baker, MD - Massachusetts General Hospital

4:00pm Fluidic Performance Via Intrinsic Parameters of a Magnetically Levitated Axial Flow VAD
Mark Olles, PhD - Rochester Inst of Technology

4:15pm Methodology of Hemolysis Testing of Mechanical Circulatory Support Devices
**Michael Sabieski, RN, CCP - Univ of Louisville

4:30pm Study on Improvement of Performance of Axial Flow Pump by Improving the Motor
Shin Furukawa, MS - Tokyo Denki Univ

4:45pm In Vitro Hemolysis Study in a Nonpulsatile Implantable VAD: The Effect of Head Pressure and Flow
**Branka Lukic, MS - Penn State Univ

5:00pm Evaluation of Ventricular Relaxation during Mechanical Cardiac Assist with Rotary Blood Pumps
**Francesco Moscato, PhD - Medical Univ of Vienna

3:45pm - 5:15pm
CARDIAC INVITED SPEAKERS 2
Room: Key Ballroom 10 - Level 2
Moderators: David Farrar, PhD & Edwin McGee, MD

3:45pm - 4:15pm
Proteomics to Study Cardiac Remodeling
Giulio Agnetti, PhD - Postdoctoral Research Fellow, John Hopkins Univ

4:15pm - 4:45pm
Do You Like Your LVAD With or Without Warfarin?
New VAD Design to Avoid Systemic Anticoagulation
**Egemen Tuzun, MD - Asst Dir CV Surgery Research Labs, Texas Heart Inst

8:00am - 5:00pm
CARDIAC POSTER SESSION 1
Room: Exhibit Area - Key Ballroom 6 - Level 2
Posters Available All Day

Board #

1 Newly Developed Mini-Axial Flow Pump: Apex Pump
**Guorong Li, MD - Fu Wai Hospital

2 Hemolysis Rate after Biventricular Centrifugal Ventricular Assist Device Implantation: Preliminary Data of Clinical Study
**Alexander Stepanenko, MD - Deutsches Herzzentrum Berlin

3 Biventricular Mechanical Support with Two Implantable Assist Devices
Thomas Krabatsch, MD, PhD - German Heart Inst

4 Clinical Predictors for Long Hospital Stay after Left Ventricular Assist Device (LVAD) Implantation
**Ian Ledford - Intermountain Medical Ctr

5 Causes of Mortality in Stable Destination Therapy Patients
**Douglas Horstmanshof, MD - Integris Advanced Cardiac Care

6 In Vivo Biocompatibility Evaluation of a New Surfactant Polymer Coating Mimicking the Glycocalyx of Endothelial Cells
Akira Shiose, MD, PhD - Cleveland Clinic
Stability of Unloading-Induced Cardiac Improvement in Patients with Chronic Non-Ischemic Cardiomyopathy: Predictive Value for Transplant-Free Outcome after Ventricular Assist Device Explantation
Michael Dandel, MD, PhD - Deutsches Herzzentrum Berlin

Development of the Implantable Axial Flow Pump LVAD with the Hydrodynamic Bearings
**Tomonori Tsukiya, PhD - Nat'l Cardiovascular Research Ctr

Low Rate of Thromboembolism with the INCOR Ventricular Assist Device: Design Changes and Initial Clinical Results
**Andreas Arndt, PhD - Berlin Heart GmbH

Pre-Clinical Evaluation of MITIHEART® LVAD
Andrew Hunsberger, MS - MiTiHeart Corporation

A Novel Counterpulsation Drive Mode in a Continuous-Flow Left Ventricular Assist Device - Effect on Coronary Circulation
Masahiko Ando, MD - Nat'l Cardiovascular Research Ctr

Left Ventricular Assist for Pediatric Patients
Masahide Komagamine, MD - Tokyo Women's Medical Univ

Left Ventricular Mechanical Support with the Impella Afford More Recovery Potential in Failing Hearts Than Extracorporeal Membrane Oxygenation
Dai Kawashima, MD - Univ of Tokyo

The Effect of Continuous Flow Left Ventricular Assist Devices (CF-LVAD) on Aortic Valve Competence
**Jerson Martina, MSc - Univ Medical Ctr Utrecht

Adult Candidates for Heart Transplantation with Larger Body Surface Area Profit More from Mechanical Circulatory Support
**Takeshi Komoda, MD, PhD - Deutsches Herzzentrum Berlin

Does Ejection Fraction Predict Response to Biventricular Pacing after Cardiac Surgery?
**Michelle Spotnitz, MD - UMDNJ - Robert Wood Johnson

Driveline Infection and Bacteremia in Continuous-Flow LVAD Patients Increases Duration of LVAD Support
Forum Kamdar, MD - Univ of Minnesota

Reduction in Device-Related Infections with the HeartMate II Left Ventricular Assist Device
**Jeffrey Morgan, MD - Henry Ford Hospital

Development of a Novel Skin Penetrating Pad for Preventing the Exit Site Infection of VAD Driveline
Toshihide Mizuno, DVM, PhD - Nat'l Cardiovascular Research Ctr

Pump Flow Estimation in cf-LVAD Patients Requires Dynamic Pump Models
Marcel Rutten, PhD - Eindhoven Univ of Technology

Renal Dysfunction in Patients Receiving Continuous-Flow Left Ventricular Assist Devices Adversely Affects Survival
Forum Kamdar, MD - Univ of Minnesota

Self-Expanding Venous Cannulae for Pediatric CPB
Saad Abdel-Sayed, PhD - Univ Hospital CHUV

Turbulence Modeling as a Source of Error in FDA's "Critical Path" Interlaboratory Computational Study of Flow in a Nozzle Model
Sandy Stewart, PhD - FDA

An Ovine Model of Postinfarction Remodeling
Bart Meyns, MD, PhD - Univ Hospitals Leuven

Management of Patent Foramen Ovale during HeartMate LVAD Placement
**Walter Dembiksky, MD - Sharp Memorial Hospital

Novel Combined Maglev Actuator for the BiVACOR
**Toru Masuzawa, PhD - Ibaraki Univ

Differences in Regional Myocardial Perfusion, Metabolism, MVO2 and Edema after 12 Hour Coronary Sinus Machine Perfusion Preservation of Canine Hearts
Michael Cobert, MS - Univ of Texas Southwestern

Sensorless Fuzzy Logic Control of a Rotary VAD: In Vivo Performance
**Fernando Casas, PhD - Cleveland Clinic

HeartMate II LVAD Support in Patients with Mechanical Mitral Valves
Mehmet Akay - Texas Heart Inst

Comprehensive Fluid Dynamic Assessment of a Bileaflet Mitral Bioprosthesis
Jonathan Hill - Univ of South Carolina

1:30pm - 4:45pm
BIOENGINEERING TRACK

1:30pm - 2:30pm
BIOENGINEERING SLIDE SESSION 1

Neural & Auditory Bioengineering
Room: Holiday Ballroom 1 - Level 2
Moderators: Steven Koenig, PhD & Antonio Ferreira, PhD

Development of a New Antithrombogenic Cerebral Stent Using Ion Beam Surface Modification - A Five Year Animal Study
**Yochi Sugita, MD - Baylor College of Medicine
1:45pm A Novel Neurovascular Stent Covered in Stretchable Thin Film NiTi Significantly Decreases Flow into a Wide-Neck Aneurysm In Vitro
**Youngjae Chun, PhD - UCLA

2:00pm Liposome-Encapsulated Hemoglobin Alleviates Hearing Loss after Transient Cochlear Ischemia and Reperfusion
**Akira Kawaguchi, MD, PhD - Tokai Univ

2:15pm Brain Based Electrospun Tissue Scaffolds: A Parametric Study
**Kevin Aroom, MS - Univ of Texas

1:30pm - 2:30pm BIOENGINEERING INVITED SPEAKERS 1
Room: Holiday Ballroom 2 - Level 2
Moderators: James Antaki, PhD & Roshni Patel, MS

1:30pm - 2:30pm Conclusions Drawn at the “First International ECMO Conference” Jointly Sponsored by ASAIO & Penn State Hershey

2:30pm - 3:00pm Artificial Muscles
Mohsen Shahinpoor, PhD - Richard C Hill Prof & Chair Mech Eng, UMaine

