



**The Society
of Thoracic
Surgeons**

52ND ANNUAL MEETING

**PHOENIX CONVENTION CENTER
PHOENIX, ARIZONA**

JANUARY 23–27, 2016

ADVANCE PROGRAM



Mark S. Allen, MD

PRESIDENT'S MESSAGE

As President of The Society of Thoracic Surgeons, I invite you to join me for the STS 52nd Annual Meeting, January 23–27, 2016. For the first time in 30 years, the Annual Meeting will be held in beautiful Phoenix, Arizona. The city is America's sixth largest and has a sophisticated architectural landscape that's juxtaposed against panoramic mountains and stunning desert scenery.

By attending the STS Annual Meeting—the preeminent event in cardiothoracic surgery—you'll experience thought-provoking lectures and debates from renowned faculty and guests, exciting hands-on learning, an abundance of networking opportunities, and the chance to view the latest products and services in the specialty.

I'm thrilled to welcome two inspiring guest lecturers. The Thomas B. Ferguson Lecture will be given by former NASA astronaut and emergency medicine physician Scott Parazynski, MD, who—in addition to logging a total of 8 weeks in space—has summited Mount Everest and invented a number of medical devices and other technologies for life in extreme environments.

Our C. Walton Lillehei lecturer will be Gary Taubes, an award-winning science journalist who has shaken up the status quo and challenged conventional wisdom regarding diet, weight gain, and heart disease with his *New York Times*-bestselling books *Good Calories, Bad Calories* and *Why We Get Fat*.

We're also retooling STS/AATS Tech-Con, sharpening its focus on new devices and procedures that have yet to be approved by the US Food and Drug Administration, but could be available (with FDA approval) within 1-3 years from the time of presentation. This exciting new format will show you cutting-edge technology before it's available for widespread use—giving you time to prepare your practice.

And finally, for the first time, access to the STS 52nd Annual Meeting Online will be included with Annual Meeting registration—a bonus that will let you review the outstanding educational content from your home or office throughout the next year. See page 47 for more details.

There's so much more to the 52nd Annual Meeting, and in this edition of the *Advance Program*, you'll find a program outline and course descriptions to help you plan your schedule. You'll also find registration instructions and information on travel and housing accommodations starting on page 44.

Please make plans now to join your colleagues in cardiothoracic surgery this January. You can register at www.sts.org/annualmeeting.

I look forward to seeing you in Phoenix!

Mark S. Allen, MD

President, The Society of Thoracic Surgeons



Tweet about
the Annual
Meeting using
#STS2016

WHAT'S NEW

- Tech-Con will offer insight on new devices and procedures that are not yet approved by the FDA.
- A Weekend Pass is available so that attendees can sample the wide variety of weekend courses.
- Tuesday's Early Riser Sessions no longer require a separate fee.
- STS 52nd Annual Meeting Online is included with meeting registration.
- Two new educational sessions will be held on Sunday—a "how to" session featuring intraoperative videos and a session about the resuscitation of patients who arrest after cardiac surgery.
- Breaktime learning opportunities in the Exhibit Hall include an international Jeopardy! championship and tutorials from *The Annals of Thoracic Surgery* staff.

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THE SOCIETY OF THORACIC SURGEONS EDUCATION DISCLOSURE POLICY

As a sponsor of continuing medical education accredited by the Accreditation Council for Continuing Medical Education (ACCME), The Society of Thoracic Surgeons requires that any individual who is in a position to control the content of an educational activity must disclose all relationships with commercial interests (including known relationships of his or her immediate family, department, and partners). The ACCME defines a commercial interest as “any entity producing, marketing, reselling, or distributing health care goods or services consumed by, or used on, patients. The ACCME does not consider providers of clinical service directly to patients to be commercial interests.” The question of whether a disclosed conflict situation could represent undue influence on the educational activity by a commercial interest or whether the disclosed information is sufficient to consider an abstract, presentation, or other educational enduring material to represent potentially biased information must be resolved prior to an individual's involvement in STS educational programming.

Required disclosures include (1) a financial interest of any amount (e.g., through ownership of stock, stock options, or bonds) (2) the receipt of any amount of cash, goods or services within the current 12-month period (e.g., through research grants, employment, consulting fees, royalties, travel, or gifts) or (3) a nonremunerative position of influence (e.g., as officer, director, trustee or public spokesperson). EXCLUDED from this disclosure requirement are blind trusts or other passive investments such as mutual funds. In the case of a financial or other relationship disclosure, the company, product/service, and specific nature of the relationship must be noted. Disclosure is mandatory for any person involved in the planning, management, presentation, and/or evaluation of STS educational activities.

Failure to disclose all relationships with commercial interests disqualifies the individual from being a planning committee member, a teacher, or an author of educational materials, and this individual cannot have any responsibility for the development, management, presentation, or evaluation of STS educational activities. This requirement is intended neither to imply any impropriety of such relationships nor to prejudice any individual planner, presenter or author. It is merely to identify such relationships through full disclosure, and to allow STS to assess and resolve potential influences on the educational activity prior to the planning and implementation of an educational activity. If no relationships with commercial interests exist, the individual must indicate this on the disclosure form.

Additionally, the fact that the presentation, paper, or other educational product describes (a) the use of a device, product, or drug that is not FDA approved or (b) an off-label use of an approved device, product, or drug must also be disclosed. This requirement has been adopted in response to FDA policy and case law involving medical societies, and is not intended to prohibit or inhibit independent presentation or discussion regarding the uses of devices, products, and drugs as described in (a) or (b) above.

For live presentations, all disclosures must be stated orally and on a slide at the beginning of the presentation and will be noted in published material related to the activity. Slides, handouts, and other materials utilized as part of an educational activity cannot contain any advertising, trade names or a product group message. Speakers are required to disclose that they have nothing to disclose if this is the case.

Amended by the STS Executive Committee: April 11, 2012

STS 52ND ANNUAL MEETING

The Society of Thoracic Surgeons is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The Society of Thoracic Surgeons designates this live activity for a maximum of 34.00 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

The American Board of Cardiovascular Perfusion designates this activity for 41.9 Category I CEUs.



PROGRAM AT A GLANCE

FRIDAY, JANUARY 22, 2016

3:00 PM – 6:00 PM

Registration: STS/AATS Tech-Con and STS Annual Meeting

SATURDAY, JANUARY 23, 2016

7:00 AM – 6:00 PM

Registration: STS/AATS Tech-Con and STS Annual Meeting

8:00 AM – 12:30 PM

STS/SCA: Integrating Perioperative Echocardiography Into Cardiac Surgical Clinical Decision Making

8:00 AM – 3:00 PM

STS/CHEST: Primer on Advanced and Therapeutic Bronchoscopy—Theory and Hands-On Session

12:00 PM – 6:30 PM

STS/AATS Tech-Con Exhibits Open

1:00 PM – 2:30 PM

Cardiopulmonary Bypass Simulation Course

1:00 PM – 5:00 PM

STS/AATS Tech-Con

5:00 PM – 6:30 PM

STS/AATS Tech-Con Reception

SUNDAY, JANUARY 24, 2016

7:00 AM – 6:30 PM

Registration: STS/AATS Tech-Con and STS Annual Meeting

7:00 AM – 1:15 PM

STS/AATS Tech-Con Exhibits Open

7:45 AM – 12:00 PM

STS/AATS Tech-Con

7:50 AM – 12:00 PM

Acquired and Congenital Heart Surgery Symposium: Challenges in Adult Congenital Heart Disease

Practice Management Summit

STS/AATS Critical Care Symposium: Quality and Value in the CT ICU

1:00 PM – 4:00 PM

Residents Symposium: Transitioning From Residency to a Successful Practice

1:15 PM – 4:30 PM

ACC @ STS

How To: Technical Tricks and Pitfalls to Simplify Cardiac Surgery Procedures
Parallel Surgical Symposium: Congenital
Parallel Surgical Symposium: General Thoracic
Resuscitation of Patients Who Arrest After Cardiac Surgery

2:00 PM – 6:30 PM

Scientific Posters Open

2:30 PM – 4:30 PM

CT Surgery Interprofessional Education Symposium: Multidisciplinary Team Approach to Patient Safety, Quality, Outcomes, and Reimbursement

4:30 PM – 6:30 PM

Opening Reception in STS Exhibit Hall

MONDAY, JANUARY 25, 2016

6:30 AM – 5:00 PM

Registration: STS Annual Meeting

9:00 AM – 4:30 PM

Exhibits Open
Scientific Posters Open

7:00 AM – 7:15 AM

Opening Remarks

7:15 AM – 8:15 AM

J. Maxwell Chamberlain Memorial Papers

8:15 AM – 9:00 AM

Richard E. Clark Memorial Papers

9:00 AM – 9:40 AM

BREAK—Visit Exhibits and Scientific Posters

9:40 AM – 9:50 AM

Introduction of the President: Joseph E. Bavaria

9:50 AM – 10:50 AM

Presidential Address: Mark S. Allen

10:50 AM – 11:30 AM

BREAK—Visit Exhibits and Scientific Posters

11:30 AM – 12:30 PM

(8 parallel sessions)

Adult Cardiac Session: Arrhythmia
Basic Science Research: Adult Cardiac
Basic Science Research: General Thoracic
Congenital Session: Adult Congenital
Critical Care
General Thoracic Session: New Technology
STS/CATS/CSCS: Adding New Dimensions to Your Surgical Practice—Optimizing Your Internet Presence and Understanding the Emerging Role of 3-Dimensional Printing in Cardiothoracic Surgery
Quality Improvement Initiatives in Thoracic Surgery

12:30 PM – 1:30 PM

BREAK—Visit Exhibits and Scientific Posters

1:15 PM – 5:15 PM

Redefining Practice Through Quality and Evidence: What's New?



1:30 PM – 3:30 PM

(7 parallel sessions)

Adult Cardiac Session: Aorta I

Adult Cardiac Session: Ischemic

Congenital Session: Pediatric Congenital I

General Thoracic Session: Lung Cancer I

General Thoracic Session: Lung Transplantation


SVS @ STS: Sharing Common Ground for Cardiovascular Problems

30th Anniversary Celebration of Women in Thoracic Surgery: Innovations and Contributions of WTS and STS Members

3:30 PM – 4:15 PM

BREAK—Visit Exhibits and Scientific Posters

3:30 PM – 5:30 PM

International Symposium & Reception: The Ethics and Practicality of Using New Technologies to Treat Cardiothoracic Diseases in Different Parts of the World 

4:15 PM – 5:15 PM

Surgical Motion Picture Matinees: Adult Cardiac, Congenital, and General Thoracic

5:00 PM – 6:30 PM

Scientific Posters and Wine


5:30 PM – 6:25 PM

Business Meeting (STS Members Only)

6:30 PM – 7:30 PM

STS-PAC Reception

7:00 PM – 10:30 PM

STS Social Event: Corona Ranch 

TUESDAY, JANUARY 26, 2016

6:30 AM – 4:30 PM

Registration: STS Annual Meeting

9:00 AM – 3:30 PM

Exhibits Open

9:00 AM – 5:00 PM

Scientific Posters Open

7:30 AM – 8:30 AM

Early Riser Sessions

Early Riser Health Policy Forum: MIPS: The New Medicare Fee-for-Service and What It Means to You

9:00 AM – 10:00 AM

Thomas B. Ferguson Lecture: Scott Parazynski

10:00 AM – 10:45 AM

BREAK—Visit Exhibits and Scientific Posters

10:45 AM – 11:00 AM

Award Presentations

11:00 AM – 12:00 PM

C. Walton Lillehei Lecture: Gary Taubes

12:00 PM – 1:00 PM

BREAK—Visit Exhibits and Scientific Posters

Ethics Debate: An Advance Directive Limits

Postoperative Care—Should Surgeons

Accept Limits on Care? 

Residents Luncheon

1:00 PM – 3:00 PM

(7 parallel sessions)

Adult Cardiac Session: General

Adult Cardiac Session: Mitral Valve

Congenital Session: Pediatric Congenital II

General Thoracic Session: Esophageal

General Thoracic Session: Lung Cancer II

Patient Safety Symposium: When Bad Things

Happen to Good CT Surgeons—Human

Error and the Impact on You, the “Second Victim”

EACTS @ STS: Aortic Valve Repair and Aortic

Root Reconstruction for Insufficient

Tricuspid and Bicuspid Pathology

1:00 PM – 3:30 PM

JCTSE: Accountable Surgical Education—How Can Cardiothoracic Surgery Move Forward?

1:00 PM – 5:30 PM

Advanced Therapies for End-Stage Heart Disease

3:00 PM – 3:30 PM

BREAK—Visit Exhibits and Scientific Posters

3:30 PM – 5:30 PM

(7 parallel sessions)

Adult Cardiac Session: Aorta II

Adult Cardiac Session: Aortic Valve

Cardiothoracic Surgical Education

Congenital Session: Pediatric Congenital III

General Thoracic Session: Mediastinal/Pulmonary

ESTS @ STS: Controversial Issues in General Thoracic Surgery—Perspectives From Europe and North America

SCA @ STS: Perioperative Evaluation and Management of Circulatory Shock

WEDNESDAY, JANUARY 27, 2016


6:30 AM – 9:30 AM

Registration: STS University

7:00 AM – 9:00 AM

STS University 

9:30 AM – 11:30 AM

STS University (courses repeated) 

 Indicates that a ticket is required to attend.

The contents of the program are subject to change.

[illegible]



STS/AATS TECH-CON 2016

SATURDAY, JANUARY 23, 2016

7:00 AM – 6:00 PM

Registration

12:00 PM – 6:30 PM

STS/AATS Tech-Con Exhibits Open

1:00 PM – 3:00 PM

Adult Cardiac Track I: Mitral Valve Technology

Moderators: Richard Lee, St Louis, MO, and Rakesh Suri, Cleveland, OH

1:00 PM Welcome and Introduction
Gorav Ailawadi, Charlottesville, VA

Transcatheter/Novel Repair Approaches

1:05 PM Update on MitraClip
Gorav Ailawadi, Charlottesville, VA

1:12 PM NeoChord
Gino Gerosa, Padova, Italy

1:19 PM Valtech
Francesco Maisano, Milan, Italy*

1:26 PM Millipede
Steven F. Bolling, Ann Arbor, MI

1:33 PM Mitral Bridge
Valavanur A. Subramanian, New York, NY

1:40 PM Basal Annuloplasty of the Cardia Externally
Jai S. Raman, Chicago, IL

1:47 PM Cardiosolutions Mitra-Spacer
Lars G. Svensson, Cleveland, OH

1:50 PM Panel Discussion

Transcatheter Mitral Valve Replacement

2:10 PM Fortis Valve
Vinod H. Thourani, Atlanta, GA

2:17 PM CardiAQ Valve
Wilson Y. Szeto, Philadelphia, PA

Tech-Con attendees who also register for the STS Annual Meeting can purchase a Weekend Pass at a discounted price. See page 44 for details.

Continuing medical education credit will not be offered for STS/AATS Tech-Con 2016 programming.

