

54th Annual Conference - June 19-21, 2008 - Hilton San Francisco
"Concept to Commercialization of Organ Replacement & Repair Therapies"
Program 2008
as of 5.15.2008

CME 25.5 AMA PRA Category 1 Credits

This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Medical Society of the State of New York (MSSNY) through the joint sponsorship of MSSNY and ASAIO. MSSNY is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to sponsor continuing medical education for physicians. The Medical Society of the State of New York designates this educational activity for a maximum of 25.5 AMA PRA Category 1 Credits™. Physician should claim credit commensurate with the extent of their participation in the activity.

CCP 26.1 Category I CEU's

The American Board of Cardiovascular Perfusion will allot the following Category 1 CEU's to those perfusionists who attend the ASAIO 54th Annual Conference as follows:
 Thursday, June 19 - 9.0 Friday, June 20 - 9.0 Saturday, June 21 - 8.1

Thursday June 19, 2008

7:45am - 8:00am	WELCOME <i>Michael J Lysaght, PhD, President ASAIO</i>	
8:00am - 12:00pm	GENERAL SESSION 1 Continental 4 & 5 - Ballroom Level - Bldg 3 <i>Moderators: Michael Lysaght, PhD & David Humes MD</i>	
8:00am - 9:30am	BIOENGINEERING SYMPOSIUM <u>Surface Functionalization and Characterization of Biomaterials</u> <i>David Castner, PhD - Prof Bioeng, Univ of Washington</i> <u>Applying Concepts from Biomaterials and Tissue Engineering to Engineer Immune Responses</u> <i>Darrell Irvine, PhD - Assoc Prof Bioeng, MIT</i> <u>Nitric Oxide Releasing / Generating Polymers for Blood Contacting Medical Devices</u> <i>Mark Meyerhoff, PhD - Prof Chemistry, Univ of Michigan</i>	
9:30am - 9:50am	PRESIDENT'S ADDRESS <i>Michael Lysaght, PhD - Prof & Dir Biomed Eng, Brown Univ</i>	<div style="border: 1px solid black; width: 60px; height: 25px;"></div>
9:50am - 9:55am	BARNEY CLARK AWARD PRESENTATION <i>Don Olsen, DVM</i>	
9:55am - 10:00am	IFAO - Update of International Federation of Artificial Organs <i>Peer Portner, PhD - President IFAO</i>	
10:00am - 10:45am	VISIT EXHIBITS, POSTERS & ENJOY REFRESHMENTS Golden Gate Ballroom - Lobby Level - Bldg 3	
10:45am - 11:15am	KEYNOTE ADDRESS - CARDIAC <u>Can We Teach Medical Device Innovation?</u> <i>Paul Yock, MD - Prof Med & Bioeng, Stanford University</i>	<div style="border: 1px solid black; width: 60px; height: 25px;"></div>
11:15am - 12:00pm	PRESENTATION OF TOP ABSTRACT & FELLOWSHIPS	
11:15am	ASAIO Willem Kolff Young Investigator Fellowship Recipient <u>Monocyte-Derived Microparticles in Biomaterial Thrombogenicity</u> <i>Connie Hall, PhD - Illinois Institute of Technology</i> (Abstract Journal Page 12)	
11:30am	ASAIO Medforte Innovation Fellowship Recipient <u>Hemodynamics of In Parallel Artificial Lung Attachment at High Flows</u> <i>Junewai Reoma, MD - University of Michigan</i> (Abstract Journal Page 63)	
11:45am	ASAIO Y Nose International Fellowship Recipient <u>Who Should be Delisted from Urgent Heart Transplantation in Germany?</u> <i>Takeishi Komoda, MD, PhD - Deutsches Herzzentrum Berlin</i> (Abstract Journal Page 27)	
12:00pm - 1:15pm	WORKING LUNCHEON 1 - Admission by ticket only, no standing room Mason Room - 6th Fl, Bldg 3 <u>The NSF SBIR Program and How to Use this Opportunity</u>	

to Advance Your Small Business

Thomas Allnut, PhD - Program Director, SBIR / STTR

- 12:00pm - 1:15pm **WORKING LUNCHEON 2 - Admission by ticket only, no standing room**
Continental 8 - Ballroom Level - Bldg 3
Regulatory IDE - Investigational Device Exemption
Sonna Patel, PhD - Biomedical Engineer, FDA
- 12:00pm - 1:15pm **WORKING LUNCHEON 3 - Admission by ticket only, no standing room**
Continental 9 - Ballroom Level - Bldg 3
Endovascular Therapies
Eric Roselli, MD - Cardiac Surgeon, Cleveland Clinic
- 12:00pm - 1:15pm **WORKING LUNCHEON 4 - Admission by ticket only, no standing room**
Taylor Room - 6th Fl, Bldg 3
Teaching Biomedical Design
Todd Brinton, MD - Instructor Interventional Cardiology, Stanford Univ
- 12:00pm - 1:15pm **WORKING LUNCHEON 5 - Admission by ticket only, no standing room**
Continental 1 - Ballroom Level - Bldg 3
ASAIOfyi - Academic vs. Industry Career
Steven Day, PhD - Asst Prof Mech Eng, Rochester Inst of Technology
Timothy Baldwin, PhD - Prog Dir CV Disease, NHLBI
Gill Bearnsen, PhD - Dir Advanced R & D, WorldHeart Corp
- 1:30pm - 3:00pm **SLIDE SESSION 1 CARDIAC**
Continental 6 - Ballroom Level - Bldg 3
Moderators: Lyle Joyce MD, PhD &
- 1:30pm **LVAD Support Increases Transvalvular Pressure Gradient**
G Giridharan, PhD - University of Louisville
(Abstract Journal Page 30)
- 1:45pm **"Bridge-To-Bridge" Mechanical Support with Levitronix Centrimag in Refractory Cardiogenic Shock**
Antonio Loforte, MD - Deutsches Herzzentrum Berlin
(Abstract Journal Page 20)
- 2:00pm **LAVDs for Less Acutely Ill Patients: Do Current Data Justify the Strategy?**
Andrew Boyle, MD - University of Medicine
(Abstract Journal Page 22)
- 2:15pm **Isolation of Cavitation Energy and Asynchronous Leaflet Closure in Mechanical Heart Valves Using Wavelet Transforms**
Luke Herbertson, BS - Pennsylvania State Univ
(Abstract Journal Page 47)
- 2:30pm **Safety of Less Intensive Antocoagulation/AntiPlatelet Therapy for Rotary Blood Pumps**
Aly El Banayosy, MD - Heart Center NRW
(Abstract Journal Page 38)
- 2:45pm **In Vivo Experience with Different Types of Assist Devices for Heart Unloading**
Tao Zhang, PhD - Univ of Maryland School of Medicine
(Abstract Journal Page 28)
- 1:30pm - 3:00pm **SLIDE SESSION 2 PULMONARY**
Continental 4 - Ballroom Level - Bldg 3
Moderators: Joseph Zwischenberger, MD &
- 1:30pm **A New Lung-Protective Total Liquid Ventilation Device**
Paola Bagnoli, PhD - Politecnico di Milano
(Abstract Journal Page 60)
- 1:45pm **Intraoperative Respiratory Management and Function in Lambs and Goats Undergoing Implantation of the Penn State Pediatric Ventricular Assist Device**
Elizabeth Carney, DVM - Penn State College of Medicine
(Abstract Journal Page 62)
- 2:00pm **Early But Not Pre-Treatment with Perfluorohexane Vapor Attenuates Oleic Acid Induced Lung Injury**
Joerg Bleyl, MD, PhD - Univ Hospital Carl Gustav Carus
(Abstract Journal Page 62)
- 2:15pm **Study of CO₂ Removal of Total Liquid Ventilation System with Recirculation Circuit**
Toshihiko Horikoshi, BS - Tokyo Denki University
(Abstract Journal Page 63)
- 2:30pm **Optimum Structure Design of Blood Outlet Port (BOP) in a Membrane Oxygenator (MO)**
Ayaka Hirano, BS - Waseda University
(Abstract Journal Page 59)
- 2:45pm **Properties of Branching Microchannel Networks**
Philip Hewes, BSE - University of Michigan
(Abstract Journal Page 61)