3:00pm - 3:45pm VISIT EXHIBITS & POSTERS - ENJOY REFRESHMENTS
Exhibit Area: Key Ballroom 6 - Level 2

3:45pm - 5:15pm BIOENGINEERING SLIDE SESSION 2
Blood Substitutes & Pediatric Cardiopulmonary Bypass
Room: Holiday Ballroom 1 - Level 2
Moderators: Conrad Zapanta, PhD & Keefe Manning, PhD

3:45pm Hemotech-Blood Substitute Role in the Prevention of Platelet Activation in Percutaneous Coronary Intervention (PCI) Patients
**Jan-Stanley Simoni, DVM, PhD - Texas Tech Univ

4:00pm Delaying Blood Transfusion during Extreme Anemia with Perfluorocarbon Emulsion
**Pedro Cabrales, PhD - Univ of California

4:15pm In Vitro Observations of the Fluid Mechanics inside the Penn State PVAD Using Blood Analogs of Varying Hematocrits
**Breigh Roszelle, BS - Penn State Univ

4:30pm Left Ventricular Mechanoenergetic Cost of Blood and Plasma Viscosity during Hemodilution
**Pedro Cabrales, PhD - Univ of California

4:45pm Effect of Liposome-Encapsulated Hemoglobin on Antigen-Presenting Activity
**Akira Kawaguchi, MD, PhD - Tokai Univ

5:00pm Preliminary Experimental Validation of a Pressure-Regulated Volume-Controlled Liquid Ventilation Mode
**Raymond Robert, PhD, MSc - Univ de Sherbrooke

3:45pm - 4:45pm BIOENGINEERING INVITED SPEAKERS 2
Room: Holiday Ballroom 2 - Level 2
Moderators: Kenneth Solen, PhD & Mickey Ising, BS

3:45pm - 4:15pm Translational Biomedical Engineering for Artificial Organ Research & Development
Bastian de Mol, MD, PhD - Prof CT Biomechanics, Academic Medical Center

4:15pm - 4:45pm Bioengineering Challenges In Engineered Tissue Valves
Michael Sacks, PhD - John A Swanson Chair Bioeng, Univ of Pittsburgh

8:00am - 5:00pm BIOENGINEERING POSTER SESSION 1
Artificial Organ & Blood Substitute Development
Room: Exhibit Area - Key Ballroom 6 - Level 2
Posters Available All Day

31 Pre-Transplant Kidney-Specific Treatment To Eliminate the Need for Systemic Immunosuppression
** Lauren Brasile, PhD - Breonics

32 Apparatus for Measuring the Effect of Apical Torsion on Functioning Isolated Hearts
Dennis Trumble, MS - Carnegie Mellon Univ

33 Development of a Highly Efficient Non-Viral Vector for Cardiac Gene Therapy
Zhou Min, MD, PhD - Nat’l Cardiovascular Research Inst

34 Novel Percutaneous Implant Model for Pre-Clinical Testing
**Kelly Chapman, BSME - IncuMed Research Organization

35 Different Flow Conditions Do Not Adversely Affect Integrity and Activation of the Endothelial Surface of a Novel Artificial Gas Exchange Membrane
**Bettina Wiegmann, MD - Hannover Medical School

36 VA ECMO Setting Optimization in Patients Suffering from Cardiogenic Shock
**David Macku, MD, MSc - Czech Technical Univ

37 Molecular Surgery for the Treatment of Malignant Tumors
**Kazuhide Ohta, DVM, PhD - Baylor College of Medicine
Liver Regeneration by Portal Cell Therapy: Transplanted Human Cord Blood Derived Unrestricted Somatic Stem Cells Generate Hepatocyte-Like Cells through Transdifferentiation but Not Cell Fusion
Alireza Ghodsizad, MD - Univ of Heidelberg

Two-Pool Physical Simulator of the Inter-Compartmental Mass Transfer during Dialysis
**Giustina Casagrande, PhD - Politecnico di Milano

Plasmapheresis through a Microfabricated Silicon Nanofilter
**Edward Leonard, PhD - Columbia Univ

Regulated Delivery of IGF-1 Using Localizable Microencapsulated Genetically Modified Cells
**Roshni Patel, MS - Brown Univ

Expanding Capsule for Diet Control
**Tomoyuki Yambe, MD, PhD - Tohoku Univ

Surgical Correction of Ptosis by Ionic Polyacrylonitrile Artificial Muscles
Mohsen Shahinpour, PhD - Univ of Maine

Sustained Release Nitric Oxide from Long Lived Circulating Nanoparticles
**Pedro Cabrales, PhD - Univ of California

Drinking Mechanism for an Artificial Esophagus and Super Stent System
**Tomoyuki Yambe, MD, PhD - Tohoku Univ

Effects of Storage Time and ABO Group on Male and Female Donor Red Blood Cell Suspension Viscoelasticity
**Amanda Daly, BS - Univ of Pittsburgh

Study of the Influence of Lecithin Concentration on the Stability of Perfluoroctyl Bromide Emulsions
Camila Castro, MSc - Univ de Los Andes

1:30pm - 5:05pm
INTERNATIONAL SOCIETY FOR APHERESIS SESSION

Apheresis Therapy I
Room: Holiday Ballroom 3 - Level 2
Moderators: Andre Kaplan, MD & Patrick Moriarty, MD

1:30pm - 1:50pm
Selective Apheresis Technologies - Current Status and Future Perspectives
Wolfgang Ramlow, MD - Medical Director, Clinic for Neph, Dialysis & Apheresis

1:50pm - 2:10pm
Apheresis Therapy in Immune-Mediated Vasculitidies
**Andre Kaplan, MD - Prof Medicine, University of Connecticut Health Ctr

2:10pm - 2:30pm
Apheresis Therapy in Solid Organ Transplantation
Jan Kielstein, MD, PhD - Asst Prof Medicine, Medical School Hannover

2:30pm - 2:50pm
Current Status of Apheresis Therapy in Sepsis and Liver Failure
**Dieter Falkenhagen, MD, PhD - Head Clinical Med & Biotech, Danube Univ at Krems

3:00pm - 3:45pm
VISIT EXHIBITS & POSTERS - ENJOY REFRESHMENTS
Exhibit Area: Key Ballroom 6 - Level 2

Apheresis Therapy II
Moderators: Paul Malchesky, D Eng & Wolfgang Eamlow, MD

3:45pm - 4:05pm
Adsorptive Cytapheresis - An Effective Treatment Option in Inflammatory Bowel Diseases
Ken Fukunaga, MD, PhD - Asst Prof Medicine, Hyogo College of Medicine

4:05pm - 4:25pm
Apheresis Therapy in Neurological Diseases - Current Status and Future Perspectives
Chang-Sung Koh, MD, PhD - Prof Medicine, Shinshu University

4:25pm - 4:45pm
Immunoadsorption in Idiopathic Dilated Cardiomyopathy
Lars Herda, MD - Univ Greifswald

4:45pm - 5:05pm
Rheological Effects of Lipid Apheresis
Patrick Moriarty, MD - Clinical Pharmacology, Univ of Kansas

1:30pm - 5:15pm
PULMONARY TRACK

1:30pm - 3:00pm
PULMONARY LECTURE & SLIDE SESSION 1
Room: Key Ballroom 7 - Level 2
Moderators: Joseph Zwischenberger, MD & Jonathan Haft, MD
Sponsored by MC3 Inc.