2:24 PM Neovasc Tiara Valve
Anson Cheung, Vancouver, Canada

2:31 PM Tendyne
Robert S. Farivar, Minneapolis, MN

2:38 PM Direct Flow
Volkmar Falk, Zurich, Switzerland*

2:45 PM Panel Discussion
Gilbert H. Tang, New York, NY

1:00 PM – 3:00 PM

General Thoracic Track I: Lung Surgery of the Future

Moderators: Julian Guitron, Loveland, OH, and Michael F. Reed, Hershey, PA

1:00 PM Introduction
Sunil Singhal, Philadelphia, PA

1:05 PM Nodule Localization
Sunil Singhal, Philadelphia, PA

1:20 PM Energy for Pulmonary Artery Vessel Ligation
Moishe A. Liberman, Montreal, Canada

1:35 PM Lung Cryoablation
Matthew R. Callstrom, Rochester, MN*

1:50 PM Veran Thoracic Navigation System
Jennifer W. Toth, Hershey, PA

2:05 PM Microlobectomy: A Novel Form of Video-Assisted Thoracoscopic Lobectomy
Joel Dunning, Middlesbrough, United Kingdom

2:20 PM Minimally Invasive Lung Ablation Using Electromagnetic Navigation Bronchoscopy and Cone Beam Computed Tomography Imaging
Douglas J. Minnich, Birmingham, AL*, and William Dickhans, Boulder, CO*

2:35 PM Panel Discussion

3:00 PM – 3:30 PM

BREAK—Visit Tech-Con Exhibits

3:30 PM – 5:00 PM

Adult Cardiac Track II: Heart Failure Technology

Moderators: Mark S. Slaughter, Louisville, KY, and Leora T. Yarboro, Charlottesville, VA

3:30 PM Update on Novel Left Ventricular Assist Device (LVAD) Trials
Nicholas G. Smedira, Cleveland, OH

3:45 PM Total Artificial Heart: Ready for Primetime at All LVAD Centers?
Francisco A. Arabia, Los Angeles, CA

4:00 PM CircuLite Synergy
Pavan Atluri, Philadelphia, PA

4:07 PM ReliantHeart HeartAssist
TBD

4:14 PM Impella Right Ventricular Assist Device
TBD

*Invited

- 4:21 PM NuPulse Implantable Counterpulsation
Valluvan Jeevanandam, Chicago, IL
- 4:28 PM Self-Regulating, Single-Piece, Pulsatile, Continuous-Flow Total Artificial Heart
Nader Moazami, Cleveland, OH
- 4:35 PM Panel Discussion
- 4:45 PM Sternal Closure Devices: What's the Skinny on All These Technologies?
Kendra J. Grubb, Louisville, KY

3:30 PM – 5:00 PM

General Thoracic Track II: Advances in Robotic Tools and Technology

Moderators: Mark F. Berry, Stanford, CA, and Jeremiah T. Martin, Lexington, KY

- 3:30 PM DaVinci XI Firefly and Staplers
Bernard J. Park, New York, NY
- 3:45 PM Spy/Pinpoint
Min P. Kim, Houston, TX
- 4:00 PM Robotic Technology in Development
Mark R. Dylewski, Palmetto Bay, FL
- 4:15 PM Emerging Robotic Tools
David C. Rice, Houston, TX
- 4:30 PM New Robotic Platforms
Robert J. Cerfolio, Birmingham, AL
- 4:45 PM New Haptic Technology for Robotic Surgery
*Mark W. Onaitis, Durham, NC**

5:00 PM – 6:30 PM

STS/AATS Tech-Con Reception

SUNDAY, JANUARY 24, 2016

7:00 AM – 6:30 PM

Registration

7:00 AM – 1:15 PM

STS/AATS Tech-Con Exhibits Open

7:45 AM – 9:30 AM

Adult Cardiac Track III: Aortic Valve and Aortic Disease

Moderators: S. Chris Malaisrie, Chicago, IL, and Himanshu J. Patel, Ann Arbor, MI

- 7:45 AM Update on Transcatheter Aortic Valve Replacement (TAVR) Device Trials in the US and Europe
David R. Holmes, Rochester, MN
- 8:00 AM Update on Novel Apical Closure Devices
Thomas Walther, Bad Nauheim, Germany
- 8:10 AM Novel Suprasternal Aortic Access Device for TAVR
Andy C. Kiser, Chapel Hill, NC
- 8:20 AM **Debate:** What the Surgeon's Role in TAVR REALLY Will Be 5 Years From Now

Let's Get Real, Cardiologists Will Own It
Hersh S. Maniar, St Louis, MO

I Can Do TAVR With My Eyes Closed. I Will Be Doing TAVR
Vinod H. Thourani, Atlanta, GA
- 8:40 AM Panel Discussion
- 8:50 AM Results of Ascending Aortic Stent Grafting Using the First FDA-Approved Investigational Device Exemption (IDE)
Ali Khoynezhad, Los Angeles, CA

- 9:00 AM Branch Stent Grafting of Arch: IDE Results
Nimesh Desai, Philadelphia, PA

- 9:10 AM A Novel Device to Promote Active Remodeling and Cure of Aortic Dissections
*Ali Shahriari, Indianapolis, IN**

7:45 AM – 9:30 AM

General Thoracic Track III: OR of the Future

Moderators: Reza J. Mehran, Houston, TX, and Allan Pickens, Atlanta, GA

- 7:45 AM Introduction
- 7:50 AM Sony Head-Mounted Display
Eric L. Grogan, Nashville, TN
- 8:05 AM Apps in Practice
Edward M. Bender, Cape Girardeau, MO
- 8:20 AM Google Glass
*Ahmad Y. Sheikh, Stanford, CA**
- 8:35 AM Apps for Education
Shari L. Meyerson, Chicago, IL
- 8:50 AM Thoracic Hybrid Room of the Future
Kazuhiro Yasufuku, Toronto, Canada
- 9:05 AM Microsoft HoloLens
TBD
- 9:20 AM Panel Discussion

9:30 AM – 10:15 AM

BREAK—Visit Tech-Con Exhibits

10:15 AM – 12:00 PM

Joint Session: "Shark Tank"—Rapid-Fire Elevator Pitches of Revolutionary Technology

Moderators: Gorav Ailawadi, Charlottesville, VA, and Shanda H. Blackmon, Rochester, MN

- 10:30 AM Central Venous Cannulation With a New, Self-Expandable, Polymeric Venous Cannula
Enrico Ferrari, Lugano, Switzerland
- 10:40 AM New Prototype of an Expandable, Catheter-Implantable, Polyurethane Stent Valve for Pediatric Patients
Miguel A. Maluf, São Paulo, Brazil
- 10:50 AM Spinal Fiber-Optic Monitoring for Ischemia
Thomas Floyd, Stony Brook, NY
- 11:00 AM Cooling Catheter for Spinal Cord Protection
John A. Elefteriades, New Haven, CT
- 11:10 AM Infrared Coagulator to Treat Atrial Fibrillation, Infectious Endocarditis, and Cardiac Tumors
*Hiroshi Kubota, Mitaka, Japan**
- 11:20 AM Maneuverable Chest Tube
Ian A. Makey, San Antonio, TX
- 11:30 AM Hyperthermic Pleural Lavage for Pleural Metastasis
Daniel L. Miller, Marietta, GA
- 11:40 AM SAFEX Apical Closure Device for Fully Percutaneous Transapical Valve Therapies
Enrico Ferrari, Lugano, Switzerland
- 11:50 AM Methods of Palliative Treatment for Complicated Forms of Lung Cancer
Vladislav Severgin, Odessa, Ukraine

*Invited



SATURDAY, JANUARY 23, 2016

7:00 AM – 6:00 PM

Registration: STS/AATS Tech-Con and STS Annual Meeting

8:00 AM – 12:30 PM

STS/SCA: Integrating Perioperative Echocardiography Into Cardiac Surgical Clinical Decision Making

In this joint session by STS and the Society of Cardiovascular Anesthesiologists, established and emergent echocardiographic technologies will be discussed, and clinical cases will be presented to demonstrate how qualitative and quantitative tools can facilitate perioperative clinical decision making and an understanding of disease processes. The session primarily will focus on pre-procedure planning, intraoperative clinical decision making, and post-procedure evaluation, with a complementary focus on the utility of echocardiography and its impact in the perioperative period.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Discuss the application of new technologies in the quantitative and qualitative echocardiographic assessment of structural heart disease
- Outline the utility of intraoperative echocardiography in diagnosing complications in the immediate post-cardiopulmonary bypass period
- Describe the utility of intraoperative echocardiography in refining surgical decision making based on intraoperative analysis of the primary indication for surgery and associated lesions

Moderators: *Vinay Badhwar, Pittsburgh, PA, John V. Conte, Baltimore, MD, Daniel H. Drake, Traverse City, MI, Gerald M. Lawrie, Houston, TX, and Stanton K. Shernan, Boston, MA*

Session 1

- 8:00 AM **Transesophageal Echo Simulation**
Vinay Badhwar, Pittsburgh, PA, John V. Conte, Baltimore, MD, Daniel H. Drake, Traverse City, MI, Gerald M. Lawrie, Houston, TX, G. Burkhard Mackensen, Seattle, WA, Stanton K. Shernan, Boston, MA, Douglas Shook, Newton Highlands, MA, and Joshua Zimmerman, Salt Lake City, UT
- 8:25 AM **Left Ventricle and Mitral Valve Analysis**
Stanton K. Shernan, Boston, MA
- 8:50 AM **Right Ventricle and Dynamic Mitral Valve Analysis**
G. Burkhard Mackensen, Seattle, WA
- 9:15 AM **Case 1: Patient Prosthetic Mismatch**
Joshua Zimmerman, Salt Lake City, UT
- 10:00 AM **Break**

Session 2

- 10:30 AM **Case 2: Perivalvular Leak After Mitral Valve Replacement**
Douglas Shook, Newton Highlands, MA
- 11:10 AM **Case 3: Tricuspid Regurgitation in Mitral Valve Surgery**
Stanton K. Shernan, Boston, MA
- 11:50 AM **Case 4: Complex Mitral Valve Repair**
G. Burkhard Mackensen, Seattle, WA

8:00 AM – 3:00 PM**STS/CHEST: Primer on Advanced and Therapeutic Bronchoscopy—Theory and Hands-On Session****

This course, offered in conjunction with the American College of Chest Physicians, will introduce participants to the theory and practice of endobronchial ultrasound (EBUS) and interventional bronchoscopy. Practicing cardiothoracic surgeons, who wish to expand their scope of practice, will become familiar with the increasing array of technological solutions to lung cancer staging and management of airway obstruction. A combination of lectures, case presentations, and simulation will be used to teach the basics of EBUS, EBUS-guided biopsy, and the management of airway obstruction by stenting and several modalities of tumor ablation. Hands-on workstations will be available for participants to gain exposure and familiarity with EBUS.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Identify indications, yield, and complications of EBUS
- Discuss the benefits and limitations of airway ablative modalities
- State the benefits and limitations of various airway stents

Moderators: Momen M. Wahidi, Durham, NC, and Richard I. Whyte, Boston, MA

8:00 AM Introduction

8:10 AM EBUS Mediastinal Anatomy
Kazuhiro Yasufuku, Toronto, Canada

8:30 AM EBUS-Transbronchial Needle Aspiration (TBNA)
Momen M. Wahidi, Durham, NC

8:50 AM Navigational Bronchoscopy and Radial EBUS
Alexander C. Chen, St Louis, MO*

9:10 AM Panel Discussion

9:30 AM Break

9:50 AM Rigid Bronchoscopy
Stephen R. Hazelrigg, Springfield, IL

10:10 AM Therapeutic Endoscopy: Laser, Cryotherapy, Electrocautery, and Argon Plasma Coagulation (APC)
Moishe A. Liberman, Montreal, Canada

10:30 AM Airway Stents
Michael S. Mulligan, Seattle, WA*

10:50 AM Foreign Body Removal
Lonny Yarmus, Baltimore, MD

11:10 AM Endobronchial Valves for Air Leak
Christine C. Argento, Chicago, IL

11:30 AM Panel Discussion

11:50 AM Lunch and Case Discussion

12:30 PM Hands-On Breakout Sessions

Station 1: EBUS-TBNA on Airway Models
Kazuhiro Yasufuku, Toronto, Canada, and Robert E. Merritt, Columbus, OH

Station 2: Navigational Bronchoscopy
Lonny Yarmus, Baltimore, MD

Station 3: EBUS Simulator/Endobronchial Valves
Christine C. Argento, Chicago, IL

Station 4: Rigid Bronchoscopy and Airway Stents
Michael S. Mulligan, Seattle, WA*, and Momen M. Wahidi, Durham, NC

Station 5: Electrocautery, APC, and Cryotherapy
Alexander C. Chen, St Louis, MO*, and Moishe A. Liberman, Montreal, Canada

1:00 PM – 2:30 PM**Cardiopulmonary Bypass Simulation Course**

The management and mastery of cardiopulmonary bypass is essential for safe and effective cardiac surgery. In this session, a cardiothoracic surgeon and perfusionist will work together to explain a systematic approach for initiating, managing, and separating from cardiopulmonary bypass. A cardiopulmonary bypass simulator and actual patient cases will help participants explore a variety of perfusion crises and emergencies.

This course is open to residents, medical students, and other participants who are part of an interprofessional team within the operating room.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Demonstrate a systematic approach to prepare, initiate, maintain, and separate from cardiopulmonary bypass
- Discuss how to diagnose, stabilize, and manage an array of patient crises and emergencies that can occur while on cardiopulmonary bypass
- Identify the team management skills needed to effectively care for patients experiencing cardiopulmonary bypass emergencies

Course Director: Thomas E. MacGillivray, Boston, MA

Faculty: Uriah Dudgeon, Boston, MA*, and Karen M. Kim, Ann Arbor, MI*



*Invited

**This course has limited attendance.



SUNDAY, JANUARY 24, 2016

7:00 AM – 6:30 PM

Registration: STS/AATS Tech-Con and STS Annual Meeting

7:50 AM – 12:00 PM

Acquired and Congenital Heart Surgery Symposium: Challenges in Adult Congenital Heart Disease

High-risk cardiac reoperations are common, and reentry techniques are evolving. In this session, cardiothoracic surgeons, cardiologists, and intensivists, who are experts in pediatric and adult congenital heart surgery, will discuss the varying reentry strategies available. They also will discuss right-sided heart failure, a common pathology in the adult congenital heart patient population for which medical/surgical options are variable and evidence-based decision making is lacking.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Explain the different approaches to high-risk sternal reentry based on which structure is at risk
- Recognize the differences and similarities between pulmonary hypertension and right-sided heart failure in both pediatric and adult congenital heart disease (ACHD)
- Demonstrate an increased awareness of the different surgical and mechanical support options available
- Assess how a surgeon, cardiologist, and intensivist each would approach the treatment of pulmonary hypertension and right-sided heart failure

Moderators: *Emile A. Bacha, New York, NY, Christopher A. Caldarone, Toronto, Canada, Stephanie M. Fuller, Philadelphia, PA, and Jennifer S. Nelson, Chapel Hill, NC*

7:50 AM Welcome and Introduction

The Hazardous Resternotomy—Pearls and Pitfalls (Personal Technique With Special Attention To...)

- 8:00 AM** Imaging
Brian E. Kogon, Atlanta, GA
- 8:15 AM** Pediatrics
Charles D. Fraser, Houston, TX
- 8:30 AM** Right-Sided Structures
Joseph A. Dearani, Rochester, MN
- 8:45 AM** Patent Coronary Artery Bypass Grafts
*John D. Puskas, Atlanta, GA**
- 9:00 AM** Aorta
Duke E. Cameron, Baltimore, MD
- 9:15 AM** Panel Discussion
- 9:40 AM** Break

When the Right Side Fails...