- 1:30pm - 3:00pm **SLIDE SESSION 3 BIOENGINEERING**
Continental 5 - Ballroom Level - Bldg 3
Moderators: *William Federspiel, PhD & Trevor Snyder, PhD*
- 1:30pm **Tissue-Engineered Human Embryonic Extracellular Matrix for Therapeutic Device Applications**
Robert Kellar, PhD - Histogen Inc
(Abstract Journal Page 6)
- 1:45pm **Development of New Nerve Guide Tube for Repair of Peripheral Nerve Injury**
Hidenori Shimada, MD - Kyoto University
(Abstract Journal Page 5)
- 2:00pm **Regeneration of Central Nervous Tissue Using a Collagen Scaffold and Adipose-Derived Stromal Cells**
Akira Nakada, MD - Kyoto University
(Abstract Journal Page 16)
- 2:15pm **Cell-Based Extracorporeal Immune Therapy of Bacterial Sepsis**
Steffen Mitzner, MD - University of Rostock
(Abstract Journal Page 2)
- 2:30pm **Development of New Micro-Patterned Cellular Chips for Creation of Neuronal Networks Using Ion-Beam Irradiation of a Biodegradable Polymer**
Yoichi Sugita, MD, PhD - Baylor College of Medicine
(Abstract Journal Page 13)
- 2:45pm **Flow Patterns of Liposome-Encapsulated Hemoglobin (LEH) in Cerebral Ischemia as Shown by ¹⁸F-Labeled LEH on Positron Emission Tomography (PET) in the Rat**
Akira Kawaguchi, MD, PhD - Tokai University
(Abstract Journal Page 3)
- 1:30pm - 2:45pm **LECTURE & SLIDE SESSION 4 RENAL**
Continental 2 - Ballroom Level - Bldg 3
Moderators: *Robert Lindsay, MD &*
- 1:30pm - 2:00pm **New Wine in Old Skins: Applying Established Technology to New Concepts of ESRD Therapies**
Edward Leonard, PhD - Prof of Chem & Biomed Eng, Columbia University
- 2:00pm **Mathematical Modeling of Filtration in Mid-Dilution Hemodiafiltration**
Laurie Garred, PhD - Lakehead University
(Abstract Journal Page 64)
- 2:15pm **Design and Validation of an Accurate Fluid Management System for Use in Extracorporeal Membrane Oxygenation**
Philippe Sucasny, PhD - Georgia Institute of Technology
(Abstract Journal Page 66)
- 2:30pm **Recipient of ASAIO Fellowship**
Dual Cartridge Hemodialysis Systems
Anil Attaluri, BS - Widener University
(Abstract Journal Page 66)
- 1:30pm - 3:00pm **EUROPEAN FOCUS ON ARTIFICIAL INTERNAL ORGANS - ESAO**
Continental 3 - Ballroom Level - Bldg 3
Moderators: *Dr Joerg Vienken & Dr Dieter Falkenhagen*
- 1:30pm **Computational Design of Artificial Organs**
Pascal Verdonck, PhD - Ghent University, Belgium
- 1:45pm **Intelligent Scaffold Design for Functional Tissue Engineering**
Birgit Glasmacher, PhD - Leibniz University of Hannover, Germany
- 2:00pm **Do Drug-Eluting Vascular Prostheses Face the Same Future as DES?**
Beat H Walpoth, MD - University Hospital of Geneva, Switzerland
- 2:15pm **Cell Based Liver Support - From Bench Back to Bedside**
Igor M Sauer, MD - Charité, Berlin, Germany
- 2:30pm **Effects of Hypothermic and Normothermic Machine Perfusion on Organ Function and Organ Viability**
Gerhard Rakhorst, DVM, PhD - University of Groningen, Netherlands
- 2:45pm **Optimization of Peritoneal Dialysis: A Northern Sweden Concept**
Bernd Stegmayr, MD, PhD - University Hospital, Umea, Sweden
- 3:00pm - 3:45pm **VISIT EXHIBITS, POSTERS & ENJOY REFRESHMENTS**
Golden Gate Ballroom - Lobby Level - Bldg 3

3:45pm - 5:15pm

SLIDE SESSION 5 CARDIAC

Continental 6 - Ballroom Level - Bldg 3

Moderators: *Brian Duncan, MD & Peter Wearden, MD, PhD*

3:45pm

A Comparison of Equipment Failure for the HeartMate XVE and HeartMate II LVADs

Corey Bishop, BS - Intermountain Medical Center

(Abstract Journal Page 32)

4:00pm

Goodbye Hemolysis! Experience with Levitronix Centrimag In 33 Newborns, Infants and Children

Julia Reckers, MD - German Pediatric Heart Center Sankt Augustin

(Abstract Journal Page 39)

4:15pm

Computational Fluid Dynamics Analysis of Pulsatile Aortic Flow Supported By Conduit-Mediated Para-Aortic Blood Pump

Pong-Jeu Lu, PhD - National Cheng Kung University

(Abstract Journal Page 24)

4:30pm

Artificial Muscle to Wash Blood Out of Fibrillating Atrium: An Alternative to Lifelong Anticoagulation

Piergiorgio Tozzi, MD - Centre Hospitalier Univ Vaudois

(Abstract Journal Page 24)

4:45pm

Japanese Clinical Trial of Next Generation LVAS EVAHEART

Tomohiro Nishinaka, MD - Tokyo Women's Medical University

(Abstract Journal Page 25)

5:00pm

Temporary Cardiac Support with a Mini-Circuit System Consisting of a Centrifugal Pump and a Membrane Ventilator

Anna Meyer, MD - Hanover Medical School

(Abstract Journal Page 26)

3:45pm - 5:15pm

SLIDE SESSION 6 PULMONARY

Continental 4 - Ballroom Level - Bldg 3

Moderators: *Robert Bartlett, MD &*

3:45pm

A Computational Analysis of Gaseous Distributions in a Hollow Fiber Bundle of an Oxygenator Under Various Blood and Gas Flow Rates

Nobumasa Katagiri, ME - National Cardiovascular Ctr Research Inst

(Abstract Journal Page 60)

4:00pm

APRV In Patients with ARDS and COPD - A Simulation Study

Talal Moukabary, MD - William Beaumont Hospital

(Abstract Journal Page 62)

4:15pm

AVCO₂R-CPAP for Total Gas Exchange to Avoid Intubation and Ventilation Induced Baro/Volume Trauma

Dongfang Wang, MD, PhD - University of Kentucky Medical School

(Abstract Journal Page 63)

4:30pm

Emergency ECMO-Transport: Last Resource for Critical Ill Pediatric Patients

Julia Reckers, MD - German Pediatric Heart Center Sankt Augustin

(Abstract Journal Page 61)

4:45pm

Uneven Flow Pattern within the Affinity® Gas Exchanger

Cherry Croft, PhD - University of Kentucky School of Medicine

(Abstract Journal Page 60)

5:00pm

Performance of a Compact, Low Prime Volume Pediatric Silicone Hollow Fiber Oxygenator

Rebecca Schewe, BS - University of Michigan

(Abstract Journal Page 61)

3:45pm - 5:15pm

SLIDE SESSION 7 BIOENGINEERING

EFFORTS TO ASSESS HEMOCOMPATIBILITY AND TO DEVELOP HEMOCOMPATIBLE DEVICES

Continental 5 - Ballroom Level - Bldg 3

Moderators: *Karen May-Newman, PhD &*

3:45pm

Study of Blood Damage Using a Newly Developed Blood Shearing Device

T Zhang, PhD - University of Maryland Baltimore

(Abstract Journal Page 5)

4:00pm

Evaluation of New Technology: To Reduce Platelet Adhesion and Coverage of Pyrolytic Carbon Surfaces

Mark Slaughter, MD - Advocate Christ Medical Center

(Abstract Journal Page 8)

4:15pm

Drag-Reducing Polymer Solution as a Test Fluid for Evaluation of Blood Trauma in Blood Pumps

Marina Kameneva, PhD - Univ of Pittsburgh

(Abstract Journal Page 13)

4:30pm

Biodegradable Synthetic Small Calibre Vascular Prostheses: Potential as Coronary Bypass Grafts

Beat Walpoth, MD - University Hospital of Geneva

(Abstract Journal Page 16)

Recipient of ASAIO Fellowship

4:45pm

Erythrocyte Concentration Distribution in Sheathed Microfluidic Flows

Christian Aucoin, MS - Columbia University

(Abstract Journal Page 2)

5:00pm

Single Step Modification of a Titanium Alloy Surface to Reduce Thrombotic Deposition

*Sang-Ho Ye, PhD - McGowan Institute for Regenerative Medicine
(Abstract Journal Page 11)*

3:45pm - 5:15pm

LECTURE & SLIDE SESSION 8 RENAL

Continental 2 - Ballroom Level - Bldg 3

Moderators: *Andre Kaplan, MD & William Fissell IV, MD*

3:45pm - 4:15pm

Sorbent Technologies: What We Know and What is Ahead

Victor Gura, MD - Assoc Clinical Prof Med, UCLA

4:15pm

Mid-Dilution Hemodiafiltration (MD-HDF): Clinical and Technical Performance

Luciano Pedrini, MD - Bolognini Hospital

(Abstract Journal Page 67)

Recipient of ASAIO Fellowship

4:30pm

Technical Characterization of Dialysis Fluid Flow and Mass Transfer Rate of Newly-Developed Dialyzers (NDD)

Satoru Kunikata, BS - Waseda University

(Abstract Journal Page 67)

4:45pm

Optimization of Convective Transport: Feedback Systems for On-Line Infusion/Ultrafiltration

Control in Hemodiafiltration (HDF)

Luciano Pedrini, MD - Bolognini Hospital

(Abstract Journal Page 67)