1:30pm - 2:00pm
Using ECMO as an Ambulatory Bridge to Lung Transplantation
Bartley Griffith, MD - Prof & Chief Cardiac Surgery, Univ of Maryland

2:00pm ECMM in Patients with Shock, Predictors of Survival
David Spurlock, MD - Univ of Michigan

2:15pm Retrospective Analysis of Venovenous Versus Venoarterial Extracorporeal Membrane Oxygenation for Treatment of Post Lung Transplantation Primary Graft Failure
**Matthew Bacchetta, MD - Columbia Univ
<table>
<thead>
<tr>
<th>Time</th>
<th>Session/Activity</th>
<th>Presenter/Institution</th>
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<tbody>
<tr>
<td>2:30pm</td>
<td>Transfusion Requirements with a New Miniaturized System for Extracorporeal Membrane Oxygenation (ECMO) in Adult Respiratory Failure</td>
<td>Daniele Camboni, MD - Univ Hospital Regensburg</td>
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<tr>
<td>2:45pm</td>
<td>An Ultra-Durable Heparin-Free Pediatric and Adult ECMO Systems and Its Clinical Application in Japan</td>
<td>**Nobumasa Katagiri, ME - Nat'l Cardiovascular Ctr Research Inst</td>
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<td>ASAIO Willem J Kolff - Don B Olsen Award Recipient</td>
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<td>3:00pm</td>
<td>VISIT EXHIBITS &amp; POSTERS - ENJOY REFRESHMENTS</td>
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<td>Exhibit Area: Key Ballroom 6 - Level 2</td>
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<td>3:45pm</td>
<td>PULMONARY SLIDE SESSION 2</td>
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<td>Room: Key Ballroom 7 - Level 2</td>
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<td>Moderators: Michael Sobieski, RN, CCP &amp; Keith Cook, PhD</td>
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<tr>
<td>3:45pm</td>
<td>Extracorporeal Life Support as Rescue Therapy Following Sudden Cardiac Arrest Death</td>
<td>Pasquale Totaro, MD, PhD - IRCCS Foundation S Matteo</td>
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<tr>
<td>4:00pm</td>
<td>Percutaneous Cardiopulmonary Support Using Emergency Bypass System: Clinical Portfolio from Single Center Experience of 103 Cases</td>
<td>**Cheong Lim, MD, PhD - Seoul National Univ</td>
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<td>4:15pm</td>
<td>Safe Transport of Critically Ill Patients on Extracorporeal Membrane Oxygenation Support</td>
<td>**Matthew Bacchetta, MD - Columbia Univ</td>
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<tr>
<td>4:30pm</td>
<td>Efficacy of Extracorporeal CO2 Removal with the Hemolung: Results in Animals</td>
<td>**Peter Wearden, MD, PhD - Children's Hospital of Pittsburgh</td>
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<tr>
<td>4:45pm</td>
<td>Extracorporeal Support in Non-Heparinized Donors after Cardiac (DCD)</td>
<td>**Alvaro Rojas, MD - Univ of Michigan</td>
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<tr>
<td>5:00pm</td>
<td>A Microfluidic Respiratory Assist Device with High Gas Permeability for Artificial Lung Applications</td>
<td>Jeffrey Borenstein, PhD - Draper Laboratory</td>
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<td>8:00am</td>
<td>PULMONARY POSTER SESSION 1</td>
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<td>Room: Exhibit Area - Key Ballroom 6 - Level 2</td>
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<td>Posters Available All Day</td>
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<td>Board #</td>
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<tr>
<td>48</td>
<td>Effects of the Molecular Mass of Tense-State Polymerized Bovine Hemoglobin on Blood Pressure and Vasconstriction</td>
<td>**Pedro Cabrales, PhD - Univ of California</td>
</tr>
<tr>
<td>49</td>
<td>Gas Exchange Performance of a Silicon Nanoporous Membrane on a Liquid-Gas System</td>
<td>**Fernando Casas, PhD - Cleveland Clinic</td>
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<tr>
<td>50</td>
<td>Transesophageal Echo Guidance Facilitates Percutaneous Placement of the Avalon Elite™ Cannula for ECMO</td>
<td>**Mark Bonnell, MD - Univ of Kentucky</td>
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<tr>
<td>51</td>
<td>Mathematical Model of an Extra-Corporal Support System</td>
<td>Alejandro Mendoza Garcia - Technical Universita Munchen</td>
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<tr>
<td>52</td>
<td>A New Venovenous Perfusion-Induced Systemic Hyperthermia Circuit for Advanced Lung Cancer Therapy</td>
<td>**Chery Craft, PhD - Univ of Kentucky</td>
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<td>53</td>
<td>Silicone Hollow Sphere Fibers (SHSF): A New Concept for Capillary Membrane Oxygenators (CMO)</td>
<td>Khasrow Mottaghy - RWTH Aachen Univ</td>
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<td>54</td>
<td>Computational Evaluation of the Pediatric Scaled Pump-Lung (PediPL) Device</td>
<td>**Mustafa Ertan Taskin, PhD - Univ of Maryland</td>
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<tr>
<td>55</td>
<td>Structural Analysis for Constructing a Balloon Type Extracorporeal Membrane Oxygenator Using CFD Analysis</td>
<td>**Young Ran Park, MS - Chonbuk National Univ</td>
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<tr>
<td>56</td>
<td>Impedance and Right Ventricular Function in the Hypertensive Pulmonary System</td>
<td>Begum Akay, MD - Univ of Michigan</td>
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<td>57</td>
<td>Novel Bridge to Lung Transplantation in Pulmonary Hypertension Using Atrial Septostomy and Veno-Venous Extracorporeal Life Support</td>
<td>Peter Sassalos, MD - Univ of Michigan</td>
</tr>
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<td>58</td>
<td>Converting the Redy 2000 Dialysis Machine to an Artificial Gills Machine That Delivers Dissolved Oxygen in Aquatic Phase</td>
<td>**Mohamed Elnachef, MD - SIOF Institute</td>
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<td>5:30pm</td>
<td>ASAIO WELCOME RECEPTION - ADMISSION BY TICKET</td>
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<td>Room: Key Ballroom South Foyer - Level 2</td>
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INTENSIVE DIALYSIS DAY

8:00am - 10:00am
RENAL GENERAL SESSION - FRIDAY

"Intensive Outpatient Dialysis, Long and Short"
Room: Holiday Ballroom 3 - Level 2
Chairman: William Fissell, MD

8:00am - 9:00am
Improving Outcomes Through Intensive Hemodialysis
Philip McFarlane, MD - Medical Dir Nephrology, Univ of Toronto

9:00am - 10:00am
Home Hemodialysis and Short Daily Hemodialysis
**Christopher Blagg, MD - Executive Director, Northwest Kidney Centers

10:00am - 10:45am
VISIT EXHIBITS & POSTERS - ENJOY REFRESHMENTS
Exhibit Area: Key Ballroom 6 - Level 2

10:45am - 12:00pm
CIRCULATE AND VISIT EXHIBITS & POSTERS

12:15pm - 1:15pm
RENAL WORKING LUNCHEON - Admission by ticket
A Nurse Manager's Perspective on Intensive Maintenance Hemodialysis
Room: Johnson A, B - Lobby Level
Sponsored by Fresenius Medicare Care
Introduction
David Smith, RN, CHN - Manager Operations, Fresenius Medical Care NA
Lynda Newman, MSN, RN, ACNS-BC, CNN - Clinical Coordinator Home Dialysis, Case Medical Ctr

RENAL PARALLEL SESSIONS

1:30pm - 4:45pm
RENAL TRACK A
Nuts and Bolts of Intensive Outpatient Therapies
Room: Holiday Ballroom 3 - Level 2
Moderator: Andre Kaplan, MD

1:30pm - 2:00pm
Tenuous Economics of a Nocturnal Program
Robert Provenzano, MD - Dir Nephrology, St Johns Hospital & Medical Ctr

2:00pm - 2:30pm
Practical Matters In Setting Up a Nocturnal Program
Karl Schwarze, MD - Chief Nephrology, Akron Nephrology Associates

2:30pm - 3:00pm
Discussion

3:00pm - 3:45pm
VISIT EXHIBITS & POSTERS - ENJOY REFRESHMENTS
Exhibit Area: Key Ballroom 6 - Level 2

3:45pm - 4:15pm
Technical and Practical Aspects of Daily Dialysis
Robert Provenzano, MD Dir Nephrology, St Johns Hospital & Medical Ctr

4:15pm - 4:45pm
Nocturnal Home Hemodialysis with an Eye Toward Long Term Survival of the Program
Lynda Newman, MSN, RN, ACNS-BC, CNN - Clinical Coordinator Home Dialysis, Case Medical Ctr

1:30pm - 3:00pm
RENAL TRACK B. NOVEL MEMBRANE TECHNOLOGIES
Room: Holiday Ballroom 4 - Level 2
Moderator: William Fissell, MD

1:30pm - 2:00pm
Controlled Pore Geometries for Enhanced Selectivity
**William Fissell, MD - Assoc Staff, Cleveland Clinic