- 10:00 AM** Differences and Similarities in Pediatric Pulmonary Hypertension vs ACHD
Nancy S. Ghanayem, Milwaukee, WI
- 10:15 AM** Postop Care Through the Eyes of a CT Surgeon/Intensivist
Nevin M. Katz, Baltimore, MD
- 10:30 AM** Conventional Surgery Options
*Frank L. Hanley, Stanford, CA**
- 10:45 AM** Intraop/Postop Extracorporeal Membrane Oxygenation vs Right Ventricular Assist Devices—Which, When, and Why
Francis D. Pagani, Ann Arbor, MI
- 11:00 AM** “Valve-in-Valve” Therapy—The Changing Game
Doff McElhinney, New York, NY
- 11:15 AM** Getting the Severely Pulmonary Hypertensive to Be Transplantable
Richard C. Daly, Rochester, MN
- 11:30 AM** Panel Discussion
- 11:55 AM** Closing Comments

**Invited*

7:50 AM – 12:00 PM

Practice Management Summit

This session will provide participants with an opportunity to learn from experienced leaders who are involved in the administration and delivery of cardiothoracic surgical care in our constantly changing health care environment. In addition to presentations from eight experts, the course will incorporate a panel discussion so that lecturers can interact with attendees. This comprehensive and dynamic learning environment will help ensure that attendees' questions and real-world issues are addressed.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Analyze survey data for use in negotiations
- Describe the relationship between outcomes data and practice patterns
- Illustrate a working knowledge of how to approach compensation negotiations with a health care organization
- Explain how to administrate a co-management relationship with a health care organization
- Identify the role of surgeon entrepreneurs in the device development pathway
- Describe the current reimbursement changes proposed by the Centers for Medicare & Medicaid Services
- Outline how to impact policy discussion on the valuation of cardiothoracic surgery at the federal government level
- Discuss the management of a cardiac service line at a large, nationwide hospital system

Moderators: Greg A. Bowman, Pueblo, CO, Robert W. Emery, Minneapolis, MN, Frank L. Fazzalari, Rochester, MI, and V. Seenu Reddy, Nashville, TN

7:50 AM Introduction

8:00 AM Data Knows Best—and It Will Bring You to Tiers
Nathan Kaufman, San Diego, CA8:20 AM Effective Use of Survey Data in Negotiations
Michael N. Heaton, Indianapolis, IN8:40 AM Work Relative Value Unit Employment Models: A Bad Choice for Cardiothoracic Surgeons
Michael G. Moront, Toledo, OH9:00 AM Cardiothoracic Surgeon Entrepreneurs and the Device Development Pathway
Brian W. Duncan, Arvada, CO9:20 AM Retirement Planning
Roy Smalley, Minneapolis, MN

9:40 AM Panel Discussion

10:10 AM Break

10:20 AM Aligning Incentives Through Co-Management
Suzette Jaskie, Neptune Beach, FL10:40 AM Partnering for Excellence in Today's Health Care Environment: Hospital Corporation of America's Cardiovascular Service Line
Steven V. Manoukian, Nashville, TN11:00 AM Is the Cardiovascular Service Line Really the Best Way to Manage Cardiac Surgery Programs?
Michael J. Mack, Dallas, TX11:20 AM Update From the STS/AATS Workforce on Health Policy, Reform, and Advocacy
Alan M. Speir, Falls Church, VA

11:40 AM Panel Discussion

7:50 AM – 12:00 PM

STS/AATS Critical Care Symposium: Quality and Value in the CT ICU

Cardiothoracic critical care is complex, rapidly evolving, and resource intensive. This session will address the unique issues surrounding postoperative quality and value improvement initiatives with the goal of reducing morbidity and mortality, as well as rationalizing resource utilization. The symposium will address the fundamentals of quality and value, as well as leverage expertise with telehealth solutions, hospital-acquired infections (HAIs), mechanical ventilation, and advanced life support.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Identify the evolving changes in Cardiac Surgery Unit Advanced Life Support (CSU-ALS) following cardiothoracic surgery
- Identify key metrics and drivers of quality and value in cardiothoracic critical care
- List common HAIs in cardiothoracic critical care, their impact on quality and value, and how to mitigate risk
- Discuss the best practice approach (ABCDE) to ventilator management and preventative strategies/management of prolonged ventilation in patients in the CT ICU

Moderators: Rakesh C. Arora, Winnipeg, Canada, Kevin W. Lobdell, Charlotte, NC, and Vassyl A. Lonchyna, Chicago, IL

7:50 AM Introduction

Patient-Centered Transformational Redesign7:55 AM Introduction to Quality and Value in the ICU
Kevin W. Lobdell, Charlotte, NC8:00 AM Importance of Quality and Value in the ICU
Alan M. Speir, Falls Church, VA8:15 AM Tele-ICU: Transforming Critical Care Quality and Value
Scott Lindblom, Charlotte, NC

8:30 AM Discussion

Hospital-Acquired Infections (HAIs)8:45 AM HAIs: Impact on Quality and Value
Kevin W. Lobdell, Charlotte, NC8:50 AM Everything You Need to Know About Infection Prevention, HAIs, and Antibiotic Stewardship
Emily Landon, Chicago, IL

9:20 AM Discussion

9:30 AM Break and Poster Viewing

CSU-ALS in the US: The Role and Impact of Physician Assistants9:45 AM CSU-ALS Overview
Joel Dunning, Middlesbrough, United Kingdom10:00 AM The ACP/RN Educational Module
Sondra J. Ley, Greenbrae, CA10:15 AM The Association of Physician Assistants in Cardiovascular Surgery Perspective
David E. Lizotte, Harrisonburg, VA*10:30 AM Implementation for Your CT ICU Team
Yoan Lamarche, Montreal, Canada

10:45 AM Discussion

*Invited

Prolonged Ventilation

- 11:00 AM **What Is the Ventilator Bundle ABCDE and What Data Support It?**
John Kress, Chicago, IL
- 11:10 AM **Tactics to Prevent Prolonged Ventilation and Deal With It When It Happens**
John Kress, Chicago, IL
- 11:30 AM **Tracheostomy: Early or Wait?**
Vassyl A. Lonchyna, Chicago, IL
- 11:40 AM **When on Extracorporeal Membrane Oxygenation: Awaken, Extubate, and Mobilize**
Darryl C. Abrams, New York, NY
- 11:50 AM **Discussion**

1:00 PM – 4:00 PM**Residents Symposium: Transitioning From Residency to a Successful Practice**

This symposium will provide cardiothoracic surgery residents with practical information regarding the transition from residency to practice. The first session will include talks related to the job search: how to find the right position, interviewing tips, and negotiating a contract. The second session will include talks related to transitioning into practice: how to be successful in developing a clinical practice, how to find appropriate mentorship, and early career development. Each session will be followed by small group table discussions led by experienced surgeons and a larger group discussion with the speakers.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Plan a successful job search
- List the important elements of a contract
- Discuss the keys to building a successful clinical practice
- Identify the important aspects of early career development

Moderators: Sidharta P. Gangadharan, Boston, MA*, Sandra L. Starnes, Cincinnati, OH, and Ara A. Vaporciyan, Houston, TX

- 1:00 PM **Introduction**
- 1:05 PM **How to Find Your First Job**
Ryan A. Macke, Madison, WI
- 1:20 PM **Question-and-Answer Session**
- 1:25 PM **Keys to a Successful Interview**
Ravi K. Ghanta, Houston, TX
- 1:40 PM **Question-and-Answer Session**
- 1:45 PM **What You Need to Know About Contracts**
*Larry C. Stalica, Cincinnati, OH**
- 2:00 PM **Question-and-Answer Session**
- 2:05 PM **Breakout Sessions**
- 2:35 PM **Group Discussion / Evaluation Completion**
- 2:45 PM **Building a Successful Clinical Practice**
Edward P. Chen, Atlanta, GA
- 3:00 PM **Question-and-Answer Session**
- 3:05 PM **Early Career Development**
Elizabeth A. David, Sacramento, CA
- 3:20 PM **Question-and-Answer Session**
- 3:25 PM **Breakout Sessions**
- 3:50 PM **Group Discussion / Evaluation Completion**

1:15 PM – 4:30 PM**ACC @ STS**

The focus of this joint session by STS and the American College of Cardiology (ACC) will be the truly collaborative “Heart Team” approach to treating complex issues facing the practicing physician or affiliate provider. Using a unique and innovative format that highlights the spectrum of adult cardiac diseases, speakers will discuss the multidisciplinary approach to aortic valve disease, coronary artery disease, and mitral regurgitation. Course components include technical videos featuring procedural expertise in these disease processes, a critical review of the literature, a lecture regarding research from the STS/ACC TVT Registry™, and presentations describing difficult clinical scenarios.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Discuss the controversies surrounding the management of coronary artery disease
- Describe the indications and contraindications for the treatment of ischemic mitral regurgitation
- Describe the construction and makeup of the multidisciplinary “Heart Team” and its influence in improving patient outcomes and fostering communication among specialties
- Identify and explain the optimal management of patients with aortic valvular disease

Moderators: David R. Holmes, Rochester, MN, Susheel Kodali, New York, NY, Patrick T. O’Gara, Boston, MA, and Vinod H. Thourani, Atlanta, GA

- 1:15 PM **Lessons Learned From the STS/ACC TVT Registry™**
Frederick L. Grover, Aurora, CO
- 1:25 PM **Ninety Percent of All Transcatheter Aortic Valve Replacements (TAVR) Will Be Done Transfemorally: How Can You Stay in the Game?**
Vinod H. Thourani, Atlanta, GA
- 1:32 PM **Debate: TAVR for Low-Risk Patients—The Writing Is On the Wall, But How Will We Evaluate Outcomes?**
- There Is No Floor**
Michael J. Mack, Dallas, TX
- Hold Your Horses**
David R. Holmes, Rochester, MN
- 1:46 PM **Discussion**
- 1:56 PM **So Many TAVR Choices: How to Choose the Right Device for the Right Patient**
Susheel Kodali, New York, NY
- 2:06 PM **My Worst Case That I Sent for TAVR: Why Did I Not Send This Patient to Surgery?**
Patrick T. O’Gara, Boston, MA
- 2:14 PM **Discussion**
- 2:24 PM **Break**
- 2:38 PM **Case Presentation and Rationale for When to Use Percutaneous Coronary Intervention in Left Main Coronary Artery Disease (CAD)**
TBD
- 2:46 PM **Technical Video and Current Rationale for Hybrid Revascularization: Why You Need to Learn This Procedure to Stay Relevant in the Management of CAD**
Michael E. Halkos, Atlanta, GA
- 2:54 PM **Seriously, Why Are You Not Doing More Multi-Arterial Grafting? My Technique Will Make It Easy for You**
David P. Taggart, Oxford, United Kingdom
- 3:02 PM **My Worst Case: Why Did I Ever Take This ST Elevation Myocardial Infarction to Surgery?**
Robert A. Guyton, Atlanta, GA
- 3:10 PM **Discussion**

*Invited

- 3:20 PM What Surgeons Should Know About the ACC/AHA Valve Guidelines
Patrick T. O'Gara, Boston, MA
- 3:30 PM Why and How I Decide to Repair vs Replace the Ischemic Mitral Valve
*David H. Adams, New York, NY**
- 3:40 PM Follow-Up Report From the National Institutes of Health Cardiothoracic Surgical Trials Network Moderate and Severe Ischemic Mitral Regurgitation Trials
Michael A. Acker, Philadelphia, PA
- 3:50 PM Discussion
- 4:00 PM How I Overcame Barriers to Minimally Invasive Mitral Repair and Why You Can Do the Same
Gorav Ailawadi, Charlottesville, VA
- 4:08 PM My Worst Case: Maybe I Should Have Sent This for Transcatheter Repair
Vinay Badhwar, Pittsburgh, PA
- 4:16 PM Defining the Optimal Patient Population That Benefits From Transcatheter Mitral Valve Repair: A Report From the STS/ACC TVT Registry™
David R. Holmes, Rochester, MN
- 4:26 PM Discussion and Concluding Remarks

1:15 PM – 4:30 PM NEW!**How To: Technical Tricks and Pitfalls to Simplify Cardiac Surgery Procedures**

Cardiothoracic surgery is a highly technical specialty. Every successful surgeon has useful tips and tricks that can help colleagues improve techniques, become more efficient, and optimize outcomes. Many educational sessions focus on short- and long-term outcomes, debating optimal approaches, postoperative care, and evaluation of new technologies; however, until now, there has been little focus on how to refine and improve technique.

In this new “how to” session, world-renowned faculty will share high-quality videos that focus on the technical aspects of several common adult cardiac operations. The speakers will share their best tips and methods of avoiding pitfalls. This session will benefit both private practice and academic surgeons and will focus on coronary artery bypass grafting, mitral and aortic valve disease, and aortic surgery.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Recognize the technical aspects of complex operations commonly performed in adult cardiac surgery
- Discuss the potential pitfalls of critical steps in complex cardiac surgery
- Identify novel tricks to make cardiac operations easier, safer, and more reproducible

Moderator: *Gorav Ailawadi, Charlottesville, VA*

Coronary Artery Bypass Grafting (CABG)

- 1:15 PM Skeletonized Internal Mammary Artery Harvest
Richard Lee, St Louis, MO
- 1:23 PM Total Arterial CABG
Michael E. Halkos, Atlanta, GA
- 1:31 PM Minimally Invasive CABG
Marc Ruel, Ottawa, Canada

Mitral Valve Surgery

- 1:40 PM Mitral Exposure in Challenging Patients (Obese, Small Left Atrium, Previous Aortic Valve Replacement [AVR])
*Vinay Badhwar, Pittsburgh, PA**
- 1:48 PM Anterior Leaflet Techniques, Artificial Cord (Measuring Cord Length)
Michael A. Borger, New York, NY

- 1:56 PM Bileaflet Prolapse Repair Approaches
Y. Joseph Woo, Stanford, CA
- 2:04 PM Sizing Rings Appropriately: Avoiding Systolic Anterior Motion/Optimizing Coaptation
Robert L. Smith, Plano, TX
- 2:12 PM Total Chordal-Sparing Mitral Valve Replacement
Michael A. Acker, Philadelphia, PA
- 2:20 PM Septal Myomectomy
Nicholas G. Smedira, Cleveland, OH
- 2:28 PM Tricuspid Valve Repair: Optimizing Coaptation/Avoiding Ring Dehiscence
James S. Gammie, Baltimore, MD
- 2:35 PM Break

Aortic Valve Surgery

- 2:55 PM Right Thoracotomy Mini-AVR
John R. Mehall, Colorado Springs, CO
- 3:03 PM Aortic Root Enlargement Simplified
Derek R. Brinster, New York, NY
- 3:11 PM Bicuspid Aortic Valve Repair
Joseph E. Bavaria, Philadelphia, PA
- 3:19 PM Sutureless AVR
David A. Heimansohn, Indianapolis, IN
- 3:27 PM Stentless AVR/Freedom Solo
Eric E. Roselli, Cleveland, OH
- 3:35 PM Transapical Transcatheter AVR (TAVR)
Todd M. Dewey, Dallas, TX
- 3:43 PM Subclavian TAVR
Michael J. Reardon, Houston, TX

Aortic Surgery

- 3:51 PM Type A Dissection Repair
Michael P. Fischbein, Stanford, CA
- 3:59 PM Valve-Sparing Root Replacement
Wilson Y. Szeto, Philadelphia, PA
- 4:07 PM Bentall With Stented Bioprosthetic Valve
Anthony L. Estrera, Houston, TX
- 4:15 PM Total Arch Replacement/Elephant Trunk
Edward P. Chen, Atlanta, GA

1:15 PM – 4:30 PM**Parallel Surgical Symposium: Congenital**

This symposium will address new findings that challenge historical beliefs regarding common congenital cardiac pathologies. The session will feature video presentations on surgical repair of atrioventricular septal defects (AVSD), the arterial switch operation (ASO), and complete repair of tetralogy of Fallot. The session also will focus on new data regarding the management of hypoplastic left heart syndrome (HLHS), borderline ventricular septal defect (VSD), and aortic valve pathology requiring surgical intervention.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Identify aspects of three separate surgical approaches to AVSD, ASO, and dextro-transposition of the great arteries
- Articulate indications for closure of restrictive VSDs
- Outline differing therapeutic approaches toward the management of children with HLHS, aortic valve disease, and restrictive VSDs

Moderators: *Jonathan M. Chen, Seattle, WA, Andrew C. Fiore, St Louis, MO, and Glen S. Van Arsdell, Toronto, Canada*

- 1:15 PM Welcome and Introduction

**Invited*

Criticize My Operation (Video-Based Session)

- 1:20 PM **Complete AVSD Canal: The Australian Way**
Carl L. Backer, Chicago, IL
- 1:35 PM **Complete AVSD Canal: The Two-Patch Way**
David M. McMullan, Seattle, WA
- 1:50 PM **Complete AVSD Canal: The Boston Single-Patch Way**
Anees J. Razzouk, Loma Linda, CA
- 2:05 PM **Switch: Closed Technique**
Richard G. Ohye, Ann Arbor, MI
- 2:20 PM **Switch: Open Technique**
Tain-Yen Hsia, London, United Kingdom
- 2:35 PM **Tetralogy: Transventricular Septal Defect Closure With Annulus Preservation**
Emile A. Bacha, New York, NY
- 2:50 PM **Tetralogy: Limited Transannular Incision**
Charles D. Fraser, Houston, TX
- 3:05 PM **Tetralogy: Transatrial Repair With Limited Indibular Patch**
Osami Honjo, Toronto, Canada
- 3:15 PM **Break**

Old Operations, New Data: Should We Be Managing Patients Differently?