5:00pm

Silicon Nanopore Membranes: Blood-Membrane Interactions and Solute Transport

William Fissell, MD - Assoc Staff Bioeng, Cleveland Clinic

5:15pm - 6:00pm

MODERATED POSTER SESSIONS

5:15pm - 6:00pm

MODERATED POSTER SESSION 1 CARDIAC

Golden Gate Ballroom - Lobby Level - Bldg 3

Moderators:

1 Centrimag as Bridge to Bridge in Cardiogenic Shock Patients - A Last Chance?

Aly El Banayosy, MD - Heart Center NRW

(Abstract Journal Page 37)

2 Renal Function is Improved in End-Stage Heart Failure Patients Undergoing Mechanical Circulatory Support

George Moukarbel, MD - Harvard Medical School

(Abstract Journal Page 39)

3 New Tools and Techniques for Facilitating Off-Pump Insertion of a Left Ventricular Assist Device

William Cohn, MD - Texas Heart Institute

(Abstract Journal Page 39)

4 CircuLite Synergy Micro-Pump System for Partial Circulatory Support

Wolfgang Kerkhoffs, MS - CircuLite GmbH

(Abstract Journal Page 40)

5 Development of a Miniaturized Heart-Lung-Machine for Neonates

Ulrich Steinseifer, PhD - RWTH Aachen

(Abstract Journal Page 46)

6 Gene Transfer of Serca2a Improves Myocardial Contractility in Dilated Failing Heart

Yoshiaki Takewa, MD, PhD - National Cardiovascular Ctr Research Inst

(Abstract Journal Page 50)

7 Acute Electro-Mechanical Effects of LV Unloading During LVAD Support in Heart Failure: Insights into Reverse Remodeling

Carlos del Rio, MS - QTest Labs

(Abstract Journal Page 50)

8 How Long Could We Extend Cardiopulmonary Resuscitation Duration with Assisted Circulation?

Nai-Kuan Chou, MD, PhD - National Taiwan Univ Hospital

(Abstract Journal Page 20)

- 9 **Early Vascular Access Stenosis Detections by Pressure Profile Analysis at Dialysis Needle**
Pascal Verdonck, PhD - Ghent University
(Abstract Journal Page 21)
- 10 **Serial Assessment of Coagulant Activity During One Year After Bioprosthetic Aortic Valve Replacement**
Hiroshi Imagawa, MD - Ehime University
(Abstract Journal Page 24)
- 11 **Thrombosis and Biological Linings on Synthetic Vascular Materials**
Lee Carmack, PhD - Carmack Biomedical Consulting
(Abstract Journal Page 27)
- 12 **High Fidelity Simulator for Cardiopulmonary Bypass**
Richard Tallman, PhD - Midwestern University
(Abstract Journal Page 28)
- 13 **Evaluation and Improvement of Undulation Pump Ventricular Assist Devices Implanted into Goats for More Than 3 Months without Anticoagulant**
Kou Imachi, PhD - Tohoku University
(Abstract Journal Page 31)
- 14 **Reconstructive Surgery for LVAD Infections**
Corey Bishop, BS - Intermountain Medical Center
(Abstract Journal Page 32)
- 15 **Design of a Hybrid Mock Circulatory System for Testing Blood Assist Devices in the Aorta**
Sean Cheng, Bsci - Cambridge Univ
(Abstract Journal Page 34)
- 16 **Mechanical Support of Fontan Circulation: 96-Hour Stability**
Shoichi Tsuda, MD - Stanford University
(Abstract Journal Page 42)
- 17 **In Vitro Evaluation of Zirconia Ceramic in the Dextera Right Ventricular Assist Device Journal Bearing**
Diyar Saeed, MD - Cleveland Clinic
(Abstract Journal Page 23)
- 18 **Human Factors for Wearable Life Support Systems - A State of the Art Example**
Phillip Miller, MS - World Heart Inc
(Abstract Journal Page 33)
- 19 **Dynamic Hydraulic Force Change on a Levitated Impeller of a Maglev Pump**
Toru Masuzawa, PhD - Ibaraki Univ
(Abstract Journal Page 34)
- 20 **Hemocompatibility of a Hydrodynamically-Levitated Centrifugal Pump**
Takashi Yamane, PhD - National Inst of Advanced Industrial Sciences
(Abstract Journal Page 34)
- 21 **Measurement of Aortic Valve Leaflet Strain During LVAD Use**
Luz Enriquez, MS - San Diego State Univ
(Abstract Journal Page 35)
- 22 **Surgical Strategy for Prosthetic Valve Endocarditis**
Makoto Hanai, MD - Jikei Univ School of Medicine
(Abstract Journal Page 35)
- 23 **A Comparison of Lagrangian and Eulerian Methodologies for Calculating Hemolysis**
Marc Horner, PhD - ANSYS, Inc
(Abstract Journal Page 37)
- 24 **Comparison of Non-Invasive Parameter Estimation Techniques for Magnetically Levitated LVAD**
Aditi Khare, MS - Rochester Inst of Technology
(Abstract Journal Page 37)
- 25 **Does the Application of Electrical Microcurrent Heal Heart Failure by Down Regulation of the Pro-Inflammatory Cytokines? First Pre-Clinical In Vivo Results**
Johannes Mueller, MD, MEng - Berlin Heart
(Abstract Journal Page 38)
- 26 **Assessing Platelet Activation During In Vitro Testing of Medical Devices: Comparison of Two Commonly Used Markers, CD62P and PAC1, By Flow Cytometry**
Qijin Lu, PhD - US Food & Drug Administration
(Abstract Journal Page 38)

5:15pm - 6:00pm

MODERATED POSTER SESSION 2 TISSUE ENGINEERING

Golden Gate Ballroom - Lobby Level - Bldg 3

Moderators:

- 27 **Application of In Situ Tissue Engineering for Artificial Trachea**
Tatsuo Nakamura, MD, PhD - Inst for Frontier Medical Sciences
(Abstract Journal Page 15)
- 28 **New Technique to Create a Biodegradable Self-Assembly Cellular Sheet Scaffold Using Ion-Beam Irradiation**
Yoichi Sugita, MD, PhD - Baylor College of Medicine
(Abstract Journal Page 14)
- Recipient of ASAIO Fellowship**
- 29 **Cytokine Hemoadsorption Dynamics Using Confocal Laser Scanning Microscopy**
Jeremy Kimmel, MS - University of Pittsburgh
(Abstract Journal Page 7)
- 30 **Optimization of NANO-Micro Fibrous Scaffold Oriented for Hybrid Artificial Organs**
Toshiyuki Yaguchi, MS - Tokyo Denki University
(Abstract Journal Page 11)
- 31 **Ultrastructural Changes in Cryopreserved Tracheal Grafts of SD Rat**
Yu Liu, MD - Fudan University
(Abstract Journal Page 19)
- 32 **Preparation of Epithese Using Stereo-Lithography**
Tomoko Sugawara, BS - Toin University of Yokohama
(Abstract Journal Page 3)
- 33 **Computational Design of Artificial Organs**
Pascal Verdonck, Prof - Inst Biomedical Technology
(Abstract Journal Page 19)
- 34 **Study on Structure of Small-Caliber Vascular Graft which Oriented to Promote Endothelialization**
Toshiyuki Yaguchi, MS - Tokyo Denki University
(Abstract Journal Page 10)
- 35 **Fundamental Study on Construction System of 3-Dimensional Scaffold Using Electrospinning**
Kazuhiro Nonaka, MS - Tokyo Denki University
(Abstract Journal Page 16)

5:15pm - 6:00pm

MODERATED POSTER SESSION 3 RENAL

Golden Gate Ballroom - Lobby Level - Bldg 3

Moderators:

- 36 **Temporal Evolution of Cardiovascular and Inflammatory Indices in Chronic Hemodialysis Patients in Relationship to Mortality**
P Kotanko, MD - RRI
(Abstract Journal Page 65)
- 37 **Effect of Hematocrit on Solute Clearance - A Simulation Study**
Abhishek Swami, MD - William Beaumont Hospital
(Abstract Journal Page 65)
- 38 **Removal of P-Cresol During Dialysis Occurs During the First Hour of Treatment: An Experimental Study**
Eden Rambod, ST - Israel Inst of Technology
(Abstract Journal Page 65)
- 40 **Forearm Wearable Artificial Kidney Prototype Achieves Dialysate Pressure Amplification for Ureae and Adsorbents Cartridge Perfusion**
Arnold Lande, MD - Univ of Kentucky
(Abstract Journal Page 66)
- 41 **Improved Patency and Infection Rates in Arterio-Venous Prosthetic Graft for Hemodialysis Vascular Access**
Shingo Ichiba, MD, PhD - Okayama University of Science
(Abstract Journal Page 67)
- Recipient of ASAIO Fellowship**
- 42 **Surface Properties of Dialysis Membranes and Their Effects on Biocompatibility**
Koki Namekawa, BS - Waseda Univ
(Abstract Journal Page 64)
- 43 **Glucose Microsensor for Prospective Graft Viability Testing**
Daniel Pesantez, MS - State University at Albany
(Abstract Journal Page 11)