2:00pm - 2:30pm
Anodized Alumina Membranes
**Zhongping Huang, PhD - Asst Prof Mech Eng, Widener Univ

2:30pm - 3:00pm
Annealed Silicon Nanoporous Membranes
Christopher Striemer, PhD - VP Engineering, SIMPore Inc

3:00pm - 3:45pm
VISIT EXHIBITS & POSTERS - ENJOY REFRESHMENTS
Exhibit Area: Key Ballroom 6 - Level 2

3:45pm - 4:30pm
RENAL SLIDE SESSION 1
Room: Holiday Ballroom 4 - Level 2

3:45pm
Tidal Peritoneal Dialysis (TPD) Using Low Tidal (TV) and Reserve (RV) Volumes: Towards an Automated Wearable Artificial Kidney (AWAK)
**Martin Roberts, PhD - VA Greater Healthcare Systems

4:00pm
Plasma Levels of Piperacillin and Tazobactam
In Vitro Model of CVVHD
Gisella Vischini, MD - S Eugenio Hospital

4:15pm
Possible Treatment of Hyperphosphatemia during Dialysis Using a Phosphate Binding Column and an Improved Dialysate
Matthew Fahrenkopf - Carnegie Mellon Univ
8:00am - 5:00pm

RENA L POSTER SESSION 1

Room: Exhibit Area - Key Ballroom 6 - Level 2

Posters Available All Day

Board #

59  Clinical Evaluation of a Vascular Access System for Hemodialysis
   **Abram Janis, MS - IncuMed Research Organization

60  Comparison of Clearance and Fluid Distributions of Newly Designed High Flux Hemodialyzers
   **Zhongping Huang, PhD - Widener Univ

61  Patient Satisfaction with Renal Replacement Therapy, Education and Training
   Greg Abbott, MBA - Baxter Healthcare

62  Assessment of Change in Hydration Status in Hemodialysis Patients Using Bioimpedance Techniques
   Samer Abbas, PhD - Renal Research Inst

63  A Selective Cytopheretic Inhibitory Device (SCD) Accelerates Renal Recovery and Improves Mortality in ICU Patients with AKI and MOF in an Exploratory Clinical Study
   **David Humes, MD - Univ of Michigan

64  Effect of Selective Renal Artery Perfusion with Extracorporeal Circuit on Renal Function under Acute Cardio-Renal Syndrome
   Shigeru Hanada, MD - Nat’l Cardiovascular Research Inst

65  Optimized Biocompatibility and Performance of a New Steam Sterilized Plasma Separation Membrane
   Markus Storr - Gambro Dialysatoren GmbH

66  Mechanism of Action of a Selective Cytopheretic Device to Ameliorate Multiorgan Dysfunction in Septic Shock
   **Juyoung Jung, DVM, PhD - Univ of Michigan

67  Does a Reduced Sodium Dietary Intake Impact Blood Pressure and Total Body Water?
   Natalia Rakova, MD - Russian Academy of Sciences

68  Initial In Vivo Evaluation of a Hemodialzing System for Transportable Treatment
   **George Pantalos, PhD - Univ of Louisville

69  Insulinogenic Index in Non-Diabetics during Hemodialysis
   **Daniel Schnedtiz, PhD - Medical Univ of Graz

70  Cryoreactive Albumin Removal Apheresis (CRARA) Therapy for the Prevention of Diabetic Complication
   **Hiroshi Miyamoto, PhD - Baylor College of Medicine

71  Dialyzor End-Caps Revisited
   **Alexandra Peysor, BS - Columbia Univ

72  Development of the 2nd Generation Granulocytapheresis Column
   Junji Takaba - Baylor College of Medicine

8:00am - 8:30am

RAPID FIRE FLASH PRESENTATIONS

Five Abstracts have been selected for presentation in the New Rapid Fire format. Authors will have five minutes to present up to three slides. Please direct all questions to speakers at their poster board in the Exhibit Hall.

Clinical Evaluation of a Vascular Access System for Hemodialysis
   **Abram Janis, MS - IncuMed Research Organization

Modeling and Numerical Analysis of Platelet Activation, Adhesion and Aggregation in Artificial Organs
   **Joewook Nam, PhD - Rice Univ

Impact of a Continuous Flow Left Ventricular Assist Device on Right Ventricular Function
   **Jeffrey Morgan, MD - Henry Ford Hospital

Evaluation of Oxygen Exchange in Total Liquid Ventilation with a Bubble Gas Exchanger
   **Philippe Micheau, PhD - Univ de Sherbrooke

Development of a 2nd Gen. Data Acquisition Platform for the Pediaflow VAD
   **Salim Olia, BS - Univ of Pittsburgh

8:30am - 12:15pm

GENERAL SESSION 2 - FRIDAY

"Disruptive Technologies: Developing the Next Breakthrough"

Room: Key Ballroom 8, 11, 12 - Level 2

Chairmen: William Wagner, PhD & William Weiss, PhD

8:30am - 9:00am

KEYNOTE ADDRESS

Enhancing Innovation and Its Commercial Application in an Academic Medical Center
   Christopher Coburn, PhD - Executive Director Innovations, Cleveland Clinic

9:00am - 9:30am

The Safe Surgeon and Surgical Innovation
   **William Holman, MD - Prof CT Surgery, Univ of Alabama at Birmingham - President ASAIO

9:30am - 10:00am

ECMO as Organ Resuscitation for Donors after Cardiac Death
   Constantino Fondevila, MD, PhD - Assoc Prof Surgery, Univ of Barcelona

10:00am - 10:45am

VISIT EXHIBITS & POSTERS - ENJOY REFRESHMENTS

Exhibit Area: Key Ballroom 6 - Level 2
10:45am - 11:15am
ASAIO HASTINGS LECTURE
Artificial Lung - A New Inspiration
**Joseph Zwischenberger, MD - Chair Surgery, Univ of Kentucky

11:15am - 11:45am
50th Scribner Anniversary - Dialyzing His First Patients with Chronic Renal Failure Using the Scribner - Quinton Shunt
**Christopher Blagg, MD - Executive Director, Northwest Kidney Centers

11:45am - 12:15pm
BARNEY CLARK AWARD PRESENTATION
Presented by: **Don Olsen, DVM - President, Utah Artificial Heart Inst
Presented to:
**Eli Friedman, MD - Prof Medicine, Downstate Medical Center

ASAIO WILLEM J KOLFF - DON B OLSEN AWARD PRESENTATION
Presented by: **Don Olsen, DVM to:
**Nobumasa Katagiri, ME - Nat'l Cardiovascular Ctr Research Inst

12:15pm - 1:15pm
WORKING LUNCHEON - Admission by ticket
Room: Tubman A, B - Level 3
Physicians Present - Training & Education with Devices / Therapy
**Mark Slaughter, MD - Prof & Chief Thoracic & CV Surg, Univ of Louisville

1:30pm - 5:00pm
SPECIAL INTERACTIVE EXHIBIT:
Demonstrating the Preparation and Management During Transport of a Critically Ill Patient Who is Being Sent to a Tertiary Care Facility for a Highly Technical Procedure. In addition, Attendees Can See How Well They Perform Resuscitation-Related Procedures
Room: Exhibit Area - Key Ballroom 6 - Level 2

Integration of Medical Education and Technology, Recent Innovations
Richard Aghababian, MD - Assoc Dean CME, Univ of Massachusetts Medical School
**James DuCanto, MD - Asst Clinical Prof Liver Transplant Anesthesia, Aurora St Luke's Medical Ctr

Jorge Yarzebski, NREMT-P - Emergency Med Prog Coordinator, Univ of Massachusetts

A. Preparation and Management during Transport of a Critically Ill Patient
B. Demonstration of Resuscitation-Related Procedures

1:30pm - 4:15pm
PULMONARY TRACK

1:30pm - 3:00pm
PULMONARY LECTURE & SLIDE SESSION 3
Room: Key Ballroom 7 - Level 2
Moderators: William Federspiel, PhD & Guruprasad Giridharan, PhD

2:00pm Assesement of the Gas Exchange Performance of the TLV System with a Slanted Operating Table
Ryo Yokoi, BS - Tokyo Denki Univ