- 3:30 PM **Hypoplastic Left Heart Syndrome**
William M. Decamp, Orlando, FL
- 3:41 PM **Discussant for Hypoplastic Left Heart Syndrome**
Anne Dipchand, Toronto, Canada
- 3:46 PM **Borderline VSD**
*Anne Dipchand, Toronto, Canada**
- 4:01 PM **Discussant for Borderline VSD**
Carl L. Backer, Chicago, IL
- 4:05 PM **Aortic Valve Repair: I Debated Myself and I Decided! Part 1**
Zohair Y. Al Halees, Riyadh, Saudi Arabia
- 4:17 PM **Aortic Valve Repair: I Debated Myself and I Decided! Part 2**
James S. Tweddell, Milwaukee, WI

1:15 PM – 4:30 PM**Parallel Surgical Symposium: General Thoracic**

This symposium will address the optimal minimally invasive approach to thymectomy, with and without myasthenia gravis, advanced surgical techniques for lung resection including bronchoplastic procedures, and localization strategies for small, non-palpable lung nodules. It also will address barriers to participation in national databases and advice for incorporating quality improvement initiatives into cardiothoracic surgical practice.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Outline the available minimally invasive techniques for performing thymectomy in patients with and without thymoma, the advantages and disadvantages of each approach, and the clinical circumstances for their safe use
- Describe the appropriateness of and technical aspects for the use of advanced video-assisted thoracoscopic surgical (VATS) techniques in lung resection, including combined approaches for chest wall and central hilar involvement
- State the technical aspects of performing lung resections requiring bronchoplastic reconstructions and the benefits of parenchymal preservation
- List intraoperative localization techniques for non-palpable lung lesions as an adjunct to performing minimally invasive lung surgery
- Describe the importance of database participation, public reporting, and quality improvement initiatives toward maintenance of certification for the American Board of Thoracic Surgery
- Define the elements of successful quality improvement programs and how to implement them into cardiothoracic surgical practice

Moderators: *Leah M. Backhus, Stanford, CA, Traves D. Crabtree, St Louis, MO, and Joseph B. Shrager, Stanford, CA*

- 1:15 PM **Clinical Vignette/Audience Poll 1**
- 1:20 PM **VATS Thymectomy**
Joshua R. Sonett, New York, NY
- 1:32 PM **Robotic Thymectomy**
Richard K. Freeman, Indianapolis, IN
- 1:44 PM **Transcervical Thymectomy**
TBD
- 1:56 PM **Panel Discussion**
- 2:11 PM **Clinical Vignette/Audience Poll 2**
- 2:16 PM **Bronchoplastic Techniques in Lung Resection**
Joseph B. Shrager, Stanford, CA
- 2:28 PM **Localization of Sub-Solid Lung Nodules**
David R. Jones, New York, NY
- 2:40 PM **Complex VATS Resections**
Todd L. Demmy, Buffalo, NY
- 2:52 PM **Panel Discussion**
- 3:07 PM **Break**
- 3:22 PM **Clinical Vignette/Audience Poll 3**
- 3:27 PM **ProvenCare and the Lung Cancer Clinical Pathway**
Douglas E. Wood, Seattle, WA
- 3:39 PM **Using LEAN Principles to Improve System-Level Outcomes Following Esophageal Resection**
Farhood Farjah, Seattle, WA
- 3:51 PM **American Board of Thoracic Surgery Maintenance of Certification Part IV and Quality Improvement**
Bryan F. Meyers, St Louis, MO
- 4:03 PM **Benefits and Barriers to Participation in the STS General Thoracic Surgery Database**
Benjamin D. Kozower, Charlottesville, VA
- 4:15 PM **Panel Discussion**

*Invited

1:15 PM – 4:30 PM NEW!**Resuscitation of Patients Who Arrest After Cardiac Surgery****

Speakers in this session will describe and demonstrate the optimal method of resuscitation for postoperative cardiac patients. They will cover evidence-based strategies unique to patients who arrest following cardiac surgery, including conduct of the emergency re sternotomy using a team-based approach, internal massage, pacing, standardized equipment and medications, and training and implementation.

Attendees will have the opportunity to participate in simulated arrest scenarios using re sternotomy manikins. The session will conclude with information on how to become an instructor and implement these resuscitation protocols locally.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Describe the evidence-based protocol for resuscitation of patients who arrest after cardiac surgery
- Identify ways to implement standardized resuscitation protocols locally
- Demonstrate teamwork in emergency simulations using a specialized re sternotomy manikin

Moderator: Joel Dunning, Middlesbrough, United Kingdom

Faculty: Rakesh C. Arora, Winnipeg, Canada, Richard S. Bell, Baltimore, MD*, Adrian Levine, Staffordshire, United Kingdom*, Jill Ley, San Francisco, CA, and Aaron Morton, Louisville, KY*

- 1:15 PM Introduction**
Joel Dunning, Middlesbrough, United Kingdom
- 1:20 PM Arrest Practical 1: Group Simulation of Cardiac Arrest After Cardiac Surgery**
- 1:45 PM The Protocol for the Resuscitation of Patients Who Arrest After Cardiac Surgery**
Joel Dunning, Middlesbrough, United Kingdom
- 2:30 PM Arrest Practical 2: Manikin Simulation of the Arrest Protocol**
- 3:15 PM Cardiac Arrest Skills Stations**
Station 1: Internal Massage
Station 2: Gowning and Gloving
Station 3: Pacing
- 4:00 PM How to Implement the STS Expert Consensus Algorithm in Your Hospital and How to Become a Trainer**
Joel Dunning, Middlesbrough, United Kingdom

2:00 PM – 6:30 PM**Scientific Posters Open****2:30 PM – 4:30 PM****CT Surgery Interprofessional Education Symposium: Multidisciplinary Team Approach to Patient Safety, Quality, Outcomes, and Reimbursement**

The growing complexity of treating cardiothoracic surgery patients requires comprehensive approaches to achieve safe outcomes, add value, and improve patient satisfaction. Despite outstanding individual clinical expertise and effort, the importance for team-oriented approaches to complex patient care is highlighted by the Centers for Medicare & Medicaid Services' recent move to integrate payments across episodes of care. Thus, the imperative to develop streamlined, multidisciplinary processes within cardiothoracic surgery care teams is paramount. This session will explore key strategies to improve these processes in the preoperative, intraoperative, and postoperative cardiothoracic surgery setting.

**This course has limited attendance.

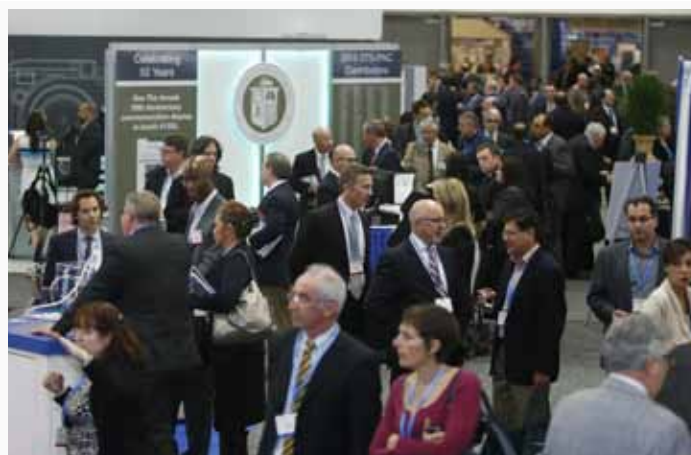
Learning Objectives

Upon completion of this activity, participants should be able to:

- List the essential elements of a successful multidisciplinary aortic valve replacement team
- Describe how better preoperative planning leads to better outcomes
- Discuss the operation of the bypass pump and which safety devices and techniques can improve patient safety
- Explain how ICU practices influence patient outcomes
- List the elements of a successful bundled payment system and a successful collaborative care system

Moderators: Stefano Schena, St Louis, MO, and Brandon H. Tieu, Portland, OR

- 2:30 PM How to Develop a Multidisciplinary Program to Ensure Patient Safety and Good Outcomes: Experience with Transcatheter Aortic Valve Replacement Multidisciplinary Team Development**
Elizabeth Perpetua, Seattle, WA
- 2:45 PM Preoperative Planning Prevents Poor Performance**
Baron L. Hamman, Dallas, TX *
- 3:00 PM Question-and-Answer Session**
Brandon H. Tieu, Portland, OR
- 3:10 PM Planning and Prevention of Perfusion Accidents: What to Do When the Pump Goes Rogue**
Michael Colligan, Houston, TX
- 3:25 PM Safety in the ICU: Complexity and Normal Accidents—Creating High Reliability in the Perioperative Domain**
Laureen L. Hill, Atlanta, GA
- 3:40 PM Question-and-Answer Session**
Stefano Schena, St Louis, MO
- 3:50 PM How to Organize a Team to Ensure Patient Safety and Value-Based Care, Measure Value and Outcomes From the Multidisciplinary Approach, and Obtain the Best Care From Your Bundle**
Kevin W. Lobdell, Charlotte, NC
- 4:05 PM Foundations of Teamwork: Organizing Principles and Care Routines for Safety, Communications, and STS Outcomes**
Paul N. Uhlig, Wichita, KS
- 4:20 PM Question-and-Answer Session**
Ayesha S. Bryant, Birmingham, AL *

4:30 PM – 6:30 PM**Opening Reception in STS Exhibit Hall**

*Invited



MONDAY, JANUARY 25, 2016

6:30 AM – 5:00 PM

Registration: STS Annual Meeting

9:00 AM – 4:30 PM

Exhibits Open

Scientific Posters Open

7:00 AM – 10:50 AM

General Session I

Moderators: Mark S. Allen, Rochester, MN, and Keith S. Naunheim, St Louis, MO

7:00 AM Opening Remarks

7:15 AM **J. Maxwell Chamberlain Memorial Paper for General Thoracic Surgery:** Quality Measures in Clinical Stage I Non–Small-Cell Lung Cancer: Improved Performance Is Associated With Improved Survival

P. P. Samson¹, T. D. Crabtree², S. R. Broderick³, A. S. Krupnick², D. Kreisel², G. A. Patterson⁴, B. F. Meyers¹, V. Puri¹

¹Washington University School of Medicine, St Louis, MO, ²Washington University School of Medicine/Barnes Jewish Hospital, St Louis, MO, ³St Luke's Hospital, Chesterfield, MO, ⁴Washington University, St Louis, MO

Discussant: Felix G. Fernandez, Atlanta, GA

7:35 AM **J. Maxwell Chamberlain Memorial Paper for Adult Cardiac Surgery:** Optimal Timing Between Myocardial Infarction and Coronary Artery Bypass Grafting: Impact on In-Hospital Mortality

E. L. Nichols¹, C. S. Ross², J. R. Brown², R. S. Kramer³, J. N. McCullough⁴, B. M. Westbrook⁵, E. Olmstead⁴, B. J. Leavitt⁶, J. D. Klemperer⁷, G. L. Sardella⁸, F. Hernandez⁷, A. W. Discipio⁹, D. J. Malenka⁴

¹The Dartmouth Institute, Lebanon, NH, ²Dartmouth College - Geisel School of Medicine, Lebanon, NH, ³Maine Medical Center, Portland, ⁴Dartmouth-Hitchcock Medical Center, Lebanon, NH, ⁵Catholic Medical Center, Manchester, NH, ⁶University of Vermont Medical Center, Burlington, ⁷Eastern Maine Medical Center, Bangor, ⁸Concord Hospital, NH, ⁹Dartmouth Hitchcock Medical Center, Lebanon, NH

Discussant: Robert A. Guyton, Atlanta, GA

7:55 AM

J. Maxwell Chamberlain Memorial Paper for Congenital Heart Surgery: Clinical Experience With the Bifurcated Y-Graft Fontan Procedure

K. R. Kanter¹, T. Slesnick¹, P. M. Trusty², M. Restrepo², A. P. Yoganathan²

¹Emory University, Atlanta, GA, ²Georgia Institute of Technology, Atlanta

Discussant: Marshall L. Jacobs, Newtown Square, PA

8:15 AM

Richard E. Clark Memorial Paper for General Thoracic Surgery: Operative Risk for Major Lung Resection Increases at Extremes of Body Mass Index: Analysis of the STS General Thoracic Surgery Database

T. Williams¹, B. Gulack², S. Kim³, F. G. Fernandez⁴, M. K. Ferguson¹

¹The University of Chicago, IL, ²Duke University, Durham, NC, ³Duke Clinical Research Institute, Durham, NC, ⁴Emory University, Atlanta, GA

Discussant: Benjamin D. Kozower, Charlottesville, VA

8:30 AM

Richard E. Clark Memorial Paper for Adult Cardiac Surgery: Development of a Risk Prediction Model and Clinical Risk Score for Isolated Tricuspid Valve Surgery: Analysis of the STS Adult Cardiac Surgery Database

D. LaPar¹, D. S. Likosky², M. Zhang², P. F. Theurer², C. E. Fonner³, J. A. Kern⁴, S. F. Bolling², D. H. Drake⁵, A. M. Speir⁶, J. B. Rich⁷, I. L. Kron⁸, R. L. Prager², G. Ailawadi⁴

¹University of Virginia, Charlottesville, ²University of Michigan Health System, Ann Arbor, ³Virginia Cardiac Surgery Quality Initiative, Charlottesville, ⁴University of Virginia Health System, Charlottesville, ⁵Cardiothoracic Surgeons of Grand Traverse, Traverse City, MI, ⁶Cardiac, Vascular & Thoracic Surgery Associates, Falls Church, VA, ⁷Virginia Cardiac Surgery Quality Initiative, Lenexa, KS, ⁸University of Virginia Medical Center, Charlottesville

Discussant: Michael A. Acker, Philadelphia, PA

8:45 AM

Richard E. Clark Memorial Paper for Congenital Heart Surgery: Prevalence of Noncardiac and Genetic Abnormalities in Neonates Undergoing Surgery for Congenital Heart Disease: Analysis of the STS Congenital Heart Surgery Database

A. Patel¹, J. M. Costello¹, C. L. Backer¹, S. K. Pasquali², K. Hill³, A. Wallace³, J. P. Jacobs⁴, M. L. Jacobs⁵

¹Ann & Robert H. Lurie Children's Hospital of Chicago, IL, ²University of Michigan, Ann Arbor, ³Duke Clinical Research Institute, Durham, NC, ⁴Johns Hopkins All Children's Heart Institute, St Petersburg, FL, ⁵Johns Hopkins School of Medicine, Newtown Square, PA

Discussant: Peter J. Gruber, Iowa City, IA

- 9:00 AM Break
- 9:40 AM Introduction of the President
Joseph E. Bavaria, Philadelphia, PA
- 9:50 AM Presidential Address
Mark S. Allen, Rochester, MN

9:00 AM – 9:40 AM

BREAK—Visit Exhibits and Scientific Posters

10:50 AM – 11:30 AM

BREAK—Visit Exhibits and Scientific Posters

11:30 AM – 12:30 PM

Adult Cardiac Session: Arrhythmia

Moderators: Richard Lee, St Louis, MO, and Jonathan M. Philpott, Norfolk, VA

- 11:30 AM Left-Sided Surgical Ablation for Patients With Atrial Fibrillation Undergoing Concomitant Cardiac Surgery
N. Ad, S. Holmes, D. Lamont, D. Shuman
Inova Heart and Vascular Institute, Falls Church, VA
- 11:45 AM Biatrial or Left Atrial Lesion Set for Ablation During Mitral Surgery: Risks and Benefits
A. Churyla¹, P. M. McCarthy², J. Kruse¹, A. Andrei¹, S. C. Malaisrie³, Z. Li¹, H. Russell¹, R. Passman¹
¹Northwestern Memorial Hospital, Chicago, IL, ²Northwestern University/Northwestern Memorial Hospital, Chicago, IL, ³Northwestern University, Chicago, IL
- 12:00 PM Atrial Fibrillation Ablation Does Not Increase Operative Risk When Added to Coronary Artery Bypass Grafting and Aortic Valve Replacement
T. Al-Atassi, D. Kimmaliardjuk, C. Dagenais, B. Lam, M. Bourke, F. D. Rubens
University of Ottawa Heart Institute, Canada
- 12:15 PM Panel Discussion: Optimal Lesion Set for Atrial Fibrillation
A. Marc Gillinov, Cleveland, OH

11:30 AM – 12:30 PM

Basic Science Research: Adult Cardiac

Moderators: T. Brett Reece, Aurora, CO, and Y. Joseph Woo, Stanford, CA

- 11:30 AM Biodegradable Cardiac Patch Seeded With Human-Induced Pluripotent Stem Cell-Derived Cardiomyocytes Promoted the Regeneration of Host Cardiomyocytes
T. Sugiura¹, T. Yi¹, S. Tara¹, N. Hibino², C. K. Breuer¹, T. Shinoka¹
¹Nationwide Children's Hospital, Columbus, OH, ²The Johns Hopkins Hospital, Baltimore, MD
- 11:40 AM The Impact of Mechanical Properties on Wall Stress in Failed Pulmonary Autografts
Y. Xuan¹, A. D. Wisneski¹, A. Mookhoek², P. H. Schoof³, J. Takkenberg², L. Ge⁴, **E. E. Tseng**¹
¹University of California, San Francisco Medical Center and San Francisco VA Medical Center, ²Eramus University Medical Center, Rotterdam, The Netherlands, ³University Medical Center Utrecht, The Netherlands, ⁴San Francisco VA Medical Center, CA