Thursday June 19, 2008

5:15pm - 6:00pm

MODERATED POSTER SESSION 4 RENAL & HEPATIC

Golden Gate Ballroom - Lobby Level - Bldg 3

Moderators:

- 44 Early Detection of Vascular Access Dysfunction Based on Wavelet Transform Analysis of Shunt Murmurs
Ayako Murakami, MEng - Toin Univ of Yokohama
(Abstract Journal Page 1)
- 45 Biocompatibility Evaluation of Hemocor HPH® Hemoconcentrator: Effects on RBC, Platelets and Plasma Protein/Free Hemoglobin Clearance Ex Vivo
Jan Simoni, DVM, PhD - Texas Tech Univ Health Sciences Ctr
(Abstract Journal Page 18)
- 46 Molecular Adsorbent Recycling System as Predictive Criteria of Survival in Patients with Acute Liver Failure
G Novelli, MD - La Sapienza Univ
(Abstract Journal Page 1)
- 47 Expression and Induction of Cytochrome P450 Activity in Cryopreserved Porcine Hepatocytes
Raffaele Cursio, MD, PhD - Univ de Nice
(Abstract Journal Page 13)
- 48 Peritoneal Implantation of Cryopreserved Encapsulated Porcine Hepatocytes in Rats without Immunosuppression: Viability and Function
Raffaele Cursio, MD, PhD - Univ de Nice
(Abstract Journal Page 13)
- 49 Thermodynamics of Solid Sorption for Acute Liver Failure
John Patzer II, PhD - Univ of Pittsburgh
(Abstract Journal Page 8)
- 50 Characterization of PICM-19H Porcine Liver Stem Cell Line for Potential Use in a Bioartificial Liver
R Willard, BS - USDA
(Abstract Journal Page 9)
- 51 How to Improve Bioartificial Liver (BAL) System for Clinical Trials?
Sung-Soo Park, MD, PhD - HepaHope Inc
(Abstract Journal Page 8)
- 52 Early Clinical Assessment of Ported Vascular Access System (PVAS) Exit Site Healing
Kelly Chapman, BSBME - DermaPort
(Abstract Journal Page 7)

7:00pm

WELCOME RECEPTION

Continental 4 - 6 Ballroom Level - Bldg 3

Friday June 20, 2008

8:00 AM - 12:00 PM

GENERAL SESSION 2

Continental 4 & 5 - Ballroom Level - Bldg 3

Moderators: *Wayne Richenbacher, MD & William Holman, MD*

8:00 AM - 9:30 AM

CARDIAC SYMPOSIUM

Temporary Elastic Support for the Ventricular Wall Post-Infarct: Altering Remodeling

William Wagner, PhD - Prof Surg, Univ of Pittsburgh

Cardiac TE Step 1: Using Nature's Platform to Engineer a Bioartificial Heart

Doris Taylor, PhD - Dir Ctr CV Repair & Prof, Univ of Minnesota

Cardiac Cell Sheet Engineering for Regenerative Medicine

Masayuki Yamato, PhD - Assoc Prof Bioeng, Tokyo Women's Medical Univ

9:30am - 10:00am

KEYNOTE ADDRESS

Industrial Opportunities and Challenges in Commercializing Tissue Regeneration Products

Scott Bruder - MD, PhD - Senior VP & CTO, Becton Dickinson & Co



10:00am - 10:45am

VISIT EXHIBITS, POSTERS & ENJOY REFRESHMENTS

Golden Gate Ballroom - Lobby Level - Bldg 3

10:45 am - 11:00 am

FDA'S CRITICAL PATH INITIATIVE: SCIENTIFIC TOOLS TO ASSIST NEW PRODUCT DEVELOPMENT

Richard Malinauskas, PhD - Biomed Engineer, FDA

- 11:00am - 12:00pm **ASAIO MIT SLOAN SCHOOL OF MANAGEMENT - NEW VENTURE FORUM**
Review Panel
Adam Tomasi, PhD - Alta Partners
David Humes, MD & Kurt Dasse, PhD
Sonna Patel, PhD & Mikhail Shapiro
Andrew Koert, BSME & Susan Zawaski, PhD
- A Unique Business Model - Regenerative Medicine Redefined**
Gail Naughton, PhD - San Diego State University
(Abstract Journal Page 5)
- Expanding the Organ Donor Pool**
Ernest Green, MS - Breonics Inc
(Abstract Journal Page 66)
- Off-Pump Placement of Artificial Chordae Tendinae with an Innovative Instrument To Correct Mitral Insufficiency**
Richard Daly, MD - Mayo Clinic
(Abstract Journal Page 46)
- 12:00pm - 1:15pm **WORKING LUNCHEON 6 - Admission by ticket only, no standing room**
 Continental 9 - Ballroom Level - Bldg 3
Commercialization
Paul Spence, MD - President, SCR Inc
- 12:00pm - 1:15pm **WORKING LUNCHEON 7 - Admission by ticket only, no standing room**
 Powell Room - 6th Fl, Bldg 3
Vascular Access: Emerging Methods for Pre-Operative Evaluation
William Weitzel, MD - Assoc Prof Int Med, Univ of Michigan
- 12:00pm - 1:15pm **WORKING LUNCHEON 8 - Admission by ticket only, no standing room**
 Continental 1 - Ballroom Level - Bldg 3
Advances in Robotic Surgery Techniques
Tomislav Mihaljevic, MD - CV Surgeon, Cleveland Clinic
- 12:00pm - 1:15pm **WORKING LUNCHEON 9 - Admission by ticket only, no standing room**
 Continental 8 - Ballroom Level - Bldg 3
Device Performance Standards & Reliability
James Lee, MD - Dir Engineering, WorldHeart
Sonna Patel, PhD - Biomedical Engineer, FDA
Kevin Bourque, MSME - Sr Dir R & D, Thoratec Corp
- 1:30pm - 3:00pm **SLIDE SESSION 9 CARDIAC**
 Continental 5 - Ballroom Level - Bldg 3
 Moderators: *Steven Conrad, MD, PhD &*
- 1:30pm **The Impact of Partial Circulatory Support on the Strain Distribution on the Post-Infarction Left Ventricular Wall**
K Savai, MS - Univ of Maryland Baltimore
(Abstract Journal Page 30)
- 1:45pm **Survival After Removal of Pulsatile LVAD for Device Complications**
Igor Gregoric, MD - Texas Heart Institute
(Abstract Journal Page 32)
- 2:00pm **Removal of the HeartMate II Left Ventricular Assist Device Following Clinical Ventricular Recovery**
O Howard Frazier, MD - Texas Heart Inst
(Abstract Journal Page 36)
- 2:15pm **Prediction of Survival in Patients with Cardiogenic Shock and Multiorgan Failure Treated with Biventricular Assist Devices or the Total Artificial Heart**
Evgenij Potapov, MD - Detsches Herzzentrum Berlin
(Abstract Journal Page 53)
- 2:30pm **Microemboli Detection and Classification During Simulated Neonatal CPB**
Akif Undar, PhD - Penn State Children's Hospital
(Abstract Journal Page 20)
- 2:45pm **An Evaluation of the Eight Different 10 FR. Pediatric Arterial Cannulae Under Pulsatile vs Non-Pulsatile Perfusion**
Akif Undar, PhD - Penn State Children's Hospital
(Abstract Journal Page 21)

1:30pm - 3:00pm

SLIDE SESSION 10 CARDIAC

Continental 6 - Ballroom Level - Bldg 3

Moderators: Gregory Couper, MD &

1:30pm

HMGB1 Elevation in VAD Patients

Trevor Snyder, PhD - Univ of Maryland School of Medicine
(Abstract Journal Page 30)

1:45pm

In Vitro Hemolysis Study in a Pulsatile VAD: The Effect of Filling Volume and Rate

Branka Lukic, MS - Penn State College of Medicine
(Abstract Journal Page 43)

2:00pm

HeartMate XVE Device End-Of-Life: Results of XVE to HMII Device Exchange

Mark Slaughter, MD - Advocate Christ Medical Center
(Abstract Journal Page 52)

2:15pm

Evaluation of Acoustic Signatures for Hemodynamic Management of Flow Rates in HeartMate II LVAD

Mark Slaughter, MD - Advocate Christ Medical Center
(Abstract Journal Page 56)

2:30pm

Design Concepts of the HeartWare® Left Ventricular Assist Device

Jeffrey LaRose, MS - HeartWare Inc
(Abstract Journal Page 52)

2:45pm

Assessing Metabolic Thresholds for Cardiac Instability During Off-Pump Cardiac Surgery

Daniel Eiferman, MD - Rush Univ Medical Center
(Abstract Journal Page 21)

1:30pm - 3:00pm

SLIDE SESSION 11 BIOENGINEERING

Continental 2 - Ballroom Level - Bldg 3

Moderators: William Wagner, PhD & Carl Johnson, BS

1:30pm

Recipient of the Young Innovator Fellowship by LWW

A Portable System for Management of Hypothermia on the Battlefield

Brijesh Gill, MD - Univ of Texas Health Center in Houston
(Abstract Journal Page 18)