2:15pm Veno-Venous Peripheral Extracorporeal Membrane Oxygenator (ECMO) for Acute Respiratory Failure Due to Influenza A (H1N1) Virus Infection: Early Satisfactory Results in Our Single-Centre Experience
Pasquale Totaro, MD, PhD - IRCCS Foundation S Matteo

2:30pm 30 Day In-Vivo Performance of an Integrated Pediatric Pump-Lung for Cardiac/Cardiopulmonary Support
Tao Zhang, PhD - Univ of Maryland

2:45pm In Vitro Testing Results of the Hemolung Respiratory Assist System
**Paul Bieniek - Alung Technologies Inc

3:00pm - 3:45pm
VISIT EXHIBITS & POSTERS - ENJOY REFRESHMENTS
Exhibit Area: Key Ballroom 6 - Level 2

3:45pm - 4:45pm
SPECIAL SESSION - IFAO - ESAO
Room: Key Ballroom 7 - Level 2
Moderator: Stephen Ash, MD

3:45pm - 4:15pm
Regenerative Medicine and ESAO Conference 2011
Rui Reis, PhD - Assoc Prof, Univ of Minho

4:15pm - 4:45pm
Artificial Organs and IFAO
**Jörg Vienken, PhD - President IFAO
1:30pm - 3:00pm
CARDIAC TRACK

1:30pm - 3:00pm
CARDIAC SLIDE SESSION 3
Continuous Flow LVAD - Clinical Implication
Room: Key Ballroom 9 - Level 2
Moderators: Geetha Bhat, MD, PhD & Scott Corbett, PhD

1:30pm Lack of Ischemic Strokes in Patients Implanted with the HeartMate II LVAD: A Single Center Experience
Paul Nolan, PhD - Univ of Arizona

1:45pm Does Coronary Flow Increase in cf-LVAD Support?
**Egemen Tuzun, MD - Texas Heart Inst

2:00pm How Effective Are Continuous Flow Left Ventricular Assist Devices in Lowering High Pulmonary Artery Pressures in Heart Transplant Candidates?
**Geetha Bhat, MD, PhD - Advocate Christ Medical Ctr

2:15pm Efficacy of Continuous-Flow LVADs in End-Stage Heart Failure Patients with Severe Pulmonary Hypertension
Forum Kamdar, MD - Univ of Minnesota

2:30pm Tricuspid Valve Replacement Coincident with HeartMate II LVAD Insertion
**Walter Dembitsky, MD - Sharp Memorial Hospital

2:45pm Low Operative Mortality in Patients Supported with a Left Ventricular Assist Device Requiring Pump Exchange
**Antone Tatooles, MD - Advocate Christ Medical Ctr

1:30pm - 2:45pm
CARDIAC INVITED SPEAKERS 3
Room: Key Ballroom 10 - Level 2
Moderators: George Pantalos, PhD & Todd Massey, MD

1:30pm - 1:50pm
Dual Continuous Flow: Total Artificial Heart with Induced Pulsatility
**O Howard Frazier, MD - Chief Center for Cardiac Support, Texas Heart Inst

1:50pm - 2:15pm
Remote Monitoring Session
Gregory Ewald, MD - Assoc Prof Medicine, Washington Univ

2:15pm - 2:45pm
Human Factors and When to Evaluate the Device
**Sonna Patel-Raman, PhD - Biomedical Engineer, FDA - FDA Perspective
**Jeffrey LaRose, MSME - Exec VP, CSO, HeartWare Inc - Industry Perspective

3:00pm - 3:45pm
VISIT EXHIBITS & POSTERS - ENJOY REFRESHMENTS
Exhibit Area: Key Ballroom 6 - Level 2

3:45pm - 5:30pm
CARDIAC SLIDE SESSION 4
VADs - Experimental
Room: Key Ballroom 9 - Level 2
Moderators: Steven Conrad, MD, PhD & John Pristas, MBA

3:45pm - 4:00pm
Hypothermia
Marie Mullen, MD - Assoc Prof Emergency Medicine, Univ of Massachusetts

4:00pm Opening Time and Average Load on the Aortic Valve during cf-LVAD Support
**Egemen Tuzun, MD - Texas Heart Inst

4:15pm A New Technology for Preventing VAD Drive Line Infection Using Plasma-Based Ion Implantation
**Yoichi Sugita, MD - Baylor College of Medicine

4:30pm Acute Animal Experiments of a Magnetically Levitated Axial Flow VAD
**Don Olsen, DVM - Utah Artificial Heart Inst

4:45pm 1st US Implants of the Levacor VAD
**Douglas Horstmanshof, MD - Integris Advanced Cardiac Care

5:00pm Optimizing Cardiovascular Interaction with Ventricular Assist Devices
Kai Chun Wong - Helmholtz Inst

5:15pm Hemorheological Evaluation of the 3rd Gen. Pediaflow VAD Performance
**Salim Olia, BS - Univ of Pittsburgh

8:00am - 5:00pm
CARDIAC POSTER SESSION 2
Room: Exhibit Area - Key Ballroom 6 - Level 2
Posters Available All Day

73  Miniature Cardiopulmonary Bypass System for Mice
**Akira Kawaguchi, MD, PhD - Tokai Univ

74  Development of a Novel Inflow Cannula for Less Invasive and Antithrombogenic LVAD Support
**Yoshiaki Takawa, MD - Nat’l Cardiovascular Research Ctr

75  Modeling and Numerical Analysis of Platelet Activation, Adhesion and Aggregation in Artificial Organs
**Jaewook Nam, PhD - Rice Univ
76 Development of Native Heart Load Control System with Continuous Flow Ventricular Assist Device for Bridge to Recovery of Failing Heart
**Takashi Nishimura, MD, PhD - Univ of Tokyo
ASAIO Y Nosé International Fellowship Recipient

77 Impact of a Continuous Flow Left Ventricular Assist Device on Right Ventricular Function
**Jeffrey Morgan, MD - Henry Ford Hospital

78 Rescue Therapy with TandemHeart™ in Patients with Severe Post-Heart Transplant Rejection and Cardiogenic Shock
Mehmet Akay - Texas Heart Inst

79 Influence of the Aortic Root Compliance on Hemolysis of Heart Valve Prostheses: An In Vitro Study
Marcus Hormes, Dipl Ing - RWTH Aachen Univ

80 Time-Dependent Differences in the Cause of Death after Left Ventricular Assist Device Implantation
**Ian Ledford - Intermountain Medical Ctr

81 LEVACOR™ VAD - Preclinical Qualification for US Study
**Phillip Miller, MS - WorldHeart Corporation

82 Preclinical Biocompatibility Assessment of Pediatric VADS in the Ovine Model
**Carl Johnson, BS - Univ of Pittsburgh

83 Use of External Pressure Application To Augment Fontan Hemodynamics
**Sonya Bhavsar, BS - Virginia Commonwealth Univ

84 In Vitro and Ex Vivo Development of a Novel Bioactive Ventricular Assist Device Conduit
Matthew Phaneuf, BS - BioSurfaces Inc

85 Biventricular Support Using Implantable Continuous-Flow Ventricular Assist Devices
Shunsuke Saito, MD - Osaka Univ

86 Speed Modulation of the Continuous-Flow Total Artificial Heart To Simulate a Physiologic Arterial Pressure Waveform
Akira Shiota, MD, PhD - Cleveland Clinic

87 Accidental Intraabdominal Tunneling of Driveline in Patient Supported for over 4 Years with DuraHeart Left Ventricular Assist Device (LVAD) Detected during Pump Exchange
**Alexander Stepanenko, MD - Deutsches Herzzentrum Berlin

88 Arterial Pressure Correlates with Cardiac Output during Biventricular Pacing Optimization
Barry Breaux - Columbia Univ

89 A Dynamic Study on the Hemolytic Effect of Negative Pressure on Blood
**Tim Kaufmann, Dipl Phys - RWTH Aachen Univ

90 Development of a Wearable Pneumatic Total Artificial Heart System with an Ultra Compact Drive Unit
Hirohito Sumikura, PhD - Nat'l Cardiovascular Research Ctr

91 Biochemical and Functional Changes in Red Blood Cells and Platelets Induced by Iodinated Radiographic Contrast Media (ICM)
**Jan-Stanley Simoni, DVM, PhD - Texas Tech Univ

