The development of advanced technologies of mechanical devices for short- or long-term cardiac and/or pulmonary support has led to increased adoption for use in patients with end-stage cardiac or pulmonary disease, respectively. The availability of these newer technologies, specifically cardiac assist devices, and their broader indications for use, now affords new opportunities for medical centers not performing heart transplantation to adopt these technologies for the short- or long-term circulatory support of patients as a bridge to transplantation or alternatively for use as permanent therapy. The complexities of patient management, new device technologies and important governmental regulations requires an advanced understanding and knowledge base for the use of mechanical circulatory devices. Training and proper planning are essential for success.

This symposium will provide a critical and comprehensive overview of the field and specifically review important elements necessary to initiate and maintain a program of advanced technologies for support of patients with end-stage cardiac and/or pulmonary disease. The program will consist of a series of lectures on topics of patient selection for circulatory support, overview of the new technologies and devices, and tailoring devices to specific patient indications, as well as an overview of current outcomes and short- and long-term patient management strategies. Debates on key topics will be presented to highlight important aspects of the therapy. In addition to lectures on patient management, indications and outcomes, a series of lectures will focus on the multifaceted aspects of program infrastructure to support a successful multidisciplinary program in advanced circulatory support.

Following the lecture component of the meeting, a half-day interactive wet lab will offer numerous opportunities for a hands-on experience of device operation and implant techniques including instruction on proper device settings, assessment of device performance, and device troubleshooting. The adjustment of VAD settings will be demonstrated using videos of operating room trans-esophageal echos and Swan-Ganz monitors. The treatment of potential intraoperative post-implant problems, such as right heart failure, will be discussed and demonstrated on video. The management of the more common potential postoperative challenges will be discussed. At the stations for lung support, various techniques of veno-veno and veno-arterial ECMO will be demonstrated and the challenges of managing ECMO patients will be discussed.

Learning Objectives
After participating in this educational activity, participants should be able to:
- Identify a comprehensive selection of short-and long-term devices;
- Explain the importance of proper patient selection and timing of intervention;
- Tailor a specific device to the patient;
- Recognize the complex infrastructure necessary to support a mechanical circulatory assist program;
- Identify pitfalls in peri and postoperative management;
- Develop and manage an ECMO program; and
- Access hands-on knowledge of implant techniques, speed adjustments, and troubleshooting.

Speakers and sessions are subject to change.
STS Advanced Technologies for Heart and Lung Support Symposium

Agenda

Friday, September 7, 2012

7:00 am – 7:30 am  Breakfast

7:30 am – 9:45 am  
**Session I:**
*Current Indications and Options for Mechanical Circulatory Support*

7:30 am – 7:35 am  
Welcome and Introductions  
Margarita T. Camacho, Newark, NJ and Francis D. Pagani, Ann Arbor, MI

7:35 am – 8:05 am  
The Plethora of MCS Devices: Current and Future Technologies  
Francis D. Pagani, Ann Arbor, MI

8:05 am – 8:25 am  
Cardiogenic Shock: Improving the Treatment Paradigm  
Edwin C. McGee, Jr., Chicago, IL

8:25 am – 8:45 am  
New Advances with Temporary Short-Term MCS Devices  
Joseph C. Cleveland, Aurora, CO

8:45 am – 9:05 am  
MCS Support for the Patient with Chronic Heart Failure: Indications, Patient Selection, and Timing of Operation  
Michael A. Acker, Philadelphia, PA

9:05 am – 9:25 am  
Current Outcomes with MCS Devices for BTT and DT  
Robert L. Kormos, Pittsburgh, PA

9:25 am – 9:45 am  
Presentation of Difficult Case: Panel Discussion and Audience Questions  
Margarita T. Camacho, Newark, NJ and Faculty

9:45 am – 10:00 am  Break

10:00 am – 12:00 pm  
**Session II**
*Building a Program for Mechanical Circulatory Support: Insights and Infrastructure*

10:00 am – 10:20 am  
Overview of Staff and Facility Infrastructure  
Dan M. Meyer, Dallas, TX

10:20 am – 10:40 am  
Building a Collaborative and Comprehensive Heart Failure Program: The Role of MCS from the Cardiology Perspective  
Allen S. Anderson, Chicago, IL

10:40 am – 11:00 am  
Regulatory Requirements for a Mechanical Circulatory Support Program: FDA, CMS, Joint Commission, and INTERMACS  
Robert L. Kormos, Pittsburgh, PA