1:45pm

"Smart" Bioprosthesis for Cardiovascular Applications

Christiano Spadaccio, MD - Univ of Pittsburgh
(Abstract Journal Page 11)

2:00pm

Partial Glutaraldehyde Cross-Linking and Polymer Impregnation of Decellularized Bovine Pericardium

Adolfo Leimer, MD, PhD - University of São
(Abstract Journal Page 12)

2:15pm

Hematological Studies of Ventricular Assist Devices

C Siedlecki, PhD - Pennsylvania State Univ College of Medicine
(Abstract Journal Page 44)

2:30pm

Recipient of ASAIJ Fellowship

A Localizable, Biological-Based Delivery System for IGF-1 Using Microencapsulated Genetically Modified Human Fibroblasts

Roshni Patel, MS - Brown University
(Abstract Journal Page 17)

2:45pm

A Computational Methodology for Stent-Leaflet Interactions in Minimally-Invasive Heart Valves

Nikoo Saber, PhD - Children's Hospital Los Angeles
(Abstract Journal Page 3)

1:30pm - 3:00pm

PRESENTATION OF TOP ASAIOfyi ABSTRACTS

Continental 3 - Ballroom Level - Bldg 3

Moderators: Steven Day, PhD & Luke Herbertson, BS

1:30pm

Fluid Dynamics of Pulsatile Blood Flow

Scott Corbett, MS - Abiomed Inc
(Abstract Journal Page 14)

1:45pm

Cardiac Arrest After Methylprednisolone Pulse Therapy Rescued by Extracorporeal Membrane Oxygenation in Patients with Acute Cardiac Rejection

Meng-Lin Lee, MD - National Taiwan Univ Hospital
(Abstract Journal Page 23)

2:00pm

Design Optimization and in Animal Test of an Axial Blood Pump

Yan Zhang, MD - Fu Wai Hospital & Cardiovascular Inst
(Abstract Journal Page 20)

2:15pm

A Mechanical Simulator of Cardiac Wall Kinematics

Elena Cutri, MS - Politecnico di Milano
(Abstract Journal Page 26)

2:30pm

Three Dimensional Flow Patterns within the Penn State Pediatric Ventricular Assist Device

Breigh Roszelle, BS - Pennsylvania State Univ
(Abstract Journal Page 15)

2:45pm

BMI Does Not Effect Outcomes in Destination Therapy LVAD

*Mani Daneshmand, MD - Duke University
(Abstract Journal Page 42)*

3:00pm - 3:45pm

VISIT EXHIBITS, POSTERS & ENJOY REFRESHMENTS

Golden Gate Ballroom - Lobby Level - Bldg 3

3:45pm - 5:15pm

LUNG RESPIRATION INNOVATION SESSION

Continental 4 - Ballroom Level - Bldg 3

Moderators: Keith Cook, PhD &

Respiratory Assist Devices for the Pulmonary Intensivist

William Federspiel, PhD - Prof Chem Eng, Surg & Bioeng, McGowan Inst of Regenerative Med

Clinical Application of the NovaLung ILAD

Shaf Keshavjee, MD - Prof & Chair Thoracic Surgery, Univ of Toronto

Clinical Requirements of a Bridge to Lung Transplantation

Charles Hoopes, MD - Assoc Prof Surg, UCSF

3:45pm - 5:15pm

CARDIAC INNOVATION SESSION

Continental 1 - Ballroom Level - Bldg 3

Moderator: Mark Slaughter, MD

Pediatric Circulatory Support

Timothy Baldwin, PhD - Program Dir CV Disease, NHLBI

Percutaneous Technologies for Treatment of Aortic Disease

Himanshu Patel, MD - Asst Prof Surgery, Univ of Michigan

Percutaneous Valve Technology (*speaker to be announced*)

3:45pm - 5:15pm

BIENGINEERING INNOVATION SESSION - NEW VENTURE FORUM PART II

Continental 6 - Ballroom Level - Bldg 3

Moderators: Kurt Dasse, PhD, Andrew Koert, BSME & Susan Zawaski, PhD

Thin Film Nitinol Approaches to Cardiovascular Interventions

Daniel Levi, MD - Prof Pediatrics, UCLA

Review Panel

Adam Tomasi, PhD - Alta Partners

David Humes, MD & Kurt Dasse, PhD

Sonna Patel, PhD & Mikhail Shapiro

Andrew Koert, BSME & Susan Zawaski, PhD

"MiniMixedFlow" (M2F) Blood Pump

William Smith, DE, PE - Lerner Research Institute

InVivo Therapeutics (Combination Polymer Scaffold and Stem Cell Device for the Treatment of Traumatic Spinal Cord Injury)

Frank Reynolds - InVivo Therapeutics Corporation

Gecko BioMedical: Nature Inspired

Jonathan Edward, ME - MIT

3:45pm - 5:15pm

RENAL INNOVATION SESSION

LIMITATIONS AND OPPORTUNITIES IN HOME HEMODIALYSIS

Continental 5 - Ballroom Level - Bldg 3

Moderators: Edward Leonard, PhD &

CMS: Reimbursement & Costs for Home Hemodialysis

Kathleen Smith, RN, BS, CNN - VP Fresenius

Allient Sorbent Based Dialysis

Mark Rohrscheib, MD - Nephrologist, DCI Albuquerque

NXStage Technologies

John Moran, MD, FRACP - Sr VP Clinical Affairs, Satellite Healthcare

5:15pm - 6:00pm

MODERATED POSTER SESSION 5 CARDIAC

Golden Gate Ballroom - Lobby Level Bldg 3

Moderators:

- 53 Adjusting Mechanical Properties of Electrospun Polyurethane Grafts
Heinrich Schima, DR - Medical Univ of Vienna
(Abstract Journal Page 15)
Recipient of ASAIO Fellowship
- 54 Anatomic Database for Insertion of VADs in Infants and Young Children
Arielle Drummond, MS - Carnegie Mellon Univ
(Abstract Journal Page 9)
- 55 Primary Non-Function: Timing Re-Transplant Versus Hemodynamic Parameters and Kidney Function with Albumin Dialysis
G Novelli, MD - La Sapienza Univ
(Abstract Journal Page 1)
- 56 In-Vivo Evaluation of Conformal Pediatric Ventricular Cannula
Arielle Drummond, MS - Carnegie Mellon Univ
(Abstract Journal Page 9)
- 57 Performance of Bioprosthetic Valves After Glycerol Dehydration, Ethylene Oxide Sterilization, and Rehydration
Hideyuki Fumoto, MD - Lerner Research Inst
(Abstract Journal Page 12)
- 58 Computational Flow and Blood Damage Modeling of the Ultramag™ Blood Pump
ME Taskin, PhD - Univ of Maryland School of Medicine
(Abstract Journal Page 6)
- 59 Blood Parameter Assessment in Sham and Pediaflow™ VAD Implanted Sheep
Amanda Daly, BS - Univ of Pittsburgh
(Abstract Journal Page 7)
- 60 Hemodynamic Evaluation of the HeartMate II with a Controlled Mock Circulation
MCM Rutten, PhD - Eindhoven Univ of Technology
(Abstract Journal Page 12)
- 61 Flow Visualization of Bileaflet Mechanical Heart Valves in a Pneumatic Ventricular Assist Device
Hwangsung Lee, PhD - National Cardiovascular Center
(Abstract Journal Page 1)
- 62 Numerical Model of the Univentricular Fontan with Pediatric Mechanical Cavopulmonary Assist
Amy Throckmorton, PhD - Virginia Commonwealth Univ
(Abstract Journal Page 2)
- 63 Hydraulic Contractile Element for Muscle-Powered Circulatory Support
Dennis Trumble, MS - Allegheny General Hospital
(Abstract Journal Page 14)
- 64 The 12cc Penn State Pediatric Ventricular Assist Device: Impact of Valve Orientation on Fluid Dynamics
Isabella Valenti, BS - Pennsylvania State Univ
(Abstract Journal Page 15)
- 65 Patient-Specific Optimization of Hemodynamics During MCS
MCM Rutten, PhD - Eindhoven Univ of Technology
(Abstract Journal Page 10)
- 66 A Hematocrit Comparison of Pediatric VAD Cannulae Using Particle Image Velocimetry
Tobias Long, BS - Pennsylvania State Univ
(Abstract Journal Page 14)
- 67 Development of a Chronic Perivascular Pressure Sensor: Preliminary Results
Guruprasad Giridharan, PhD - Univ of Louisville
(Abstract Journal Page 10)
- 68 A Physical Model Investigation of Cavitation Phenomena in Mechanical Heart Valves
Chi Wen Lo, MS - Tamkang Univ
(Abstract Journal Page 17)
- 69 An Object Oriented Modeling Framework for the Arterial Wall
Manuel Balaguera, DEng - Pontificia Univ Javeriana
(Abstract Journal Page 18)
- 70 Alginate Prolongs Microhemodynamics During Small Volume Resuscitation From Hemorrhagic Shock
Pedro Cabrales, PhD - La Jolla Bioengineering Inst
(Abstract Journal Page 7)
- 71 Effects of Mechanism for Mechanical Heart Valve on Flow Behavior Inside the Pulsatile Blood Pump
Eiki Akagawa, PhD - National Cardiovascular Ctr Research Inst
(Abstract Journal Page 16)
- 72 Self Sensing Magnetic Suspension for the LifeFlow Axial Flow Heart Pump
Alexandrina Untaroiu, PhD - University of Virginia
(Abstract Journal Page 28)