- 11:50 AM Modeling Aortic Valve Insufficiency and Aortic Valve Repair: Applications From Bench to the Operating Room
H. D. Toeg, M. Chamberland, R. Jafar, T. Al-Atassi, M. Labrosse, B. Sohmer, M. Boodhwani
University of Ottawa Heart Institute, Canada

- 12:00 PM Accelerated In Situ Constructive Myocardial Remodeling Process of an Extracellular Matrix Cardiac Patch With Sustained Direct Delivery of a Growth Factor

T. Ota¹, A. Tanaka¹, K. Kawaji¹, A. Patel¹, Y. Tabata², M. P. Gupta¹

¹The University of Chicago, IL, ²Kyoto University, Japan

- 12:10 PM Alternative Therapeutic Strategy for Aortic Aneurysm Using Mesenchymal Stem Cell-Derived Exosomes
M. Kozakai, A. Usui, Y. Narita, H. Oshima, H. Ito, M. Mutsuga, T. Abe, Y. Araki, K. Fujimoto, S. Terazawa, A. Yamawaki-Ogata
Nagoya University Graduate School of Medicine, Japan

- 12:20 PM Novel Tissue-Engineered Vascular Graft With Highly Porous Sponge-Type Scaffold as a Small-Diameter Arterial Graft

T. Sugiura¹, S. Tara¹, H. Nakayama², H. Kurobe³, T. Yi¹, Y. Lee¹, N. Hibino⁴, C. K. Breuer¹, T. Shinoka¹

¹Nationwide Children's Hospital, Columbus, OH, ²Gunze Limited, Kyoto, Japan, ³Tokushima University, Chiba-Nishi General Hospital, Japan, ⁴The Johns Hopkins Hospital, Baltimore, MD

11:30 AM – 12:30 PM

Basic Science Research: General Thoracic

Moderators: Jules Lin, Ann Arbor, MI, and Sunil Singhal, Philadelphia, PA

- 11:30 AM Bioengineering a Partial Tracheal Graft Using 3D-Printed Polymer, Extracellular Matrix, and Mesenchymal Stem Cells
S. Rehmani¹, A. M. Al-Ayoubi², M. Barsky¹, C. Forleiter¹, Z. N. Venitelli³, C. Sinclair⁴, R. Lebovics⁴, F. Bhora⁵
¹Mount Sinai St Luke's Hospital, New York, NY, ²Mount Sinai Health System, New York, NY, ³St Luke's-Roosevelt Hospital Center, New York, NY, ⁴Mount Sinai Roosevelt Hospital, New York, NY, ⁵Mount Sinai Roosevelt and Mount Sinai St Luke's Hospitals, New York, NY
- 11:45 AM Asbestos Mediates Epigenetic Repression of RASSF1A in Normal Human Mesothelial Cells
D. Straughan¹, S. Xi², E. Reardon¹, S. C. Azoury¹, M. Zhang², J. Hong², R. Ripley³, D. S. Schrupp¹
¹National Cancer Institute, Bethesda, MD, ²National Institutes of Health, Bethesda, MD, ³Center for Cancer Research, National Cancer Institute, Bethesda, MD
- 12:00 PM Role of Stress Proteins in the Carcinogenesis and Maintenance of Esophageal Adenocarcinoma
K. D. Hazel, S. O. Kalatardi, A. Sjoberg, M. J. Weyant, D. A. Fullerton, X. Meng
University of Colorado School of Medicine, Aurora
- 12:15 PM Near-Infrared Intraoperative Molecular Imaging Localizes Metastases to the Lung
J. J. Keating¹, S. Nims¹, R. Judy¹, J. Jiang¹, S. Singhal²
¹University of Pennsylvania, Philadelphia, ²Hospital of the University of Pennsylvania, Philadelphia

11:30 AM – 12:30 PM

Congenital Session: Adult Congenital

Moderators: James Jaggers, Aurora, CO, and Kirk R. Kanter, Atlanta, GA

- 11:30 AM** Contemporary Management of Aortic Coarctation in Adults: Mid-Term Results
P. Noly, V. Legris-Falardeau, I. Bouhout, R. Ibrahim, R. Cartier, N. Poirier, P. Demers
Montreal Heart Institute, Canada
- 11:45 AM** One Hundred Percent Freedom From Reintervention at 10 Years With a Porcine Valved Conduit for Right Ventricular Outflow Tract Reconstruction
H. Schubmehl, M. F. Swartz, G. M. Alfieri
University of Rochester, NY
- 12:00 PM** Adult Scimitar Syndrome Repair: Long-Term Results Using an Extracardiac Conduit
N. Carvalho Guerra¹, M. Pernot², M. Al-Yamani², G. Nesseris², X. G. Roques², B. Kreitmann², F. Roubertie²
¹Hopital Cardiologique Haut-Leveque, Bordeaux, France, ²Bordeaux Heart University Hospital, France
- 12:15 PM** Long-Term Outcome of Arterial Switch Operation Conversion After Failed Senning/Mustard Procedure
T. Maeda, M. Nagashima, T. Hiramatsu, T. Sakamoto, G. Matsumura, K. Agematsu, M. Okura, S. Akiyama, S. Okugi, K. Yamazaki
Tokyo Women's Medical University, Japan

11:30 AM – 12:30 PM

Critical Care

Moderators: Rakesh C. Arora, Winnipeg, Canada, and James M. Isbell, Charlottesville, VA

- 11:30 AM** Clinical Significance of Spontaneous Echo Contrast on Extracorporeal Membrane Oxygenation
S. Unai, M. Nguyen, D. Tanaka, N. Gorbachuk, H. Hirose, G. D. Marhefka, N. Cavarocchi
Thomas Jefferson University Hospital, Philadelphia, PA
- 11:45 AM** Restricted Albumin Utilization Is Safe and Cost Effective in a Cardiac Surgery Intensive Care Unit
J. Rabin, T. Meyenburg, A. V. Lowery, J. S. Gammie, D. Herr
University of Maryland Medical Center, Baltimore
- 12:00 PM** Acute Stress Hyperglycemia, Even in Non-Diabetics, Increases the Rate of Atrial Fibrillation in Patients Undergoing Cardiac Surgery
H. A. Jensen¹, E. L. Sarin¹, Y. Ko¹, J. F. Condado¹, M. E. Halkos¹, R. Guyton¹, O. M. Lattouf², J. Miller¹, S. K. Macheers³, D. Murphy¹, E. P. Chen², B. G. Leshnower², B. Keeling¹, M. Rajaei¹, G. Umpierrez¹, A. Syed¹, G. Roberts⁴, V. H. Hourani¹
¹Emory University, Atlanta, GA, ²Emory University School of Medicine, Atlanta, GA, ³Emory St Joseph's Hospital, Atlanta, GA, ⁴Flinders Medical Centre, South Australia
- 12:15 PM** The Relationship Between Blood Transfusions and Infections Following Cardiac Surgery: Is This Just the Blood?
R. Ohkuma, J. C. Grimm, J. Magruder, E. B. Schneider, J. Canner, G. J. Whitman
The Johns Hopkins Hospital, Baltimore, MD

11:30 AM – 12:30 PM

General Thoracic Session: New Technology

Moderators: Shanda H. Blackmon, Rochester, MN, and Michael Lanuti, Boston, MA

- 11:30 AM** Normalization of Exhaled Carbonyl Compounds Following Lung Cancer Resection
E. Schumer, M. Bousamra, J. Trivedi, M. C. Black, V. van Berkel
University of Louisville, KY
- 11:42 AM** Pulmonary Artery Sealing Using an Ultrasonic Energy Vessel-Sealing Device in Video-Assisted Thoracoscopic Lobectomy: Survival Study in a Canine Model
E. Goudie¹, M. Khoreba¹, M. Tahiri¹, P. Hegde¹, V. Thiffault¹, R. Hadjeres², J. Berdugo², P. Ferraro¹, M. Liberman¹
¹CHUM Endoscopic Tracheobronchial and Oesophageal Center, University of Montreal, Canada, ²University of Montreal, Canada
- 11:54 AM** Safety and Effectiveness of Cadaveric Allograft Sternochondral Replacement After Sternectomy: A New Tool for Reconstruction of the Anterior Chest Wall
G. Marulli¹, A. Dell'amore², F. Calabrese¹, M. Schiavon³, N. Daddi², F. Stella², F. Rea³, G. Dolci⁴
¹University of Padova, Italy, ²S. Orsola-Malpighi Hospital, Bologna, Italy, ³University of Padua, Italy, ⁴University of Bologna, Italy
- 12:06 PM** Peroral Endoscopic Myotomy: Early Experience With a Multispecialty Approach
R. J. Marchigiani¹, E. V. Arshava², J. C. Keech², K. R. Parekh³, H. Gerke², R. El Abiad²
¹University of Iowa, North Liberty, ²University of Iowa, Iowa City, ³University of Iowa Hospital & Clinics, Iowa City
- 12:18 PM** Temporary Esophageal Stenting for the Treatment of Benign Dilation-Refractory Esophageal Stenosis
J. Jacob-Brassard¹, V. Thiffault², P. Ferraro³, M. Liberman³, P. Hegde³
¹University of Montreal, Canada, ²CHUM- Notre Dame Hospital, Montreal, Canada, ³CHUM Endoscopic Tracheobronchial and Oesophageal Center, University of Montreal, Canada

11:30 AM – 12:30 PM

STS/CATS/CSCS: Adding New Dimensions to Your Surgical Practice—Optimizing Your Internet Presence and Understanding the Emerging Role of 3-Dimensional Printing in Cardiothoracic Surgery

This collaborative educational session with STS, the Canadian Association of Thoracic Surgeons, and the Canadian Society of Cardiac Surgeons will provide dynamic talks on the emerging topics of online physician marketing, “physician review” websites, and the application of 3-dimensional printing in cardiothoracic surgery. Attendees will learn how to utilize these emerging technologies.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Describe key components to a user-friendly, high-quality website
- Identify ways to optimize their internet/public profile through online marketing
- Discuss how “physician review” websites function to serve the public and how physicians can manage their reputations related to these websites
- Describe the fundamentals of 3-dimensional printing
- Explain how 3-dimensional printing may apply to their practices and patients

Moderators: Sean C. Grondin, Calgary, Canada, and Colin Schieman, Hamilton, Canada

- 11:30 AM **How to Improve Your Internet Profile: Building a Winning Website for You and Your Team**
Christopher W. Seder, River Forest, IL
- 11:40 AM **Social Media in Cardiothoracic Surgery and the Thoracic Surgery Social Media Network: Understanding How Social Media Can Benefit You and Your Patients**
Mara B. Antonoff, Houston, TX
- 11:50 AM **Panel Discussion**
- 12:00 PM **3-Dimensional Printing Applications in Cardiovascular Surgery**
Mackenzie Quantz, London, Canada*
- 12:10 PM **3-Dimensional Printing in General Thoracic Surgery**
Stephen D. Cassivi, Rochester, MN
- 12:20 PM **Panel Discussion**

11:30 AM – 12:30 PM

Quality Improvement Initiatives in Thoracic Surgery

Moderator: TBD

- 11:30 AM **Longitudinal Follow-Up of Lung Cancer Resection From The Society of Thoracic Surgeons General Thoracic Surgery Database**
F. G. Fernandez¹, A. P. Furnary², A. S. Kosinski³, M. W. Onaitis³, D. Boffa⁴, P. Cowper³, S. Kim³, J. P. Jacobs⁵, C. D. Wright⁶, J. B. Putnam⁷
¹Emory University, Atlanta, GA, ²Starr-Wood Cardiac Group, Portland, OR, ³Duke University, Durham, NC, ⁴Yale University, New Haven, CT, ⁵Johns Hopkins All Children's Heart Institute, St Petersburg, FL, ⁶Massachusetts General Hospital, Boston, ⁷Baptist MD Anderson Cancer Center, Jacksonville, FL
Discussant: Benjamin D. Kozower, Charlottesville, VA
- 11:50 AM **Spectrum of Congenital Heart Surgery Case Mix Across US Centers and Impact on Performance Assessment**
S. K. Pasquali¹, A. S. Wallace², J. W. Gaynor³, M. L. Jacobs⁴, S. M. O'Brien², K. D. Hill², M. G. Gaies¹, J. C. Romano¹, D. M. Shahian⁵, J. E. Mayer⁶, J. P. Jacobs⁷
¹University of Michigan, Ann Arbor, ²Duke Clinical Research Institute, Durham, NC, ³The Children's Hospital of Philadelphia, PA, ⁴Johns Hopkins School of Medicine, Newtown Square, PA, ⁵Massachusetts General Hospital, Sudbury, ⁶Boston Children's Hospital, MA, ⁷Johns Hopkins All Children's Heart Institute, St Petersburg, FL
Discussant: Joseph A. Dearani, Rochester, MN
- 12:10 PM **Simulation-Based Training in Cardiac Surgery for Improved Patient Safety**
R. H. Feins¹, H. M. Burkhardt², J. V. Conte³, D. N. Coore⁴, J. I. Fann⁵, G. L. Hicks⁶, N. A. Mokadam⁷, J. C. Nesbitt⁸, P. S. Ramphal⁹, S. E. Schiro¹, K. R. Shen¹⁰, S. Amaanti¹, P. Stewart¹¹, J. D. Walker¹²
¹University of North Carolina, Durham, ²University of Oklahoma Health Sciences Center, Oklahoma City, ³Johns Hopkins Hospital, Baltimore, MD, ⁴University of West Indies, Mona Campus, Jamaica, ⁵Stanford University, CA, ⁶University of Rochester Medical School, NY, ⁷University of Washington, Seattle, ⁸Vanderbilt University Medical Center, Nashville, TN, ⁹University of the West Indies, Nassau, Bahamas, ¹⁰Mayo Clinic, Rochester, MN, ¹¹University of North Carolina Gillings School of Global Public Health, Chapel Hill, ¹²UMass Memorial Medical Center–University Campus, Worcester
Discussant: Stephen C. Yang, Baltimore, MD

12:30 PM – 1:30 PM

BREAK—Visit Exhibits and Scientific Posters

1:15 PM – 5:15 PM

Redefining Practice Through Quality and Evidence: What's New?