*Speakers and sessions are subject to change.*
11:00 am – 11:20 am
Building a Program in Mechanical Circulatory Support:
Fiduciary Responsibilities of the Surgeon
Valluvan Jeevanandam, Chicago, IL

11:20 am – 11:40 am
VADs Gone Bad: Managing the Difficult VAD Complications
Margarita T. Camacho, Newark, NJ

11:40 am – 12:00 pm
Debate: Destination Therapy is Ready for Prime Time and Expansion Beyond Heart Transplant Centers
Pro: (8 min., 2 min. rebuttal): Nader Moazami, Minneapolis, MN
Con (8 min., 2 min. rebuttal): Valluvan Jeevanandam, Chicago, IL

12:00 pm – 1:00 pm
Lunch: Impact of MCS and Destination Therapy on the Cost of Heart Failure Care: Moving Toward Cost Effectiveness
Dennis Irwin, OptimumHealth, Inc., Golden Valley, MN

1:00 pm – 2:40 pm
Session III: Management of the MCS Patient

1:00 pm – 1:20 pm
Overview of the Major Complications with Mechanical Circulatory Support:
What Have We Learned from INTERMACS?
Robert L. Kormos, Pittsburgh, PA

1:20 pm – 1:40 pm
Perioperative and ICU Management of the MCS Patient
Joseph C. Cleveland, Aurora, CO

1:40 pm – 2:00 pm
Long-Term Management Concerns of the MCS Patient:
Surgical Perspectives
Nader Moazami, Minneapolis, MN

2:00 pm – 2:20 pm
Building a Program in Mechanical Circulatory Support:
Perspectives from a Non-Transplant Center
Dan M. Meyer, Dallas, TX

2:20 pm – 2:40 pm
Difficult Case Presentation: Panel Discussion and Audience Questions
Joseph C. Cleveland, Aurora, CO and Faculty

2:40 pm – 2:50 pm
Break

2:50 pm – 4:10 pm
Session IV: Mechanical Circulatory Support for the Lung

2:50 pm – 3:10 pm
Developing an ECMO Program
Jonathan W. Haft, Ann Arbor, MI

3:10 pm – 3:30 pm
Portable and Ambulatory ECMO Systems
Michael H. Hines, Houston, TX

3:30 pm – 3:50 pm
Indications for ECMO
Jonathan W. Haft, Ann Arbor, MI

Speakers and sessions are subject to change.
3:50 pm – 4:10 pm
Difficult Case Presentation: Discussion and Audience Questions
Jonathan W. Haft, Ann Arbor, MI and Michael H. Hines, Houston, TX

4:10 pm – 4:20 pm
Concluding Remarks
Margarita T. Camacho, Newark, NJ

Saturday, September 8, 2012
7:15 am – 7:45 am
Breakfast

7:45 am – 8:00 am
Welcome and Opening Remarks:
Goals and Format of the Wet Lab Program
Margarita T. Camacho, Newark, NJ and Francis D. Pagani, Ann Arbor, MI

8:00 am – 10:45 am
Wet Labs (5 stations)

Station One (30 min.)
Implant Techniques and Device Operation
Percutaneous Temporary MCS for Cardiogenic Shock
  1. Impella LP 2.5 and 5.0
  2. Tandem Heart pVAD
Each device will include instructors, illustrated descriptions, and videos of implant techniques.

Station Two (30 min.)
Implant Techniques and Device Operation
Temporary MCS for Cardiogenic Shock
  1. Levitronix CentriMag
  2. Abiomed AB5000
Hands-on implants in pig hearts with instructors, possible additional teaching aids such as videos illustrating various implant techniques.

Station Three (30 min.)
Implant Techniques
Long-Term Durable MCS Devices (Continuous Flow)
  1. HeartMate II LVAD
  2. HeartWare HVAD
  3. Jarvik 2000 Flowmaker
Hands-on implants in pig hearts with instructors, possible additional teaching aids such as videos illustrating various implant techniques

Station Four (30 min.)
Device Operation and Physiologic Considerations
  1. HeartMate II LVAD
  2. HeartWare HVAD
  3. Jarvik 2000 Flowmaker
Simulated intra-op and post-op physiologic scenarios enabling the participant to learn optimal device settings and trouble-shooting. Instructors will be available for questions.

Station Five (30 min.)
ECMO – Veno-veno and Veno-arterial
  1. Cannulation options
  2. Theory
  3. Support
  4. Weaning
Instructors, videos, illustrations, and possibly plastic models will be available to reinforce and recap techniques, theory and weaning.

10:30 a.m. – 10:45 a.m.  Concluding Remarks

Speakers and sessions are subject to change.