5:15pm - 6:00pm

MODERATED POSTER SESSION 6 CARDIAC

Golden Gate Ballroom - Lobby Level - Bldg 3

Moderators:

- 73 **Acute Hemodynamic Efficacy of a 32-ml Counterpulsation Device During Pharmacologically Induced Hypotension, Hypertension and Heart Failure in Calves**
Paul Spence, MD - SCR Inc
(Abstract Journal Page 29)
- 74 **WorldHeart Levacor™ VAD: Clinical Readiness for US Trial**
Gill Bearson, PhD - WorldHeart Inc
(Abstract Journal Page 38)
- 75 **Extracorporeal Membrane Oxygenation with Ventricular Assist Devices as Double Bridge to Heart Transplantation**
Nai-Kuan Chou, MD, PhD - National Taiwan Univ Hospital
(Abstract Journal Page 23)
- 76 **Evaluation of Computational Model for High Shear Thrombogenesis**
Carlos Cheek, MS - Rochester Inst of Technology
(Abstract Journal Page 28)
- 77 **Validation of Computational Fluid Dynamic Techniques Used to Evaluate Medical Devices: An FDA Critical Path Initiative**
Richard Malinauskas, PhD - US Food & Drug Administration
(Abstract Journal Page 40)
- 78 **Integrated Multi-Platform Remote Monitoring**
Hong Zhang, PhD - RABIOMED Inc
(Abstract Journal Page 31)
- 79 **Evaluation of a New Hybrid Magnetic Bearing for the Bivacor BI-VAD/TAH**
Eisuke Sasaki, BS - Ibaraki University
(Abstract Journal Page 31)
- 80 **Diastolic Augmentation During Direct Mechanical Cardiac Actuation**
Subbaraju Budharaju, MD - Wright State University
(Abstract Journal Page 32)
- 81 **Towards the Development of the 2nd Generation (GEN2) PediaFlow™ Pediatric VAD**
Josiah Verkaik, BS - LaunchPoint Technologies LLC
(Abstract Journal Page 33)
- 82 **Successful TandemHeart® LVAD Conversion to RVAD During HeartMate® LVAD Implantation**
Masami Takagaki, MD - Northwestern Memorial Hospital
(Abstract Journal Page 41)
- 83 **In Vitro and In Vivo Testing of the PediaFlow™ Pediatric VAD**
Peter Wearden, MD, PhD - Children's Hospital of Pittsburgh
(Abstract Journal Page 41)
- 84 **Pediatric Extracardiac Support - Results with a Single Ventricle Animal Model**
Mino Kavarana, MD - Univ of Louisville
(Abstract Journal Page 42)
- 85 **Adaptive Physiological Speed/Flow Control of Rotary LVADs for Various Activity Levels in Permanent Implantation**
Yi Wu, PhD - Penn State Erie
(Abstract Journal Page 42)
- 86 **Cannula Development of the CircuLite Synergy Micro-Pump System for Partial Circulatory Support**
Oliver Marseille, PhD - CircuLite
(Abstract Journal Page 44)
- 87 **Durability of Diamond-Like Carbon Coatings for Rotary Blood Pump Applications**
Andrew Hunsberger, MS - Mohawk Innovative Technology Inc
(Abstract Journal Page 48)
- 88 **Non-Invasive Continuous Blood Pressure and Ventricular Function Assessment During Axial Flow LVAD Support Using the Nexfin HD Monitor**
JR Martina, Msc - Eindhoven Univ of Technology
(Abstract Journal Page 49)
- 89 **Long-Term Support by Left Ventricular Assist System**
Takeshi Nakatani, MD - National Cardiovascular Center
(Abstract Journal Page 49)
- 90 **Contrast Pericardiography Improves Visualization During Limited Access Fluoroscopic Placement of External Cardiac Support Devices**
JoAnna Winkler, BS - Texas Heart Inst
(Abstract Journal Page 52)

- 91 **Thrombosis and Restenosis in Percutaneous Coronary Intervention. Is there a Link Between these Two Events?**
Jan Simoni, DVM, PhD - Texas Tech Univ
(Abstract Journal Page 54)
- 92 **Mean Arterial Pressure vs Pulseco for Optimization of Resynchronization**
Ashley Whyte, BA - Columbia University
(Abstract Journal Page 55)
- 93 **Connector for Distal Coronary Anastomosis with a Novel Sleeve Design**
Liang Zhong, PhD - National Heart Center
(Abstract Journal Page 21)
- 94 **Status of the Magnetically Levitated MiTi Heart® LVAD**
Zhaohui Ren, PhD - Mohawk Innovative Technology Inc
(Abstract Journal Page 22)
- 95 **Experimental Study of the Hemolytic Effects of Vicous Stresses Induced by the Dissipation of Turbulent Energy**
Thomas Fountain, MS - Rochester Inst of Technology
(Abstract Journal Page 40)
- 96 **HITMAC VAD: Successful Conversion to a Clinical System**
Tadashi Motomura, MD, PhD - Baylor College of Medicine
(Abstract Journal Page 43)
- 97 **New Drive Concept for the Aachen Total Artificial Heart "ACcor"**
Thomas Finocchiaro, Dipl-Ing - Helmholtz Inst
(Abstract Journal Page 43)
- 98 **Flow Visualization Study of WorldHeart Levacor™ VAD Under Synchronous Pulsatile Conditions**
James Antaki, PhD - Carnegie Mellon Univ
(Abstract Journal Page 44)
- 99 **Helical Contraction: An Efficient Mean for Pulsatile Ventricular Assist Devices**
Anna Grosberg, BEng - California Inst of Technology
(Abstract Journal Page 44)
- 100 **Ab Portable Driver Console Home Discharge Trial Design**
Robert Kung, PhD - Abiomed Inc
(Abstract Journal Page 45)
- 101 **The PediPump: A Versatile, Implantable Pediatric Ventricular Assist Device - Update IV**
Stephan Weber, Dipl-Ing - Cleveland Clinic
(Abstract Journal Page 46)
- 102 **Flow Performance Modeling of LifeFlow Cardiac Assist Device**
Alexandrina Untaroiu, PhD - Univ of Virginia
(Abstract Journal Page 46)
- 103 **Estimation of Cardiac Function with VAD Based on Estimated Flow**
Telma Sugai, MRS - Tohoku Univ
(Abstract Journal Page 47)
- 104 **Unified Transcutaneous Transformer for Energy and Information Transmissions - Investigation of Transmission Characteristics of the Transformer Covered with Skin Phantom**
Nozomi Tamura, BS - Tokyo Univ of Science
(Abstract Journal Page 47)
- 105 **HeartMate II and Quality of Life: Electrostatic Discharge and Precautions at Work**
Ben Rodermans, MR - Univ Medical Center
(Abstract Journal Page 48)
- 106 **Electromagnetic Compatibility of Externally - Coupled Transcutaneous Energy Transmission System for a Totally-Implantable Artificial Heart - Characteristics of the Energy Transmission Using Magnetically-Shielded Transcutaneous Transformer**
Takahiko Yamamoto, MS - Tokyo Univ of Science
(Abstract Journal Page 48)
- 107 **Validation of a Computational Fluid Dynamics Model for the Cleveland Clinic DexAide Right Ventricular Assist Device**
Mark Goodin, MS, ME - Frantz Medical Development Ltd
(Abstract Journal Page 41)

6:15am - 7:00pm

ASAIO MEMBER'S BUSINESS MEETING
 Continental 4 - Ballroom Level - Bldg 3

8:00 AM - 12:00 PM

GENERAL SESSION

Continental 4 & 5 - Ballroom Level - Bldg 3
Moderators: *William Wagner, PhD & Kurt Dasse, PhD*

8:00 AM - 9:30 AM

NEUROSCIENCE INNOVATION SESSION

SYMPOSIUM THERAPEUTIC NEUROSTIMULATION: NEW CLINICAL OPPORTUNITIES

Neurostimulation and the Emergence of Interventional Neurology
Jason Harry, PhD - Executive VP & CTO, Afferent Corp

The Background & Opportunity of Gastric Neurostimulation to Impact Obesity
Abhi Vase - Leptos Biomedical

Deep Brain Stimulation
Mark Rise, PhD - Distinguished Scientist, Medtronic Inc

Deep Brain Stimulation
Paul Larson, MD - Asst Clinical Prof Neuro Surg, UCSF

9:30am - 10:00am

KEYNOTE ADDRESS

New Approaches to Organ Replacement Technologies
David Humes, MD - Prof Int Med, Univ of Michigan