The STS National Database is the most valuable tool in cardiothoracic surgery for outcomes assessment, evidence-based practice, and clinical practice guideline development. Founded in 1989, the Database has evolved to meet the changing needs of physicians in a complex health care delivery system. This session will address Database initiatives including the latest updates in clinical practice guideline development, risk modeling, public reporting, and quality measurement.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Describe the methodology for risk adjustment
- Outline the rationale for use of composite measures and the new mitral measures
- Discuss implications of and strategies for physician-level reporting
- Identify strategies for long-term follow-up of patient outcomes
- Discuss the importance of cost and resource utilization in care delivery
- Define data transparency and describe its importance in improving quality
- Apply strategies for using the feedback report for quality improvement
- Explain the rationale for a multidisciplinary approach in quality improvement
- Describe the process to obtain region-specific reports from the STS National Database

Moderators: Vinay Badhwar, Pittsburgh, PA, and Jeffrey P. Jacobs, St Petersburg, FL

- 1:15 PM **Introduction**
- 1:20 PM **STS Clinical Practice Guidelines: What's New?**
John D. Mitchell, Aurora, CO
- 1:50 PM **Question-and-Answer Session**
- 2:05 PM **Local and Regional Quality Collaboratives: What's New?**
John V. Conte, Baltimore, MD*, Donald S. Likosky, Ann Arbor, MI*, and Alan M. Speir, Falls Church, VA
- 2:35 PM **Question-and-Answer Session**
- 2:50 PM **Development and Validation of a Reliable Score to Predict the Risk of Readmission Following Adult Cardiac Surgery**
A. Kilic¹, J. Magruder², J. C. Grimm², S. Dungan², T. C. Crawford², G. J. Whitman², J. V. Conte²
¹The Johns Hopkins University, Baltimore, MD, ²The Johns Hopkins Hospital, Baltimore, MD
- 3:00 PM **Cost Analysis of a Physician Assistant Home Visit Program to Reduce Readmissions Following Cardiac Surgery**
J. P. Nabagiez, M. A. Shariff, W. J. Molloy, J. T. McGinn
Staten Island University Hospital, North Shore-LIJ Health System, NY
- 3:10 PM **Unplanned Readmission Following Lung Resection: Complete Follow-Up in a 1-Year Cohort With Identification of Associated Risk Factors**
K. J. Dickinson, J. B. Taswell, M. S. Allen, S. H. Blackmon, F. C. Nichols, K. Shen, D. A. Wigle, S. D. Cassivi
Mayo Clinic, Rochester, MN
- 3:20 PM **Break**

*Invited

- 3:35 PM** Adhering to Quality Measures in Esophagectomy Improves Overall Survival in All Stages of Esophageal Cancer
P. P. Samson¹, V. Puri¹, S. R. Broderick², D. Kreisel³, A. S. Krupnick³, G. A. Patterson⁴, B. F. Meyers¹, T. D. Crabtree³
¹Washington University School of Medicine, St Louis, MO, ²St Luke's Hospital, Chesterfield, MO, ³Washington University School of Medicine/Barnes Jewish Hospital, St Louis, MO, ⁴Washington University, St Louis, MO
- 3:45 PM** Perfusion Strategies for Neonatal and Infant Aortic Arch Repair: Review of Contemporary Practice Patterns in the STS Congenital Heart Surgery Database
D. B. Meyer¹, A. Wallace², K. Hill², J. P. Jacobs³, M. L. Jacobs⁴, B. Bateson¹
¹Cohen Children's Medical Center, New Hyde Park, NY, ²Duke Clinical Research Institute, Durham, NC, ³Johns Hopkins All Children's Heart Institute, St Petersburg, FL, ⁴Johns Hopkins School of Medicine, Newtown Square, PA
- 3:55 PM** Quality Measurement: What's New?
David M. Shahian, Sudbury, MA
- 4:10 PM** Public Reporting: What's New?
Vinay Badhwar, Pittsburgh, PA
- 4:20 PM** Public Reporting With the STS General Thoracic Surgery Database
Benjamin D. Kozower, Charlottesville, VA
- 4:30 PM** STS Congenital Heart Surgery Database Risk Models
Marshall L. Jacobs, Newtown Square, PA
- 4:40 PM** National Quality Initiatives (National Quality Forum, AMA-convened Physician Consortium for Performance Improvement, and CMS Physician Compare Website): What's New?
Jeffrey P. Jacobs, St Petersburg, FL
- 4:55 PM** Physician Reimbursement (CPT and RUC): What's New?
Peter K. Smith, Durham, NC
- 5:05 PM** Question-and-Answer Session/Discussion

1:30 PM – 3:30 PM**Adult Cardiac Session: Aorta I****Moderators:** Derek R. Brinster, New York, NY, and Wilson Y. Szeto, Philadelphia, PA

- 1:30 PM** Imaging Experience of Type II Hybrid Aortic Arch Repair: Lessons Learned From 6 Years of Zone 0 Landing and Evolution to Zone 2 Arch Repair
J. J. Appoo¹, V. Kotha², E. Herget³
¹Libin Cardiovascular Institute, University of Calgary, Canada, ²Foothills Medical Centre, University of Calgary, Canada, ³University of Calgary, Canada
- 1:45 PM** Endovascular Arch Repair in Zone 0 and Zone Z Arch Disease
Joseph E. Bavaria, Philadelphia, PA
- 2:00 PM** Open Repair of Thoracoabdominal Aortic Aneurysm in Patients ≤50 Years of Age
J. S. Coselli¹, O. A. Preventza², K. I. de la Cruz², S. Green², M. D. Price², S. A. LeMaire¹
¹Baylor College of Medicine, Houston, TX, ²Baylor College of Medicine/Texas Heart Institute, Houston
- 2:15 PM** Clinical Outcomes of the David V Valve-Sparing Root Replacement Compared to Bioprosthetic Valve Conduits for Aortic Root Aneurysms
J. Esaki¹, B. G. Leshnower², J. Binongo³, Y. Lasanajak³, M. E. Halkos³, R. Guyton³, E. P. Chen³
¹Otsu Red Cross Hospital, Japan, ²Emory University School of Medicine, Atlanta, GA, ³Emory University, Atlanta, GA

- 2:30 PM** The Concept of Selective Antegrade Cerebral Perfusion During Mild (28°C) Systemic Hypothermia Can Safely and Reproducibly Be Applied to All Aspects of Aortic Arch Surgery: Single-Center Experience Over a 15-Year Period in 587 Consecutive Patients
A. El-Sayed Ahmad, N. Papadopoulos, A. Moritz, **A. Zierer**
University Hospital Frankfurt, Germany
- 2:45 PM** Morphologic and Functional Markers of Aortopathy in Patients With Bicuspid Aortic Valve Insufficiency vs Stenosis
E. Girdauskas¹, M. Rouman¹, M. A. Borger², T. M. Kuntze³, B. Fey¹, K. Disha¹
¹Central Hospital Bad Berka, Germany, ²Columbia University Medical Center, New York, NY, ³Zentralklinik Bad Berka, Germany
- 3:00 PM** Bicuspid Aortic Valve Insufficiency With Root Aneurysm: Repair With Root Reimplantation
Edward P. Chen, Atlanta, GA
- 3:15 PM** Redo Thoracoabdominal Aortic Aneurysm Repair: A Single-Center Experience Over 25 Years
R. Afifi¹, A. E. Trott¹, H. K. Sandhu², C. C. Miller¹, A. L. Estrera¹, H. J. Safi¹
¹University of Texas Health Science Center, Houston, ²University of Texas Medical School, Houston

1:30 PM – 3:30 PM**Adult Cardiac Session: Ischemic****Moderators:** Frank W. Sellke, Providence, RI, and Brett C. Sheridan, Chapel Hill, NC

- 1:30 PM** Failure-to-Rescue Rates After Coronary Artery Bypass Grafting: An Analysis From the STS Adult Cardiac Surgery Database
F. H. Edwards¹, V. A. Ferraris², P. A. Kurlansky³, K. W. Lobdell⁴, X. He⁵, S. O'Brien⁶, A. P. Furnary⁷, J. Rankin⁸, C. M. Vassileva⁹, F. L. Fazzalari¹⁰, M. J. Magee¹¹, V. Badhwar¹², Y. Xian⁶, J. P. Jacobs¹³, M. C. Wyler von Ballmoos¹⁴, D. Shahian¹⁵
¹University of Florida, Jacksonville, ²University of Kentucky Chandler Medical Center, Lexington, ³Columbia University, New York, NY, ⁴Sanger Heart & Vascular Institute/Carolinas HealthCare System, Charlotte, NC, ⁵Duke Clinical Research Institute, Durham, NC, ⁶Duke University, Durham, NC, ⁷Starr-Wood Cardiac Group of Portland, OR, ⁸Cardiothoracic Surgery Associates, Nashville, TN, ⁹Southern Illinois University School of Medicine, Springfield, ¹⁰University of Michigan Medical School, Rochester, ¹¹HCA North Texas Division, Dallas, ¹²University of Pittsburgh, PA, ¹³Johns Hopkins All Children's Heart Institute, St Petersburg, FL, ¹⁴Medical College of Wisconsin, Milwaukee, ¹⁵Massachusetts General Hospital, Sudbury
- 1:45 PM** Total Arterial Coronary Revascularization: A Superior Strategy for Diabetic Patients Who Require Coronary Surgery
J. Tatoulis¹, R. Wynne², B. F. Buxton², P. Skillington³
¹Royal Melbourne Hospital, University of Melbourne, Australia, ²University of Melbourne, Australia, ³Royal Melbourne Hospital, Parkville, Australia
- 2:00 PM** Effects of Blood Transfusion on Late Cardiac and Noncardiac Mortality After Coronary Artery Bypass Grafting
T. A. Schwann¹, J. R. Habib², V. Nauffa³, J. M. Khalifeh², M. R. Bonnell¹, M. Engoren⁴, R. H. Habib²
¹University of Toledo Medical Center, OH, ²American University of Beirut, Lebanon, ³The Johns Hopkins Hospital, Baltimore, MD, ⁴University of Michigan, Ann Arbor

2:15 PM The Optimal Composite Graft Strategy for Multiple Sequential Radial Artery Grafting to the Non-Left Anterior Descending Artery Territories in Aortic No-Touch Total Arterial Off-Pump Coronary Artery Bypass Grafting
Y. Shimahara, T. Fujita, H. Hata, Y. Kume, S. Miura, J. Kobayashi
National Cerebral and Cardiovascular Center, Osaka, Japan

2:30 PM Coronary Artery Bypass Surgery With Hypothermic Ventricular Fibrillation Without Aortic Occlusion: A Contemporary Study on Early Results and Long-Term Survival
P. E. Antunes, C. F. Branco, F. Soares, M. J. Antunes
Center of Cardiothoracic Surgery, Coimbra, Portugal

2:45 PM A Comparison of Graft Stenosis and Occlusion Between Radial Artery and Saphenous Veins 5 Years After Coronary Artery Bypass Grafting: A Secondary Analysis of the Radial Artery Patency Study
M. Yamasaki¹, S. E. Fremes¹, S. Deb¹, H. Tsubota¹, F. Moussa², E. Cohen¹, S. Radhakrishnan¹, J. Dubbin¹, D. Ko¹, A. Kiss³, L. Schwartz⁴
¹Schulich Heart Centre, Sunnybrook Health Sciences Centre, Toronto, Canada, ²University of Toronto/Sunnybrook Health Sciences Centre, Canada, ³Institute of Health Policy Management and Evaluation, University of Toronto, Canada, ⁴University Health Network, Toronto, Canada

3:00 PM The Racial Paradox in Multiarterial Conduit Utilization for Coronary Artery Bypass Grafting
W. B. Keeling¹, J. Binongo¹, M. E. Halkos¹, B. G. Leshnower², D. Nguyen¹, E. P. Chen¹, E. L. Sarin¹, J. Miller¹, S. K. Macheers³, O. M. Lattouf², R. A. Guyton⁴, V. H. Thourani¹
¹Emory University, Atlanta, GA, ²Emory University School of Medicine, Atlanta, GA, ³Emory St Joseph's Hospital, Atlanta, GA, ⁴The Emory Clinic, Inc, Atlanta, GA

3:15 PM What Are the Barriers to Multiple Arterial Grafting?
Joseph F. Sabik III, Cleveland, OH

1:30 PM – 3:30 PM

Congenital Session: Pediatric Congenital I

Moderators: Andrew C. Fiore, St Louis, MO, and Mark D. Rodefeld, Indianapolis, IN

1:30 PM Selection Schemes and Technical Diversities of Extra-Anatomic Bypass in Complex and Recurrent Aortic Coarctation and Hypoplastic Arch
E. B. Delmo Walter¹, B. Hartmann¹, A. Ekkernkamp¹, R. Hetzer²
¹Trauma Center Berlin, Germany, ²Herzzentrum Cottbus, Germany

1:45 PM Association of 24/7 In-House Attending Coverage With Outcomes in Children Undergoing Heart Operations: An Analysis of the Virtual Pediatric Systems Database
P. Gupta¹, M. Rettiganti², H. E. Jeffries³, N. Brundage⁴, B. P. Markovitz⁵, M. C. Scanlon⁶, J. M. Simsic⁷
¹Arkansas Children's Hospital, Little Rock, ²University of Arkansas for Medical Sciences, Little Rock, ³Seattle Children's Hospital, WA, ⁴VPS, LLC, Los Angeles, CA, ⁵Children's Hospital Los Angeles, CA, ⁶Medical College of Wisconsin, Milwaukee, ⁷Nationwide Children's Hospital, Columbus, OH

2:00 PM A Structured Blood Conservation Program in Pediatric Cardiac Surgery: More Is Better
S. Gunaydin¹, K. McCusker²
¹Adatip Hospital, Ankara, Turkey, ²Portsmouth Regional Hospital, NH

2:15 PM Evaluation of Explanted CorMatrix™ Intra-Cardiac Patches in Children With Congenital Heart Disease
J. S. Nelson¹, R. G. Ohye², M. Si², A. Heider³
¹University of North Carolina, Chapel Hill, ²University of Michigan, Ann Arbor, ³University of Michigan Medical School, Ann Arbor

2:30 PM Symptoms Do Not Correlate With Coronary Artery Intramural Length or Ostial Diameter in Patients With Anomalous Aortic Origin of Coronary Artery
S. Balasubramanya, M. C. Monge, O. Eltayeb, A. E. Sarwark, J. M. Costello, C. K. Rigsby, A. R. Popescu, C. L. Backer
Ann & Robert H. Lurie Children's Hospital of Chicago, IL

2:45 PM Long-Term Outcomes of Complete Vascular Ring Division in Children: 36-Year Experience From a Single Institution
P. S. Naimo¹, E. Sawan², J. S. Donald², T. A. Fricke², Y. d'Udekem¹, C. P. Brizard², I. E. Konstantinov¹
¹Royal Children's Hospital, Melbourne, Australia, ²Royal Children's Hospital, Parkville, Australia

3:00 PM Post-Fontan Follow-Up Outcomes in Patients With a Pulsatile Glenn Shunt
S. Ferns¹, C. F. Elzein², S. Subramanian², M. N. Ilbawi²
¹University of North Carolina, Chapel Hill, ²Advocate Children's Hospital, Oak Lawn, IL

3:15 PM Mid-Term Results of a Total Cavopulmonary Connection With an Extracardiac Conduit Performed in the Second Decade of Life
A. Metras¹, V. Fouilloux², M. Al-Yamani³, N. Tafer³, X. G. Roques³, D. R. Metras⁴, B. Kreitmann³, F. Roubertie³
¹Bordeaux Hospital University, Pessac, France, ²Children's Hospital La Timone Marseille, France, ³Bordeaux Heart University Hospital, France, ⁴Centre Hospitalier La Timone, Marseille, France

1:30 PM – 3:30 PM

General Thoracic Session: Lung Cancer I—Diagnosis and Staging

Moderators: Leah M. Backhus, Stanford, CA*, and Subroto Paul, New York, NY

1:30 PM Thoracic Surgery-Driven Free Lung Cancer Screening in an Underserved Region Demonstrated Triple the Incidence of Lung Cancer Compared to the National Lung Screening Trial
E. L. Simmerman¹, N. B. Thomson III¹, C. Schroeder²
¹Georgia Regents Medical Center, Augusta, ²Georgia Regents University, Augusta

1:45 PM Operating on a Smoking Patient: A Survey Among US Thoracic Surgeons
B. Weksler, **K. A. Marino**, R. Klesges, Z. Bursac, M. A. Little, J. L. Sullivan
University of Tennessee Health Science Center, Memphis

2:00 PM BRAF Mutation in Resected Stage I Lung Adenocarcinoma Is a Marker of Worse Outcome
N. S. Lui, L. F. Tapias, D. J. Mathisen, **M. Lanuti**
Massachusetts General Hospital, Boston

2:15 PM Lung Adenocarcinomas Presenting as Multiple Lesions With Ground-Glass Opacities Should Be Treated as Independent Events
Y. Zhang¹, H. Chen²
¹Fudan University Shanghai Cancer Center, China, ²Fudan University Shanghai Cancer Center/Shanghai Chest Hospital, Shanghai Jiaotong University, China

*Invited

- 2:30 PM** **A Risk Score to Assist in Selecting Lobectomy vs Sublobar Resection for Early Stage Non–Small-Cell Lung Cancer**
B. Gulack¹, C. Yang², B. Yerokun¹, B. C. Tong², M. Onaitis², T. A. D'Amico², D. Harpole¹, M. G. Hartwig², M. F. Berry³
¹Duke University, Durham, NC, ²Duke University Medical Center, Durham, NC, ³Stanford University, CA
- 2:45 PM** **Induction Chemotherapy for cN1 Non–Small-Cell Lung Cancer Is Not Associated With Improved Survival**
P. J. Speicher¹, B. Gulack¹, C. Yang², D. Harpole¹, T. A. D'Amico², M. F. Berry³, M. G. Hartwig²
¹Duke University, Durham, NC, ²Duke University Medical Center, Durham, NC, ³Stanford University, CA
- 3:00 PM** **Lung Cancer Breath Detection**
 Michael Bousamra, Louisville, KY