92 A Design Tool for Miniaturized RBP Impeller Suspension Using Fluid Film Bearings
Daniel Timms, Heimholtz Inst

93 Percutaneous Cavopulmonary Assist System for Failing Fontan Circulation
**Dongfang Wang, MD, PhD - Univ of Kentucky

94 Peripheral Approach to the Impella 5.0LP
Joshua Baker, MD - Massachusetts General Hospital

95 Development of an Ultra-Compact Pneumatic Pressure Generation System To Drive a Pneumatic Blood Pump for VAD and TAH
**Akihiko Homma, PhD - Nat'l Cardiovascular Research Ctr

96 Development of a Rapid, Safe, Fiberoptic Guided, Single-Incision Cricothyrotomy Method Using a Large Ovine Model: A Pilot Study
**James DuCanto, MD - Aurora St Luke's Medical Ctr

97 Simulation of the Flow in the Cardiovascular System for Cardiopulmonary Bypass and Cardiac Assist Using a Two-Way Fluid-Structure-Interaction Model
**Tim Kaufmann, Dipl Phys - RWTH Aachen Univ

98 Computational Modeling of Nitinol Stents for Percutaneous Heart Valves
**Javid Moraveji - Univ of South Carolina

99 Simulation of a Pneumatic Driver for a Pediatric Ventricular Assist Device
**William Weiss, PhD - Penn State Univ

100 Ultrafiltration Techniques in a Large-Animal Model of Cardiac Replacement
**Jeff Conger, BS, RRT - Texas Heart Inst

101 Investigation of Effects of Passive Filling Left Ventricular Assist Device on Native Failing Heart in Mock Circulation
Yu Funabashi - Tokyo Denki Univ

102 In Vivo Calcification of Polyurethane Trileaflet Heart Valves
**Caitlyn Bosecker, SMME - Abiomed Inc
1:30pm - 5:00pm
BIOENGINEERING TRACK

1:30pm - 3:00pm
BIOENGINEERING SLIDE SESSION 3
Ventricular Assist Device Bioengineering
Room: Holiday Ballroom 1 - Level 2
Moderators: Marina Kameneva, PhD & Timothy Maul, PhD

1:30pm Predictors of Late Exit Site Infections Associated with Ventricular Assist Device (VAD) Therapy
Pramond Bonde, MD - Univ of Pittsburgh

1:45pm Early Unloading of Infarcted Hearts Prevents Cardiac Remodeling and Preserves Calcium Homeostasis
Giacomo Bianchi, MD - Univ of Maryland

2:00pm Impella LVAD Effectively Decreases Strain in the Left Ventricle after Myocardial Infarction
Zhongjun Wu, PhD - Univ of Maryland

2:15pm Optimal Identification of Need for Right Ventricular Support Using Cost-Sensitive Decision Tree
Yajuan Wang, MS - Carnegie Mellon Univ
ASAIO Young Innovator First Time Author Fellowship Recipient

2:30pm Biodegradable and Thermoresponsive Hydrogels Designed for Injection Therapy To Improve Function in Ischemic Cardiomyopathy
William Wagner, PhD - Univ of Pittsburgh

2:45pm Sensitivity of Hemodynamics and Wall Stress to the Speed of Continuous Flow Pump
Choon-Sik Jhun, PhD - Penn State Univ

1:30pm - 3:00pm
BIOENGINEERING INVITED SPEAKERS 3

3:45pm - 5:15pm
BIOENGINEERING SLIDE SESSION 4
Artificial Organ Development
Room: Holiday Ballroom 1 - Level 2
Moderators: Amy Throckmorton, PhD & Scott Merz, PhD

3:45pm Development of a Cell Pouch To Form an Artificial Pancreas
David White, PhD - Univ of Western Ontario

4:00pm Bioengineered Skin Allografts - A New Method To Prevent Humoral Response
Lauren Brasile, PhD - Breonics

4:15pm Fibronectin Influences Staphylococcus Epidemidis RP62A Adhesion and Interaction with Platelets on Polyurethane Biomaterial Surfaces
Christopher Siedlecki, PhD - Penn State Univ

4:30pm Evaluation of Small Intestine Submucosa Vascular Grafts for Small-Diameter Veins Replacement: Methodology and Early Results in an Animal Model
Lina Maria Quijano - Univ of Los Andes

4:45pm Platelet Inhibition by Antibiotics and Implications in Circulatory Support Device Development
Denise Medvid - Penn State Univ

5:00pm Nitric Oxide (NO) Generating Silicone Hollow Fibers
Kagya Amoako, MS - Univ of Michigan

3:45pm - 4:45pm
BIOENGINEERING INVITED SPEAKERS 4

3:45pm - 4:15pm
Artificial Bladder - Neo-Organs
Tamer Aboushwareb, MD, PhD - Research Instructor, Wake Forest Univ

4:15pm - 4:45pm
Creating a New Cardiovascular Bioengineering Institute in Turkey
Kamuran Kadipasaoglu, PhD - Instructor Mech Eng, Bahcesehir Univ
Taha Elibol, BS - Research Assistant, Bahcesehir Univ

VISIT EXHIBITS & POSTERS - ENJOY REFRESHMENTS
Exhibit Area: Key Ballroom 6 - Level 2
8:00am - 5:00pm
BIOENGINEERING POSTER SESSION 2
Pediatric & Adult Blood Pump Development
Posters Available All Day
Room: Exhibit Area - Key Ballroom 6 - Level 2
Board #

103 In-Vitro Hemodynamic Evaluation of Ventricular Suction Conditions of the Evaheart Assist Pump
**Antonio Ferreira, PhD - Carnegie Mellon Univ

104 Differences in Hydrodynamic Performance and Flow Estimation between Axial and Centrifugal LVAD
**Guruprasad Girdharan, PhD - Univ of Louisville

105 Introductory Tests to In Vivo Evaluation: Magnetic Coupling Influence in Motor Controller
Eduardo Bock, MSc - IDPC / FEM

106 Auxiliary Artificial Heart Endurance Test with a Mock Circulation Loop System
Aron Andrade, MD - Inst Dante Pazzanese of Cardiology

107 Modeling and Diagnostics of Total Artificial Heart
Taoufik Wassar - Univ of Houston

108 Surveillance and Management of HeartMate II Percutaneous Drivelines
**Trevor Snyder, PhD - Integris Baptist Medical Ctr

109 Evaluation of Oxygen Exchange in Total Liquid Ventilation with a Bubble Gas Exchanger
**Philippe Micheau, PhD - Univ de Sherbrooke

110 Aortic Outlet Extension in the 12cc Penn State Pediatric Ventricular Assist Device
**Michael Fickes, BS - Penn State Univ

111 A Methodology To Study the Hemodynamics in Patients with Bi-Directional Glenn Shunt
Carolina Vallecilla, MSc - Univ of Los Andes

112 A Font-type Mock Circuit with Heterometric Autoregulation
**Taha Elibol, BS - Bahcesehir Univ

113 Computational Assessment of Twisted Cage Filaments for an Intravascular Axial Flow Blood Pump for Cavopulmonary Assistance
**Amy Throckmorton, PhD - Virginia Commonwealth Univ

114 A Flow Analysis of a Polymeric Trileaflet Heart Valve
**Dylan Frank, BS - Penn State Univ

115 The Scaling Effects in Comparing Pediatric and Adult Mechanical Heart Valves
**Stephen Topper - Penn State Univ

1:30pm - 4:15pm
NEURAL SESSION
Room: Carroll A, B - Level 3
Moderators: Nicholas Hatsopoulos, PhD & Sonna Patel-Raman, PhD

1:30pm - 2:30pm
Timothy Horuchi, PhD - Assoc Prof Computer Eng, Univ of Maryland
John Pezaris, PhD - Asst Prof Neuroscience, Massachusetts General Hospital
Phil Troyk, PhD - Assoc Prof Bioeng, IIT

2:30pm - 3:00pm
Advances In Artificial Hearing
Christof Stieger, PhD - Asst Prof ENT Head & Neck Surg, Univ of Bern

3:00pm - 3:45pm
VISIT EXHIBITS & POSTERS - ENJOY REFRESHMENTS
Exhibit Area: Key Ballroom 6 - Level 2