10:00am - 10:30am

PLENARY LECTURE

Silicon Nanotechnology & Adult Stem Cells: Enabling An Implantable Bioartificial Kidney
Shuvo Roy, PhD - Co-Dir BioMEMS, Cleveland Clinic

10:30am - 11:30am

VISIT EXHIBITS, POSTERS & ENJOY REFRESHMENTS

Golden Gate Ballroom - Lobby Level - Bldg 3

10:30am - 11:30am

MODERATED POSTER SESSION 7 PULMONARY

Golden Gate Ballroom - Lobby Level

Moderators:

108 **A Numerical Model of Oxygen Transfer in Hollow Fiber Oxygenators**

*Marcus Hormes, Dipl-Ing - Helmholtz Institute
(Abstract Journal Page 63)*

109 **A Novel Method for Identifying Adjacent Lung Segments with Infrared Thoracoscopy**

*Noriyuki Misaki, MD - Kagawa University
(Abstract Journal Page 59)*

110 **Characterization of Hollow Fiber Membrane Bundles in Benchmark Test**

*T Zhang, PhD - Univ of Maryland Baltimore
(Abstract Journal Page 60)*

111 **A Novel Method to Investigate Blood Retention Time Distribution (RTD) Inside a Hollow Fiber Oxygenator (HFO)**

*Ali Kashfi, Dr-Ing - RWTH Aachen
(Abstract Journal Page 62)*

10:30am - 11:30am

MODERATED POSTER SESSION 8 PULMONARY & PANCREATIC

Golden Gate Ballroom - Lobby Level - Bldg 3

Moderators:

112 **Oxygen Delivery By Hemoglobin Solutions: The Balance Between Vasoconstriction and Enhanced Oxygen Delivery**

*Pedro Cabrales, PhD - La Jolla Bioengineering Institute
(Abstract Journal Page 6)*

113 **Tissue Oxygen State with High Oxygen Affinity Hemoglobin Solutions**

*Pedro Cabrales, PhD - La Jolla Bioengineering Institute
(Abstract Journal Page 6)*

114 **Preparation and Evaluation of Perfluorocarbon Based Oxygen Carriers: Effect of Emulsion Viscosity, Osmolality and PFC Concentration**

*Juan Briceno, PhD - University of Los Andes
(Abstract Journal Page 18)*

10:30am - 11:30am

MODERATED POSTER SESSION 9 BUSINESS PLANS

Golden Gate Ballroom - Lobby Level - Bldg 3

Moderators:

- 115 The Financing of HeartMate Technology
Victor Poirier, MBA - Thoratec Inc
(Abstract Journal Page 58)
- 116 Lessons Learned in Starting Left Ventricular Assist Programs in Developing Countries
Lyle Joyce, MD, PhD - University of Minnesota
(Abstract Journal Page 51)

10:30am - 11:30am

MODERATED POSTER SESSION 10 CARDIAC

Golden Gate Ballroom - Lobby Level - Bldg 3

Moderators:

- 117 Median Sternotomy Approach for Chronic Bovine Experiments
Diyar Saeed, MD - Cleveland Clinic
(Abstract Journal Page 22)
- 118 In Vivo Evaluation of Zirconia Ceramic in the Dekaide Right Ventricular Assist Device Journal Bearing
Diyar Saeed, MD - Cleveland Clinic
(Abstract Journal Page 22)
- 119 Drag Reducing Polymer Eliminates Platelet Margination in Microchannel
Rui Zhao, MS - Carnegie Mellon Univ
(Abstract Journal Page 23)
- 120 Does Coronary Artery Bypass Surgery Effect for Chronic Total Occlusion of Coronary Artery? Evaluation of Left Anterior Descending Artery
Shigeki Ito, DR - Nishitokyo Central General Hospital
(Abstract Journal Page 24)
- 121 The Washout Flow Around an Inflow Cannula of a Left Ventricular Assist Device is Increased by the Adjusted Pump Driving Condition
Takashi Nishimura, MD, PhD - Tokyo Univ Hospital
(Abstract Journal Page 25)
- 122 Trouble Simulating Device with Wireless Control for Extracorporeal Circulation Crisis Management Drills
Yasuko Tomizawa, MD - Tokyo Women's Medical Univ
(Abstract Journal Page 25)
- 123 Development of a Compact Wearable P-VAD Drive Unit
A Homma, PhD - National Cardiovascular Center
(Abstract Journal Page 25)
- 124 Destination Therapy: Long Term Outcomes in Patients with BMI Greater Than 30
Mark Slaughter, MD - Advocate Christ Medical Center
(Abstract Journal Page 26)
- 125 Optimization of Abioco II Anatomical Fit
Scott Corbett, MS - Abiomed Inc
(Abstract Journal Page 26)
- 126 Evaluation of Pump Control Based on Dynamic Property on Native Heart
Akira Tanaka, DR - Fukushima Univ
(Abstract Journal Page 27)
- 127 Unobstructed Single Flow Path Axial Flow LEV-VAD
Steven Day, PhD - RIT
(Abstract Journal Page 29)
- 128 Post Heart Transplant Long-Term Survival of Discharged vs Hospitalized LVAD Recipients
Igor Gregoric, MD - Texas Heart Inst
(Abstract Journal Page 33)
- 129 Mechanics of IAB Inflation: The Combined Effect of Pressure and Posture
Ashraf Khir, PhD - Brunel University
(Abstract Journal Page 34)
- 130 Non-Invasive Electromagnetic Field (EMF) Exposure During Ischemic Injury Leads to Improved Myocardial Function Through Upregulation of HSP70 Pathway
Sang Woo Pak - Columbia University
(Abstract Journal Page 35)
- 131 Long-Term Circulatory Support with LVAD and Cell Activation
Rajko Radovancevic, MD - Texas Heart Inst
(Abstract Journal Page 36)

- 132 **A Novel, Non-Invasive Continuous Cardiac Output Monitoring Device: Flowave 1000**
Roberta Bogaev, MD - Texas Heart Inst
(Abstract Journal Page 37)
- 133 **Assessment of Intra-Aortic Balloon Deflation in Patients Using Wave Intensity Analysis**
C Kolyva, PhD - Brunel Univ
(Abstract Journal Page 39)
- 134 **Off-Line Automatic Plasma Purifier for Exchange Transfusion (Off-Lappet) System**
Hiroshi Miyamoto, PhD - Baylor College of Medicine
(Abstract Journal Page 40)
- 135 **Geometry Optimization of the Aachen Total Artificial Heart "ACcor"**
Marco Laumen, Dipl-Ing - Helmholtz Inst Aachen
(Abstract Journal Page 41)
- 136 **A Neonatal Heart Failure Model to Evaluate Ventricular Assist Devices**
Minoo Kavarana, MD - Univ of Louisville
(Abstract Journal Page 43)
- 137 **Non-Thrombogenic Reduction of Backflow in Rotary VAD Systems**
Alexandrina Untaroiu, PhD - University of Virginia
(Abstract Journal Page 45)
- 138 **Evaluation of the Characteristics of Conical Spiral Groove Bearing Designs for Rotary Blood Pumps**
Hirohito Sumikura, ME - Tokyo Denki Univ
(Abstract Journal Page 47)
- 139 **HeartMate II and Quality of Life: Electric Blanket, a Tingling Experience**
Ben Rodermans, MR - Univ Medical Center Utrecht
(Abstract Journal Page 48)
- 140 **FK506 and Methylprednisolone Reduce Inflammation After Hypothermia and Rewarming in Endothelial Cells**
Katharina Schmitt, MD - Deutsches Herzzentrum Berlin
(Abstract Journal Page 50)
- 141 **Intraoperative Evaluation of the HeartMate II Flow Estimator**
Mark Slaughter, MD - Advocate Christ Medical Center
(Abstract Journal Page 51)
- 142 **Mechanical Behavior of Milk Clots is Similar to Fibrin Clots (For Use in Medical Device Testing)**
Lorraine Mallen, MS - San Diego State Univ
(Abstract Journal Page 53)
- 143 **Ab Portable Driver Offers Equivalent Performance to AB5000 Console**
Gretchen Piwinski, Meng - Abiomed Inc
(Abstract Journal Page 53)
- 144 **Left Ventricular Assist Device vs Biventricular Assist Device or Total Artificial Heart: New Algorithm for Device Selection Using Preoperative Transthoracic Echocardiographic Screening of RV Geometry**
Alexander Stepanenko, MD - Deutsches Herzzentrum Berlin
(Abstract Journal Page 54)
- 145 **Pitfalls in Haemodynamic Percutaneous Heart Valve Implantation Simulation**
Mathieu Vergnat, MD - Center Hospital Univ Vaudois
(Abstract Journal Page 55)
- 146 **Pulsatile Flow Visualization of PediaFlow™ Pediatric VAD**
James Antaki, PhD - Carnegie Mellon Univ
(Abstract Journal Page 55)
- 147 **Correlation of Ischemic Area and Coronary Flow with Ameroid Size in a Chronic Porcine Model of Hibernating Myocardium**
Egemen Tuzun, MD - Texas Heart Inst
(Abstract Journal Page 56)
- 148 **Progress with Extremum-Seeking Feedback Controller for a Rotary Blood Pump**
James Antaki, PhD - Carnegie Mellon University
(Abstract Journal Page 57)
- 149 **Physiologic Control Algorithms of the HeartWare® Left Ventricular Assist Device**
Carlos Reyes, MSEE - HeartWare Inc
(Abstract Journal Page 57)
- 150 **Life-Cycle Testing of the HeartWare® Left Ventricular Assist Device**
Carlos Reyes, MSEE - HeartWare Inc
(Abstract Journal Page 57)
- 151 **Quantification of Dynamic Applied Forces in Vascular Occlusion - Steel vs Padded Jaw Vascular Clamps**
Jerome Riebman, MD - Napa Valley Cardiac and Thoracic Surgery
(Abstract Journal Page 58)
- 152 **Clotting Time Assessment of Candidate Materials for Use as Blood Contacting Surfaces in Blood Pumps**
Joshua Woolley - Univ of Pittsburgh
(Abstract Journal Page 58)
- 153 **Effect of Myocardial Properties on Clinical Parameters During a Pump Speed Change Procedure During Axial Flow LVAD Support: A Model Study**
JR Martina, Msc - Eindhoven Univ of Technology