1:30 PM – 3:30 PM**General Thoracic Session: Lung Transplantation**

Moderators: Pablo Sanchez, Baltimore, MD, and Mathew Thomas, Jacksonville, FL

- 1:30 PM** **Lung Transplant Outcomes in Patients With Coronary Artery Bypass Grafts**
T. Songdechakraiwut¹, T. J. Richards¹, M. N. Crespo¹, N. Shigemura¹, J. Pilewski², J. D'Cunha¹, C. A. Bermudez³
¹University of Pittsburgh Medical Center, PA, ²University of Pittsburgh, PA, ³University of Pennsylvania, Philadelphia
- 1:45 PM** **Can Donor Lungs With Prolonged Storage Be Reconditioned by Ex Vivo Lung Perfusion?**
T. Okamoto, D. Wheeler, C. Farver, K. R. McCurry
 Cleveland Clinic, OH
- 2:00 PM** **Cold Preservation of Donation-After-Cardiac Death Lungs Following Ex Vivo Lung Perfusion Allows Transport From Lung Rehabilitation Centers to Suitable Recipients**
E. J. Charles¹, M. E. Huerter², C. E. Wagner³, A. K. Sharma¹, Y. Zhao¹, J. M. Isbell¹, C. L. Lau³, C. Tribble³, V. E. Laubach³, I. L. Kron⁴
¹University of Virginia Health System, Charlottesville, ²University of Illinois at Chicago Health Sciences Center, ³University of Virginia, Charlottesville, ⁴University of Virginia Medical Center, Charlottesville
- 2:15 PM** **Two Decades of Lung Retransplantation: A Single-Center Experience**
D. J. Hall¹, E. V. Bell², T. M. Beaver³, T. N. Machuca¹
¹University of Florida College of Medicine, Gainesville, ²Mayo Clinic Florida, Gainesville, ³University of Florida, Gainesville
- 2:30 PM** **Antireflux Surgery Is Safe and Effective Following Lung Transplantation**
D. D. Odell¹, J. D. Luketich¹, E. G. Chan², N. Shigemura¹, M. N. Crespo¹, M. Morrell¹, J. Pilewski³, J. D'Cunha³
¹University of Pittsburgh Medical Center, Squirrel Hill, PA, ²University of Pittsburgh Medical Center, Squirrel Hill, PA, ³University of Pittsburgh, PA
- 2:45 PM** **Bridging Strategies to Lung Transplantation Do Not Have an Impact on 1-Year Survival**
M. J. Mulligan¹, A. T. Iacono¹, B. P. Griffith¹, S. Pham², J. S. Gammie², G. J. Bittle¹, Z. N. Kon¹, P. Sanchez²
¹University of Maryland School of Medicine, Baltimore, ²University of Maryland, Baltimore
- 3:00 PM** **Debate: Is Lung Retransplantation Justified From an Ethical and Economical Perspective?**
PRO: TBD
CON: Kenneth R. McCurry, Cleveland, OH*

1:30 PM – 3:30 PM**SVS @ STS: Sharing Common Ground for Cardiovascular Problems**

In this session from STS and the Society for Vascular Surgery, cardiothoracic and vascular surgeons will provide perspectives on the contemporary management of type B aortic dissection, as well as the management of patients with thoracoabdominal aortic aneurysms and thoracic outlet syndrome.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Formulate a plan based on experience and published data for management of patients with type B thoracic aortic dissection
- Identify treatment options (open or endovascular) for patients with thoracoabdominal aortic aneurysms
- Describe the best medical management practices for treatment of symptomatic thoracic outlet syndrome

Moderators: A. Michael Borkon, Kansas City, MO, and Jason T. Lee, Stanford, CA

- 1:30 PM** **Introduction**
- 1:35 PM** **Conservative Management of Acute Type B Dissections: "To Treat Now or Later"**
 Michael P. Fischbein, Stanford, CA
- 1:50 PM** **Aggressive Stent Grafting**
 Joseph V. Lombardi, Camden, NJ
- 2:05 PM** **Discussion**
- 2:15 PM** **Thoracic Aortic Aneurysm: Why Open Treatment?**
 Joseph S. Coselli, Houston, TX
- 2:30 PM** **Thoracic Aortic Aneurysm: Why Endovascular Repair?**
 Gustavo Oderich, Rochester, MN
- 2:45 PM** **Discussion**
- 2:55 PM** **Arterial/Venous Thoracic Outlet Syndrome: How I Do It—STS Perspective**
 John A. Kern, Charlottesville, VA
- 3:10 PM** **Arterial/Venous Thoracic Outlet Syndrome: How I Do It—SVS Perspective**
 Julie A. Freischlag, Sacramento, CA
- 3:25 PM** **Discussion**

1:30 PM – 3:30 PM**30th Anniversary Celebration of Women in Thoracic Surgery: Innovations and Contributions of WTS and STS Members**

This session will highlight significant professional contributions by STS members who also are WTS members. The changing face of cardiothoracic surgery, as well as strategies for mentoring female and minority surgeons, also will be discussed.

Learning Objectives

Upon completion of this activity, participants should be able to:

- State the barriers to mentoring female and minority surgeons
- Demonstrate knowledge of significant contributions by women in each cardiothoracic surgery discipline
- Describe how cardiothoracic surgery will look in the future
- Describe the strengths that women possess as leaders
- Explain the importance and need for men to mentor and sponsor female and minority surgeons due to the lack of large numbers of female and minority mentors in leadership positions


*Invited

Moderators: Jessica S. Donington, New York, NY, Leslie J. Kohman, Syracuse, NY, and Jennifer S. Lawton, St Louis, MO

- 1:30 PM Introduction
- 1:32 PM The Untapped Potential of Women as Leaders
Douglas E. Wood, Seattle, WA
- 1:47 PM Pioneers and Significant Contributions in Congenital Heart Surgery
Kristine J. Guleserian, Dallas, TX
- 2:02 PM Pioneers and Significant Contributions in Adult Cardiac Surgery
Andrea J. Carpenter, San Antonio, TX
- 2:17 PM Pioneers and Significant Contributions in General Thoracic Surgery
Yolonda L. Colson, Boston, MA
- 2:32 PM Changes in the Demographics of American Board of Thoracic Surgery Diplomates Since 1961
William A. Baumgartner, Baltimore, MD
- 2:47 PM Mentoring Female and Minority Surgeons
G. Alexander Patterson, St Louis, MO
- 3:02 PM Diversity in Cardiothoracic Surgery and the Future: What Will the Face of CT Surgery Be?
Valerie W. Rusch, New York, NY
- 3:17 PM Panel Discussion

3:30 PM – 4:15 PM

BREAK—Visit Exhibits and Scientific Posters

3:30 PM – 5:30 PM 

International Symposium & Reception: The Ethics and Practicality of Using New Technologies to Treat Cardiothoracic Diseases in Different Parts of the World

This symposium will focus on the viability of employing new technologies to treat cardiothoracic diseases in certain parts of the world, specifically, evolving treatment approaches for rheumatic heart disease, endocarditis, and mitral valve disease. The session also will address the ethics of testing new technologies in developing countries that could never afford the widespread dispersal of the technology in question.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Identify different approaches and emerging trends in the treatment of rheumatic heart disease, endocarditis, and mitral valve disease in different parts of the world
- Describe the ethical concerns regarding the testing of new cardiothoracic medical devices in developing countries
- List the challenges of introducing new technologies for the treatment of cardiothoracic diseases into developing countries in view of cost considerations
- Elucidate different perspectives on the health policy, corporate, institutional, economic, and ethical factors that affect the international development, testing, and dispersal of new technologies for the treatment of cardiothoracic diseases

Moderator: A. Pieter Kappetein, Rotterdam, The Netherlands

3:30 PM Introduction

Rheumatic Heart Disease

3:35 PM Rheumatic Heart Disease: Between a Rock and a Heart Place
Taweesak Chotivatanapong, Nonthaburi, Thailand

 Indicates that a ticket is required to attend.

3:42 PM Question-and-Answer Session

The Modern Era of Endocarditis Treatment

- 3:50 PM Emerging Trends in Infective Endocarditis
Adnan Cobanoglu, Beachwood, OH
- 3:57 PM Different Treatment Approaches in Japan
Yutaka Okita, Kobe, Japan
- 4:01 PM Different Treatment Approaches in South Korea
Jae Won Lee, Seoul, South Korea

The Future of Transcatheter Mitral Valve Disease Treatment in Different Parts of the World

- 4:05 PM New Technologies Available and On the Horizon
Joseph E. Bavaria, Philadelphia, PA
- 4:12 PM Varieties of Mitral Valve Disease: Is the Developing World Ready for New Devices?
Arkalud Sampath Kumar, Delhi, India

The Ethics of Testing New Devices in Developing Countries

- 4:20 PM Panel Discussion: Where Are Devices Being Tested? The Ethics of Testing Devices in Countries Where the Technology Likely Will Not Be Dispersed
Joseph E. Bavaria, Philadelphia, PA, Steven F. Bolling, Ann Arbor, MI, William E. Cohn, Houston, TX, Adrian A. Ebner Navarro, Asuncion, Paraguay*, Nobuhiro Handa, Tokyo, Japan, A. Pieter Kappetein, Rotterdam, The Netherlands, John C. Laschinger, Silver Spring, MD, Robert M. Sade, Charleston, SC, and Moritz C. Wyler von Ballmoos, Milwaukee, WI

4:15 PM – 5:15 PM

Surgical Motion Picture Matinee: Adult Cardiac

Moderators: Edward P. Chen, Atlanta, GA, and Leora T. Yarboro, Charlottesville, VA

- 4:15 PM Endovascular Repair of Thoracoabdominal Aortic Aneurysm With Custom-Manufactured, Fenestrated-Branched Stent Grafts
L. E. Greiten, G. S. Oderich
Mayo Clinic, Rochester, MN
- 4:27 PM An Overlooked Tool to Address Mitral Regurgitation at the Time of Septal Myectomy for Hypertrophic Obstructive Cardiomyopathy
A. A. Shah¹, D. Glower², J. G. Gaca¹
¹Duke University Medical Center, Durham, NC, ²Duke University, Durham, NC
- 4:39 PM Minimally Invasive Replacement of the Hemi Arch, Ascending Aorta, and Aortic Root With Reimplantation of the Coronary Arteries Utilizing Circulatory Arrest and Retrograde Cerebral Perfusion
J. Lamelas
Mount Sinai Medical Center, Miami Beach, FL
- 4:51 PM Minimally Invasive Left Ventricular Assist Device Implantation
Y. Lin, L. D. Joyce, J. M. Stulak, R. C. Daly, D. L. Joyce
Mayo Clinic, Rochester, MN
- 5:03 PM Repair of Bicuspid Aortic Valve Insufficiency and Ascending Aortic Aneurysm Associated With Coronary Anomalies
Y. Choi¹, D. Mazzitelli², J. Rankin³, K. Ferdinand⁴, A. Deppe⁴, T. C. Wahlers¹
¹University of Cologne, Germany, ²German Heart Center Munich, ³Cardiothoracic Surgery Associates PLLC, Nashville, TN, ⁴University Hospital Cologne, Germany

*Invited

4:15 PM – 5:15 PM

Surgical Motion Picture Matinee: Congenital

Moderators: Bahaaldin Alsoufi, Atlanta, GA, and Aditya K. Kaza, Boston, MA

- 4:15 PM The Senning/Rastelli Operation for Congenitally Corrected Transposition of the Great Arteries With Pulmonary Stenosis: A Technique to Prevent Pulmonary Vein Stenosis
J. S. Nelson¹, E. L. Bove²
¹University of North Carolina, Chapel Hill, ²University of Michigan, Ann Arbor
- 4:27 PM Double Switch Operation With Combined Nikaidoh and Senning Procedures for Congenitally Corrected Transposition of the Great Arteries/Ventricular Septal Defect/ Pulmonary Stenosis
Ryo Aeiba
Keio University, Tokyo, Japan
- 4:39 PM Truncal Half Turn and Senning Operation: Anatomical Correction of Congenitally Corrected Transposition of Great Arteries (IDD) With Pulmonary Stenosis, Ventricular Septal Defect, Situs Inversus, and Levocardia
P. Murin, M. Cho, J. Photiadis
German Heart Institute Berlin
- 4:51 PM A Novel Technique for Aortic Arch Reconstruction With Pulmonary Autograft Tube for Right-Sided Interrupted Aortic Arch
N. Kato¹, M. Yamagishi²
¹Children's Medical Center, Kyoto Prefectural University of Medicine, Japan, ²Kyoto Prefectural University of Medicine, Japan
- 5:03 PM From Right Arch to Left Arch: Modified Norwood Procedure for a Newborn Infant With Tricuspid Atresia, Transposition of Great Arteries, and Right Arch With Complete Vascular Ring
C. Hsu, Y. Chen, S. Huang
National Taiwan University Hospital, Taipei

4:15 PM – 5:15 PM

Surgical Motion Picture Matinee: General Thoracic

Moderators: K. Robert Shen, Rochester, MN, and Sandra L. Starnes, Cincinnati, OH

- 4:15 PM Tracheal Resection and Carinal Reconstruction for Squamous Cell Carcinoma
T. S. Lancaster¹, S. B. Krantz¹, G. A. Patterson²
¹Washington University School of Medicine, St Louis, MO, ²Washington University, St Louis, MO
- 4:27 PM Is Single Anatomical Segmentectomy of the Mediobasal Segment (S7) Possible?
K. Shimizu¹, T. Nagashima¹, Y. Ohtaki¹, K. Obayashi², S. Nakazawa¹, T. Yazawa¹, H. Igai³, M. Kamiyoshihara³, T. Yajima¹, R. Onozato¹, A. Mogi¹, H. Kuwano¹
¹Gunma University Hospital, Maebashi, Japan, ²Gunma University, Maebashi, Japan, ³Maebashi Red Cross Hospital, Japan
- 4:39 PM Minimally Invasive Nerve Root-Sparing Resection of a Thoracic Schwannoma: A Case Report
E. A. Gillaspie, S. H. Blackmon
Mayo Clinic, Rochester, MN

- 4:51 PM Thoracoscope-Assisted Minimally Invasive Multiple-Level Rib Fixation and Lung Repair in Traumatic Chest Wall Injury
K. Han¹, H. Kim¹, H. Lee¹, Y. Cho²
¹Korea University Guro Hospital, Seoul, ²Korea University Medical Center, Seoul

- 5:03 PM Total Endoscopic First Rib Resection for Thoracic Outlet Syndrome
R. George, R. Milton, N. Chaudhuri, K. Papagiannopoulos
St James's University Hospital, Leeds, United Kingdom

5:00 PM – 6:30 PM

Scientific Posters and Wine

5:30 PM – 6:25 PM

Business Meeting (STS Members Only)

6:30 PM – 7:30 PM

STS-PAC Reception

7:00 PM – 10:30 PM 

STS Social Event: Corona Ranch

Join your colleagues for an evening of mariachi music, delicious food, and ice-cold margaritas at Corona Ranch, nestled in the shadows of nearby mountains. You can compete against fellow attendees in “cowboy games” and get a front-row seat for an exciting rodeo that will incorporate bronco and bull riding, high-speed horse maneuvers, and trick roping. Don't miss this opportunity to relax and have fun in an Old Mexico environment. (Please note that this is an outdoor event and the desert can get chilly at night, so please dress accordingly.)



 Indicates that a ticket is required to attend.