3:45pm - 4:15pm
ARTIFICIAL EYES
Robert Greenberg, MD, PhD - President & CEO, Second Sight Medical Products Inc

1:30pm - 4:15pm
PEDIATRIC SESSION
Room: Paca A, B - Level 3
Moderators: Brian Duncan, MD, MBA & Timothy Baldwin, PhD

116 Functionalization of Polymeric Membranes for Tissue Engineering of Heart Valves
**Ismar Cestari, MD, PhD - Univ of Sao Paulo

117 Development of a Novel Material Testing Method for Simulation of Biomedical Materials
**Tim Kaufmann, Dipl Phys - RWTH Aachen Univ

118 Development of a 2nd Gen. Data Acquisition Platform for the Pediaflow VAD
**Salim Olia, BS - Univ of Pittsburgh
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<tr>
<td>3:00pm - 3:45pm</td>
<td><strong>VISIT EXHIBITS &amp; POSTERS - ENJOY REFRESHMENTS</strong>&lt;br&gt;Exhibit Area: Key Ballroom 6 - Level 2</td>
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<tr>
<td>3:45pm - 4:15pm</td>
<td><strong>Challenges In Pediatric Cardiac Assist Device Development &amp; Use</strong>&lt;br&gt;<strong>James Antaki, PhD</strong> - Prof Biomed Eng, Carnegie Mellon Univ</td>
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<td>5:30pm - 6:00pm</td>
<td><strong>ASAIO MEMBER BUSINESS MEETING</strong>&lt;br&gt;Room: Carroll A, B - Level 3</td>
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<td><strong>SATURDAY, MAY 29</strong></td>
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<td>8:00am - 8:30am</td>
<td><strong>RAPID FIRE FLASH PRESENTATIONS</strong></td>
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</table>
| 8:30am - 12:00pm | **GENERAL SESSION 3 - SATURDAY**<br>Room: Key Ballroom 8, 11, 12 - Level 2<br>Chairmen: William Wagner, PhD & David Humes, MD
"Roadmap to Innovation: From Concept to Commercialization" |
| 9:00am - 10:30am | **NEW VENTURE FORUM**<br>Bridging Innovative Medical Concepts and Technologies to a Commercial Reality<br>**Panel:**<br>**Brian Duncan, MD, MBA**<br>**Eric Chen, MS**<br>**Thomas Meese, BSE**<br>Tracy Warren<br>Edward Berger, PhD<br>**Dynamitral: The Only Dynamic Mitral Valve Bioprosthesis**<br>**Arash Kheradvar, MD, PhD** - Asst Prof Mech Eng, Univ of South Carolina<br>**Occlude Solutions**<br>Carolina Vallecilla, MSc - Univ of Los Andes<br>**Bloodox**<br>Camila Castro, MSc - Univ de Los Andes<br>10:30am - 11:00am | **VISIT EXHIBITS & POSTERS - ENJOY REFRESHMENTS**<br>Exhibit Area: Key Ballroom 6 - Level 2 |
| 11:00am - 11:30am | **The Sorcerer's Apprentice - An Inventor’s Journey**<br>**Richard Wampler, MD** - Consultant |
| 11:30am - 12:00pm | **DEBATE**<br>Ethics of Organ Resuscitation with Donors after Cardiac Death<br>**Joseph Zwischenberger, MD** - Chair Surgery, Univ of Kentucky<br>**Jeffrey Punch, MD** - Chief Transplantation, Univ of Michigan Medical Center |
| 1:00pm - 3:00pm | **COMMERCIALIZATION SESSION**<br>Room: Key Ballroom 10 - Level 2<br>Moderator: Tracy Warren |
| 1:00pm - 2:30pm | **SYMPOSIUM**<br>Commercializing Medical Devices<br>**Panel Discussion - The Basics of Commercialization**
**Intellectual Property Primer**<br>Bonnie McLeod, PhD, JD - Partner / Attorney, Cooley Godward Kronish LLP<br>**The Medical Device Development Pathway: From Concept to Reimbursement in Seven Easy Steps**<br>**Brian Duncan, MD, MBA** - Venture Partner - Arboretum Ventures<br>**Equity Primer - The Play Book of VC’s**<br>Tracy Warren - General Partner, Battelle Ventures LP |
2:30pm - 2:45pm
**Small Business: Trials and Tribulations**
Doug Godshall - President & CEO, HeartWare Inc

2:45pm - 3:00pm
**How to Reach High Standards to Sell Your Laboratory? A win-win Situation for Industry and Academia!**
**Egemen Tuzun, MD - Asst Dir CV Surg, Texas Heart Inst**

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

1:00pm - 2:30pm
**CARDIAC SLIDE SESSION 5**

VADs
Room: Key Ballroom 9 - Level 2
Moderators: Wayne Richenbacher, MD & Mark Macedo, BSN

1:00pm  Characterization of Reasons for Turning down Referrals for Left Ventricular Assist Devices (LVADs)
**Ian Ledford - Intermountain Medical Ctr**

1:15pm  Anatomic Fit of a Percutaneous VAD for Treatment of Acute Right Heart Failure
**Scott Corbett, PhD - Abiomed Inc**

1:30pm  Ischemic Bowel Disease in Patients on Mechanical Assist Devices
**Monica Gustafson, MD - Univ of Arizona**

1:45pm  An Innovative, Miniaturized, Continuous-Flow Total Artificial Heart: Device Design and Preliminary Studies
**Mark Slaughter, MD - Univ of Louisville**

2:00pm  Anticoagulation Strategies for High Risk HeartMate II Patients
**Walter Dembitsky, MD - Sharp Memorial Hospital**

2:15pm  Arteriovenous Malformation and Gastrointestinal Bleeding in Patients with the HeartMate II Left Ventricular Assist Device
**Zumrut Demirozu - Texas Heart Inst**

8:00am - 12:00pm
**CARDIAC POSTER SESSION 3**
Room: Exhibit Area - Key Ballroom 6 - Level 2
Posters Available Until 12 Noon

Board #

119  A Single-Pass Orifice System To Assess Red Blood Cell Fragility
**Luke Herbertson, PhD - FDA**

120  Complicated Endocarditis Requiring Temporary Circulatory Support after Surgical Correction - Incidence and Outcome
**Christian Binner, MD - Heart Center Leipzig**

121  Pre-Clinical Assessment of the 3rd PediaFlow™ Pediatric Ventricular Assist Device Prototype
**Timothy Maul, PhD - Univ of Pittsburgh**

122  A New Failing Fontan Sheep Model
**Dongfong Wang, MD, PhD - Univ of Kentucky**

123  Left Ventricular Reverse Remodeling with the HeartMate II LVAD as Measured by Left Ventricular End Diastolic Dimensions and Severity of Mitral Regurgitation
**Jeffrey Morgan, MD - Henry Ford Hospital**

124  Quantification of Ambulatory Power Source for Ventricular Assist System
**Craig Carder, MSEE - HeartWare Inc**

125  In-Vitro Optimization of Inflation/Deflation Control for Para-Aortic Counter-Pulsatile Circulation Support
**Ming-Yao Chan, PhD - Nat’l Cheng Kung Univ**

126  A New Axial Blood Designed for Adults in Fuwai Hospital
**Yan Zhang, MD - Fu Wai Hospital**

127  Heart Rate Variability in Ventricular Assist Device Animals in View of the Mathematical Models
**Eiki Akagawa, PhD - Nat’l Cardiovascular Research Ctr**

128  Regional Cerebral Oxygen Saturation Monitoring during Unilateral and Bilateral Carotid Perfusion for Cerebral Protection in Aortic Surgery
**Pasquale Totaro, MD, PhD - IRCCS Foundation S Matteo**

129  Acquisition of Accurate Pressure-Volume Loops of Left Ventricle in Mock Circulation
**Yoshihiro Miyazawa - Tokyo Denki Univ**

130  Experimental Evaluation of the Incor Pediatric Ventricular Assist Device
**Idagene Cestari, PhD - Heart Inst, InCor**

131  Clinical Experience with Terumo-Triplex in Total Arch Replacement-Analysis of Postoperative Serum Leakage, Graft Dilatation Ratio and Inflammatory Response
**Toshihiro Ohata, MD, PhD - KKR Sapporo Medical Ctr**