(Abstract Journal Page 48)

- 154 Investigation on Energy Transmission Efficiency of Externally-Coupled Transcutaneous Energy Transmission System (ECTETS) Miniaturized by Using Higher Switching Frequency for a Totally-Implantable Artificial Heart (TIAH)
*Takanori Hongo, M1 - Tokyo Univ of Science
 (Abstract Journal Page 49)*
- 155 Development of the Multistage Centrifugal Blood Pump
*Tomonori Tsukiya, PhD - National Cardiovascular Center of Japan
 (Abstract Journal Page 50)*
- 156 Fluctuation of Hemodynamic Parameters in Non-Pulsatile Total Artificial Heart with 1/R Control
*Yusuke Abe, PhD - Univ of Tokyo
 (Abstract Journal Page 51)*
- 157 Development of DexAide Right Ventricular Assist Device: Update II
*Kiyotaka Fukamachi, MD, PhD - Cleveland Clinic
 (Abstract Journal Page 53)*
- 158 Mathematical Models of the Circulatory System with Total Cavopulmonary Connection: Effect of Altitude
*Juan Briceno, PhD - Univ of Los Andes
 (Abstract Journal Page 54)*
- 159 Tesla Pump Design and Optimization for Pediatric Cardiovascular Support
*Kevin Aroom, MS - Univ of Texas Health Science Center
 (Abstract Journal Page 54)*
- 160 QRS Duration for Site-Timing Optimization During Biventricular Pacing
*Ashley Whyte, BA - Columbia University
 (Abstract Journal Page 55)*
- 161 An Object-Oriented Model of the Carotid Barorflex in Pulsatile Conditions
*J Spillner, MD - RWTH Aachen Univ
 (Abstract Journal Page 56)*
- 162 Identification and Control of a Linear Actuated Displacement Pump Used to Test and Develop Ventricular Assist Devices
*Heinrich Schima, PhD - Medical University Vienna
 (Abstract Journal Page 56)*
- 163 Computational Fluid Dynamics Analysis of the HeartWare® Left Ventricular Assist Device (LVAD)
*Dan White, BS - HeartWare Inc
 (Abstract Journal Page 57)*
- 164 Does Preventing Cytokine Production Mean Preventing the Invasiveness of Cardiopulmonary Bypass?
*Koichi Sato, MD, PhD - Niigata Univ Grad School of Med & Dent Science
 (Abstract Journal Page 58)*
- 165 A Study of Mechanical Heart Valve Closing Velocities and Cavitation on Valve Material, Size and Type
*Luke Herbertson, BS - Pennsylvania State University
 (Abstract Journal Page 15)*

11:30am - 12:00pm

ASAIO HASTINGS LECTURE

Concept to Commercialization: A Personal Perspective

Thomas Fogarty, MD - President, Thomas Fogarty Winery



12:00pm - 1:15pm

WORKING LUNCHEON 10 - Admission by ticket only, no standing room

Continental 8 - Ballroom Level - Bldg 3

The ASAIO New Venture Forum: Strategies for the Creation of a Sustainable Entrepreneurial Ecosystem

Andrew Koert, BSME - MBA / MS Candidate, MIT

Susan Zawaski, PhD - MBA Candidate, MIT

12:00pm - 1:15pm

WORKING LUNCHEON 11 - Admission by ticket only, no standing room

Powell Room - 6th Fl, Bldg 3

Kinetic Modeling Then & Now

Frank Gotch, MD

12:00pm - 1:15pm

WORKING LUNCHEON 12 - Admission by ticket only, no standing room

Sutter Room - 6th Fl, Bldg 3

Setting Up a Cardiovascular Hybrid Suite

Mark Galantowicz, MD - Chief CT Surg, Nationwide Children's Hospital

1:30pm - 3:00pm

SLIDE SESSION 12 CARDIAC

Continental 6 - Ballroom Level - Bldg 3

Moderators: *Steven Koenig, PhD &*

1:30pm

Recent Results of Rotary Blood Pumps Support the Use of MCS as a Destination Therapy

Aly El Banayosy, MD - Heart Center NRW

(Abstract Journal Page 36)

Recipient of the Young Innovator Fellowship by LWW

1:45pm

Transcutaneous Optical Information Transmission System for a Totally-Implantable Artificial Heart - Investigation of Crosstalk Reduction Using Polarizer

Shinsuke Nakaya, BS - Tokyo Univ of Science

(Abstract Journal Page 27)

2:00pm

Prophylactic Use of the Tandem Heart Percutaneous Ventricular Assist Device in Heart Failure Patients Undergoing High Risk Cardiac Surgical Procedures

Brian Bruckner, MD - The Methodist Hospital

(Abstract Journal Page 29)

2:15pm

Nutrition in HeartMate XVE and HeartMate II LVAD Patients

Nathanael Mason, BS - Intermountain Medical Center

(Abstract Journal Page 30)

2:30pm

Urgent Exchange of a HeartMate II Left Ventricular Assist Device After Percutaneous Lead Damage

Medhi Jafar, BS - Texas Heart Institute

(Abstract Journal Page 31)

2:45pm

Platelet Activation in Ovines Implanted with the Levitronix® Pedivas™

Carl Johnson Jr, BS - University of Pittsburgh

(Abstract Journal Page 35)

1:30pm - 3:00pm

SLIDE SESSION 13 BIOENGINEERING

Continental 4 - Ballroom Level - Bldg 3

Moderators: *Amy Throckmorton, PhD &*

1:30pm

Comparison of Two Approaches to the In-Situ Delivery of Growth Factors for Regenerative Medicine

Roshni Patel, MS - Brown University

(Abstract Journal Page 10)

1:45pm

Morphology and Metabolic Activity of a Porcine Liver Stem Cell Line (PICM-19) Maintained in a Multicompartment Hollow Fiber Bioreactor for Two Weeks

RR Willard, BS - USDA

(Abstract Journal Page 9)

2:00pm

An Artificial Oxygen Carrier, Liposome-Encapsulated Hemoglobin as a Plasma Oxygenizer

Akira Kawaguchi, MD, PhD - Tokai University School of Medicine

(Abstract Journal Page 3)

2:15pm

Evolution of the Remodeling of the Arterial Wall in a Growing Animal Model Using SIS Vascular Grafts: 6-Month Follow Up

Juan Briceno, PhD - University of Los Andes

(Abstract Journal Page 19)

2:30pm

Iron Oxide Labeling of Primary Human Hepatocytes for Cell Detection via Clinical MRI

Mehmet Morgul, MD - Charite Univ Berlin

(Abstract Journal Page 2)

2:45pm

Sidestream Darkfield Imaging of the Microcirculation in Patients with Axial Flow Left Ventricular Assist Devices: A Pilot Study

Wietse Slegers, BS - Eindhoven Univ of Technology

(Abstract Journal Page 36)

1:30pm - 3:30pm

LIVER INNOVATION SESSION

Continental 5 - Ballroom Level - Bldg 3

Moderators: *Stephen Ash, MD &*

Spheroid Reservoir BAL

Scott Nyberg, MD, PhD - Prof Surgery, Mayo Clinic

HepaLife BAL Utilizing the PICM-19 Porcine Liver Stem Cell Line

Christopher Kemp, PhD - VP of R & D, HepaLife Technologies

Vital Therapies

Michael Millis, MD - Chief, Dir & Prof Surg, Univ of Chicago

SEPET

Jacek Rozga, MD, PhD - Chief Sci Officer, Arbios Systems

MARS & Prometheus Technical Aspects

Joerg Vienken, PhD - VP Biosciences, Fresenius Med Care

Prometheus

Dieter Falkenhagen, MD, PhD - Head Clin Med & Biotech, Danube Univ Krems

Albumin Dialysis MARS: Indications and Clinical Results

Steffen Mitzner, MD - Prof Medicine, University of Rostock