132  Hydraulic Ventricular Work Reduction with the Micromed cf-LVAD, an Ex-Vivo Study
**Kim Pennings, BSc - Eindhoven Univ of Technology**

133  Interlaboratory Measurements of Flow Parameters for Comparison to CFD Simulations of FDA’s Nozzle Model
**Prasanna Harirahan - FDA**
134 Modeling and Simulation of Phasic Coronary Flow under Counter-Pulsatile Circulation Support  
Chun-Hao Hung - Aeronautics & Astronautics

135 Computational Fluid Dynamic Analysis of Aerosol Distribution in the Human Tracheo-Bronchial Tree  
**Paola Bagnoli, PhD - Politecnico di Milano

136 A Computational Approach To Assess the Effect of Dynamic Annulus on Mitral's Leaflet Stress Distribution  
**Ahmad Falahatpisheh, MSc - Univ of South Carolina

137 Investigation of Steady Flow through a Realistic Model of the Thoracic Human Aorta Using 3D Stereo-PIV and CFD-Simulation  
**Tim Kaufmann, Dipl Phys - RWTH Aachen Univ

138 New Computational Method in Tensor-Based Hemolysis Analysis for Artificial Heart Pump  
**Jaewook Nam, PhD - Rice Univ

139 Flow Rate Estimation for a Pneumatic Artificial Heart Using the Driveline Air Mass Flow  
**Kentaro Ohnuma, PhD - Nat'l Cardiovascular Research Ctr

140 Hemodynamic Analysis of a Novel Spherical Positive Displacement Rotary Blood Pump  
**Greg Burgreen, PhD - Optimal LLC

141 A Novel Ex Vivo Perfusion System for Analysis of High Blood Pressure in Human Vessels  
Ulrich Schreiber, PhD - German Heart Ctr Munich

142 Influence of Hemocor HPH-Hemoconcentrator on ATP Release from Human Erythrocytes  
**Jan-Stanley Simoni, DVM, PhD - Texas Tech Univ

143 Bridge to Recovery with a Thoratec Biventricular Assist Device for Postpartum Cardiomyopathy: A Case Report  
**Hannah Zimmerman, MD - Univ of Arizona

144 Evaluation of Less Invasive Treatment for Aortic Aneurysm with Ischemic Heart Disease by Catheter Intervention  
Shigeki Ito, MD, PhD - Nishitokyo Central General Hospital

145 Nitinol Based Artificial Muscle Independent Biventricular External Cardiac Assist Device: Bench Test Results  
Alexandre Michalis, MD - CHUV

146 PIV and Wall-PIV Study of a Valveless Counterpulsation Heart Assist Device  
**Leonid Goubergrits, PhD - Charite Universitaetsmedizin Berlin

147 Rare Cardiac Pathology: Unilateral Absence of Pulmonary Artery with Tetralogy of Fallot  
Tijen Alkan-Bozkaya, MD - Istanbul Bilim Univ

148 Tacrolimus Once-Daily Formulation in the De-Novo Prophylaxis of Transplant Rejection in Heart Allograft Recipients  
Akhim Koch - Uniklinik Heidelberg

1:00pm - 2:30pm  
PULMONARY TRACK

1:30pm - 2:30pm  
PULMONARY SLIDE SESSION 4

Room: Key Ballroom 7 - Level 2
Moderators: Richard Chan, CCP & Zhongjun Wu, PhD

1:00pm Platelet Response to Extracorporeal Respiratory Support  
**Xiaoqin Zhou, MD - Univ of Kentucky

1:15pm Combined Pulmonary and Renal Support in One Extracorporeal Device  
**Bettina Wiegmann, MD - Hannover Medical School

1:30pm Evaluation of Platelet Activation in Ovines Implanted with Integrated Pump-Lung Using Soluble P-Selectin  
Kang Zhou, MD - Univ of Maryland

1:45pm Pulsatile Versus Non Pulsatile Blood Flow in Blood Oxygenators: A CFD Study  
Marcus Hormes - RWTH Aachen Univ

2:00pm CFD Analysis of a Percutaneous Respiratory Assist Catheter  
**Greg Burgreen - Optimal LLC

2:15pm Immobilized Carbonic Anhydrase on Hollow Fibers Accelerates CO2 Removal from Blood  
**David Arazawa - Univ of Pittsburgh

1:00pm - 2:30pm  
BIOENGINEERING TRACK

1:00pm - 2:30pm  
BIOENGINEERING SLIDE SESSION 5

Room: Holiday Ballroom 1 - Level 2
Moderators: Karen May-Newman, PhD & Breigh Roszelle, MS

1:00pm Compliant Thoracic Artificial Lung Design Using Fluid-Structure Interaction Modeling  
**Rebecca Schewe, MS - Univ of Michigan

1:15pm Robust Simulation of CFD-Predicted Hemolysis  
**Greg Burgreen, PhD - Optimal LLC

1:30pm Numerical Model of Thrombosis and Thromboembolization: Microfluid Effects  
**Kenneth Solen, PhD - Brigham Young Univ
### BIOENGINEERING POSTER SESSION 3

**Models & Surfaces to Improve Artificial Organs**

Room: Exhibit Area - Key Ballroom 6 - Level 2  
Posters Available Until 12 Noon

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<th>Title</th>
<th>Authors</th>
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<td>149</td>
<td>Delivering Physiologic Pulse Pressures with Continuous Flow Ventricular Assist Devices</td>
<td><strong>Mickey Ising - Univ of Louisville</strong></td>
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<tr>
<td>150</td>
<td>Blood Dispersion in Capillaries</td>
<td><strong>David Macku, MD, MSc - Czech Technical Univ</strong></td>
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<td>151</td>
<td>Assessing Shear-Induced Platelet Activation: In Vitro Comparison between Human and Bovine Blood</td>
<td>Qijin Lu, PhD - FDA</td>
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<td>152</td>
<td>Design of a New Mag-Lev Hemolyzer Using CFD</td>
<td><strong>Zhongjun Wu, PhD - Univ of Maryland</strong></td>
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<td>153</td>
<td>Analysis of Pulsatile Flow in a Quasi-Angiostenosis Model Using the Finite Element Method</td>
<td>Naoki Katsura, MS - Toin Univ of Yokohama</td>
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<td>154</td>
<td>Pressure Versus Volume Loop Assessment for a Physical Cardiovascular Simulator System</td>
<td>Jeison Fonseca, MSc - Institute Dante Pazzanese of Cardiology</td>
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<td>155</td>
<td>3-D Reconstructed Patient-Specific Cavopulmonary Connection with Mechanical Assistance in the Inferior Vena Cava</td>
<td><strong>Sonya Bhavsar, BS - Virginia Commonwealth Univ</strong></td>
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<td>156</td>
<td>Chitosan/Gelatin Modified Film for Use in Prevention of Postoperative Peritoneal Adhesions</td>
<td>Elyas Shamram, MSc - Iran Univ</td>
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<tr>
<td>157</td>
<td>Coating Polymers with a Human Extracellular Matrix (hECM) Significantly Improves Implant Biocompatibility</td>
<td>Emmett Pinney - Histogen Inc</td>
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</table>
“I can breathe; I can walk; I can do almost anything now. I can play with my grandkids.”

MCS Therapies for any Patient, any Time

For more than 30 years, Thoratec® has been committed to developing advanced medical technologies to improve patient survival and quality of life.

Today, Thoratec offers the broadest range of mechanical circulatory support options available and has the experience and commitment required to support these proven therapies.
CABLE TALK

The braided Jarvik 2000® postauricular cable has had no failures in patients implanted up to 7½ years.

The new spiral abdominal cable has exceeded 20 million flex-test cycles without failure, compared to failure within ½ million test cycles for the previous design.

The longest patient support with an abdominal cable is 6½ years.

The infection rate of the Jarvik 2000 cable is low.

388 patients were supported 244 years with no pump replacements for cable, pump, or pocket infection. These included:
114 postauricular cable "Long Term" patients
274 abdominal cable "Bridge to TX" patients

Event incidences per patient were:
4.1% cable infections
0.8% pump infections
4.9% total

Event rates per patient year were:
0.066 cable infections
0.012 pump infections
0.078 total

Most infections were managed successfully with antibiotics.

Jarvikheart.com

Results tabulated March 15, 2010 - with many patients ongoing.