TUESDAY, JANUARY 26, 2016

6:30 AM – 4:30 PM

Registration: STS Annual Meeting

9:00 AM – 3:30 PM

Exhibits Open

9:00 AM – 5:00 PM

Scientific Posters Open

7:30 AM – 8:30 AM

Early Riser Session 1

Women in Thoracic Surgery: Patient-Centered Care and Research

Leah M. Backhus, Stanford, CA, Benjamin D. Kozower, Charlottesville, VA, Valerie A. Williams, Cincinnati, OH, and Stephen C. Yang, Baltimore, MD*

Patient-centered medicine recently has attracted renewed attention. The approach focuses on patient participation in clinical decision making by taking into account a patient's perspective and individualizing medical care based on his or her needs and preferences. More than ever, patients have a desire to take an active role in pre- and post-treatment care plans. Attention to a patient's needs and circumstances when planning care is associated with improved health care outcomes. Patient-centered research allows patients and physicians to identify and discuss the medical information that is most relevant to a patient's individual case. Surgeons must understand and recognize the importance of this approach and identify ways to incorporate it into their practices.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Identify ways to incorporate patient-centered care into clinical practice (ie, disease surveillance, survivorship)
- Describe important factors to include when developing patient-centered care strategies
- Identify ways research is being incorporated to optimize patient care
- Explain funding opportunities for patient-centered research

Early Riser Session 2

Task Force on Military Affairs: Disaster Preparedness and Mass Casualty—The Role of a Cardiothoracic Surgeon

Danny Chu, Pittsburgh, PA, Elizabeth A. David, Davis, CA, Emily A. Farkas, Los Angeles, CA, and Kenneth L. Mattox, Houston, TX

Natural disasters and terrorist threats are, unfortunately, becoming increasingly common. Cardiothoracic surgeons have an intimate knowledge of traumatic thoracic vascular injury, which carries an extremely high mortality rate. Additionally, as team leaders, CT surgeons can play a vital role in organizing a response when unexpected disasters occur. However, many CT surgeons have not been fully trained in disaster preparedness and response. This session will focus on the role of the cardiothoracic surgeon in coordinating disaster preparedness protocols and managing mass casualty situations in an urban setting. Expert panelists include world-renowned cardiothoracic/trauma surgeon Kenneth Mattox, MD, who will share his personal experience in the wake of Hurricane Ike, and Emily Farkas, MD, who will share her experiences in Nepal as a surgical volunteer following the recent earthquake.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Describe what constitutes a mass casualty event
- Identify the relationship between mass casualty events and disaster preparedness
- Describe the role of cardiothoracic surgeons in disaster preparedness and dealing with a mass casualty situation
- Identify barriers to appropriate disaster preparedness and review potential solutions to these barriers

Early Riser Session 3

Transitioning to Retirement

James R. Edgerton, Dallas, TX, Robert W. Emery, Minneapolis, MN, Deepak M. Gangahar, Lincoln, NE, and John W. Hammon, Winston-Salem, NC*

This session will provide advice on how to prepare for and plan retirement from clinical practice, as well as offer alternative activities in which to participate after leaving practice. Attendees will learn about the psychological and financial requirements necessary for a successful transition from clinical practice to retirement.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Explain methods of saving for retirement and avoiding debt
- Describe the concept of retiring at the correct time
- Discuss potential activities in which to participate after retirement
- Describe the psychological aspects of leaving a rewarding, high-profile, ego-fulfilling profession
- Describe how to maintain educational opportunities and licensure

View full agendas for the Early Riser Sessions at www.sts.org/annualmeeting.

**Invited*

Early Riser Session 4**How to Acquire and Use Data From the STS National Database for Research**

Vinay Badhwar, Pittsburgh, PA, Henning A. Gaissert, Boston, MA, Jane Han, Chicago, IL, Jeffrey P. Jacobs, St Petersburg, FL, and Marshall L. Jacobs, Newtown Square, PA

This session will provide attendees with actionable advice on how to conduct research utilizing data from the STS National Database. Faculty members include STS members who have directed multiple successful research projects using the STS National Database.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Describe the process for creating a Data Request to access STS National Database data for research
- Discuss the differences between Major Data Requests and Minor Data Requests
- Explain the process of developing a hypothesis, specific aims, and a research plan

Early Riser Session 5**The Annals Academy**

Shanda H. Blackmon, Rochester, MN, Mark K. Ferguson, Chicago, IL, Jennifer C. Hirsh-Romano, Ann Arbor, MI, Jennifer S. Lawton, St Louis, MO, and G. Alexander Patterson, St Louis, MO

This session is the perfect venue for young investigators and those interested in improving their scholarly research abilities to interact with *Annals* editors and senior investigators. *The Annals Academy* seeks to endow potential authors with the necessary tools to turn their data into interesting and potentially practice-improving scholarly articles. Attendees will be exposed to all aspects of the article preparation process, from hypothesis generation to final formatting of manuscripts in preparation for online submission.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Generate a definitive and interesting purpose to their study
- Declare the limitations of their study and describe the importance of not overstating their findings
- Prepare/format their manuscripts and figure files correctly to conform with journal standards
- Describe how to enhance their study with engaging and instructive video/other media content
- Locate the correct venue for their work and properly identify its priority for publication

Early Riser Session 6**New Technologies and Controversies in Esophageal Disease**

Hiran C. Fernando, Boston, MA, and Brian E. Louie, Seattle, WA

This session will provide an in-depth review of three esophageal surgery areas, including less invasive antireflux surgeries (LINX, transoral incisionless fundoplication, and MUSE), flexible endoscopic procedures (peroral endoscopic myotomy, cricopharyngeal myotomy, and submucosal tumors), and techniques to reduce axial and radial diaphragmatic tension during paraesophageal hernia repair. In each area, experts will share their experiences and review current results.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Identify new treatment options for gastroesophageal reflux disease (GERD) and their role in the management along the GERD spectrum
- Describe techniques for natural orifice or endoscopic treatments for achalasia, submucosal tumors, and esophageal diverticula
- Identify options for reducing axial tension and radial diaphragm tension during paraesophageal hernia repair
- Describe the role of mesh in hiatal hernia repair

Early Riser Session 7**Lung Cancer Screening: Policy, Program Development, and Patient Management**

Ella Kazerooni, Ann Arbor, MI, Brady McKee, Burlington, MA, Gaetano Rocco, Naples, Italy, and Douglas E. Wood, Seattle, WA

Although lung cancer is the leading cause of cancer death in the United States and in most of the world, early detection through lung cancer screening has not been a part of public policy, in contrast to other common cancers. The National Lung Screening Trial demonstrated a 20% reduction in lung cancer mortality in people at high risk for lung cancer through screening with low-dose computed tomography. The finding helped lead to a major US policy change in support of lung cancer screening for both privately insured and Medicare patients. This session will help attendees learn the background, rationale, and controversies of lung cancer screening policies, provide indications for screening and the management of screen-detected nodules, and provide fundamentals and regulatory requirements important in developing a new lung cancer screening program.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Outline the policy steps of lung cancer screening, the role of thoracic surgeons, and the impact on patient access and equity
- Articulate the rationale for and limitations of current eligibility criteria for lung cancer screening
- List the algorithms and tools for responsible management of screen-detected lung nodules
- Explain the basic components of setting up a successful screening program

Early Riser Session 8**Coding and Billing in the ICU**

Julie Painter, Thornton, CO, and Jay G. Shake, Temple, TX

This session will provide attendees with information about the physician and hospital sides of billing and coding. It also will highlight the importance of appropriate medical record documentation to support a given level of billing.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Explain current coding systems and outline the appropriate documentation for coding
- Discuss critical care coding
- Explain coding for physicians in training and non-physician providers
- Identify non-critical care codes
- Identify the utility of extracorporeal membrane oxygenation and ventricular assist device notes

Early Riser Session 9**LVAD Thrombosis: Diagnosis and Management**

Ahmet Kilic, Columbus, OH, Robert L. Kormos, Pittsburgh, PA, Francis D. Pagani, Ann Arbor, MI, and Nicholas G. Smedira, Cleveland, OH

This session will provide a detailed review of current knowledge related to pump thrombosis. The prevalence of pump thrombosis and a comparison between HeartMate II and HeartWare devices will be offered, as will a review of the latest diagnosis, treatment, and surgical therapy options. A panel discussion will complete the session.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Explain how to quickly diagnose pump thrombosis
- List the options available for treatment
- Discuss surgical approaches for pump exchange

Early Riser Session 10**Tough Calls in Mitral Valve Disease**

Michael A. Borger, New York, NY, Anson Cheung, Vancouver, Canada, Robert Smith, Dallas, TX*, and Vinod H. Thourani, Atlanta, GA

In this interactive session, experienced surgeons will discuss the spectrum of treatment approaches for complex mitral valve disease.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Discuss the range of available approaches for mitral valve disease
- Describe the decision-making process for and against surgical intervention

Early Riser Session 11**Safe Reoperative Surgery**

Pavan Atluri, Philadelphia, PA, Jack Boyd, Stanford, CA, Joel S. Corvera, Indianapolis, IN, John A. Kern, Charlottesville, VA, and Wilson Y. Szeto, Philadelphia, PA

Due to the high risk of problems associated with reoperative surgeries, few surgeons perform these types of procedures regularly. However, studies suggest an increasing need for reoperative procedures. Studies also show that the status of reoperation is no longer an independent risk factor for mortality. This session seeks to close the gap in physician understanding of postoperative outcomes and improve the ability to carry out proper perioperative strategies in order to perform safe reoperative procedures.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Identify operative options for performing safe reoperative surgeries
- Describe various approaches to assessing appropriate candidates for reoperations
- Propose protocols to reduce intraoperative injuries

Early Riser Session 12**Three Cases I Wish I Could Get Back**

Emile A. Bacha, New York, NY, Jonathan Chen, New York, NY, and Glen S. Van Arsdell, Toronto, Canada

Have you ever had a case where, after it was over, you thought, "What was I thinking?!" or "I'd like to start that one over again." In this session, three experienced, high-volume surgeons will describe cases where they felt they could have performed differently to improve morbidity or the ultimate outcomes of their patients. The surgeons will highlight key areas of decision making, information gathering, and technical performance that might have been improved or would be improved in the future based on what they've learned from these cases.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Delineate that all surgeons face intellectual and technical challenges
- Articulate the algorithms required to work through a problem
- Describe the importance of post-hoc event evaluation
- Explain the importance of implementing structural improvements to prevent future similar difficulties

Early Riser Session 13**Mechanical Circulatory Support of the Single Ventricle**

J. William Gaynor, Philadelphia, PA, David L. Morales, Cincinnati, OH, and Ronald K. Woods, Milwaukee, WI

Many single ventricle patients require mechanical circulatory support, and physicians must choose from several options. Speakers in this session will describe the indications, implantation techniques, and outcomes data for extracorporeal membrane oxygenation (ECMO), ventricular assist devices (VADs), and artificial hearts.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Explain the indications, implantation techniques, and outcomes data for ECMO support of the single ventricle patient
- Identify the indications, implantation techniques, and outcomes data for VAD support of the single ventricle patient
- Describe the indications, implantation techniques, and outcomes data for artificial heart support of the single ventricle patient

Early Riser Session 14**Clinical Trials in Thoracic Surgical Oncology**

Gail E. Darling, Toronto, Canada, and Linda W. Martin, Baltimore, MD

Clinical research is essential to improving patient outcomes. Many surgeons are unaware of clinical trials that may be relevant to their patients and their practices; thoracic surgeon engagement, participation, and patient enrollment are critical elements to successful studies. This session will inform surgeons practicing general thoracic surgery about clinical trials available through cooperative oncology groups, as well as other mechanisms. There also will be education regarding how to get involved in the cooperative groups and how to open a trial at a surgeon's home institution.

Learning Objectives

Upon completion of this activity, participants should be able to:

- List the available clinical trials in general thoracic surgery
- List upcoming trials/trials in development
- State how to become involved in clinical research locally (in their own practice settings) and in the cooperative groups nationally
- State barriers to performing clinical research
- Discuss knowledge gaps in clinical trial evidence

Early Riser Session 15**Update on Maintenance of Certification for the American Board of Thoracic Surgery**

Bryan F. Meyers, St Louis, MO, and Cameron D. Wright, Boston, MA

This activity will feature presentations on the recently changed requirements for ABTS Diplomates to remain compliant with maintenance of certification (MOC) activities. It will include a review of MOC goals, changes in specific MOC practices and requirements in surgery and cardiothoracic surgery, and the responsibilities for board-certified cardiothoracic surgeons. All cardiothoracic surgeons are welcome, but those approaching the fifth or 10th year of their ABTS cycle will find the session particularly valuable. Practical solutions will be offered for MOC.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Recognize the reasons for and importance of board certification and MOC programs
- List the recent changes to MOC that have impacted all American Board of Medical Specialties boards
- State their personal MOC requirements in the next 1-5 years
- Demonstrate an understanding of the MOC expectations

7:30 AM – 8:30 AM

Early Riser Health Policy Forum**MIPS: The New Medicare Fee-for-Service and What It Means to You**

Alan M. Speir, Falls Church, VA, and Courtney Yohe, Washington, DC

Beginning in 2019, all cardiothoracic surgeons who treat Medicare patients will be paid according to the Merit-Based Incentive Payment System (MIPS), which is designed to drive Medicare payment away from traditional fee-for-service and toward a pay-for-quality model. MIPS combines requirements from the Physician Quality Reporting System, Electronic Health Records Meaningful Use Final Rule, Value-Based Payment Modifier, and new clinical practice improvement activity regulations. This session will outline these programs and provide instruction on how participants can prepare their practices for the future Medicare payment system. A preview also will be offered of specialty-specific Alternative Payment Models and new documentation requirements related to global surgical payments.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Identify ways to help their hospitals and practices prepare for MIPS
- List the requirements of the revised Medicare fee-for-service payment system
- Identify ways to participate in ongoing STS advocacy

9:00 AM – 12:00 PM

General Session II

Moderators: *Mark S. Allen, Rochester, MN, and Keith S. Naunheim, St Louis, MO*

9:00 AM

Thomas B. Ferguson Lecture: The Requisite Innovator's Mindset: Open-Mindedness and the Relentless Hunt for Problems in Need of Fixing
Scott Parazynski, Houston, TX

10:00 AM

Break

10:45 AM

Award Presentations

11:00 AM

C. Walton Lillehei Lecture: Why We Get Fat
Gary Taubes, New York, NY†

10:00 AM – 10:45 AM

BREAK—Visit Exhibits and Scientific Posters

12:00 PM – 1:00 PM

BREAK—Visit Exhibits and Scientific Posters

12:00 PM – 1:00 PM

Ethics Debate: An Advance Directive Limits Postoperative Care—Should Surgeons Accept Limits on Care?

A patient's advance directive sometimes places limitations on care and is particularly problematic when it limits postoperative care, a time when some instability is likely. Some surgeons believe that limitations on life-sustaining technologies are acceptable because caring for patients is paramount, while others think that such limitations are unjustified and should not be accepted. How should a surgeon respond to such a situation?

The Ethics Debate will feature a case in which a patient with multiple comorbidities had a surrogate decision-maker who limited postoperative care by restricting life support to 1 week after a complex operation. The case will be discussed by two experts with differing views of the proper response. Substantial time is planned for questions and comments from the audience.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Discuss the factors to be considered when faced with an advance directive that limits postoperative care
- Decide whether to accept limitations on care

Facilitator: *Robert M. Sade, Charleston, SC*

PRO: *Constantine D. Mavroudis, Philadelphia, PA*

CON: *Charles C. Canver, Danville, VA*

12:00 PM – 1:00 PM

Residents Luncheon

This luncheon, which is open to all residents, facilitates mentorship and discussion between experienced cardiothoracic surgery leaders and resident attendees. Each attendee will be provided with discussion topics to encourage engagement. Discussion topics will address the various types of cardiothoracic surgery training programs, identification of gaps in training, and how STS can continue to support residents as they prepare to enter the workforce. Participants consistently rate the discussions and interaction with leaders as the most valued and appreciated aspect of the luncheon.

 Indicates that a ticket is required to attend.

†For more information on this speaker, please visit www.prhspeakers.com.

1:00 PM – 3:00 PM**Adult Cardiac Session: General****Moderators:** Kevin L. Greason, Rochester, MN, and Christina M. Vassileva, Springfield, IL**1:00 PM** Amiodarone Protocol Reduces Atrial Fibrillation and Decreases Mortality in Cardiac Surgery Patients**W. Elkhaili¹**, M. D. Grinn², W. Elzomor¹, R. Cosenza¹, V. DeBari¹, A. Hamdan¹, C. Badami¹, K. Asgarian¹, M. Connolly¹
¹St Joseph's Healthcare System, Paterson, NJ, ²St Joseph's Regional Medical Center, Paterson, NJ**1:15 PM** Valve Repair Is Superior to Replacement in Patients With Coexisting Degenerative Mitral Valve and Ischemic Heart Disease**H. Javadikasgari**, A. M. Gillinov, R. M. Suri, L. G. Svensson, J. L. Navia, P. L. Houghtaling, J. J. Idrees, J. F. Sabik, E. Blackstone
Cleveland Clinic, OH**1:30 PM** Pericardiectomy After Previous Coronary Bypass Grafting: Analyzing Risk and Effectiveness in this Rare Clinical Entity**E. A. Gillaspie**, K. L. Greason, R. C. Daly, H. V. Schaff, J. A. Dearani, L. D. Joyce, J. M. Stulak
Mayo Clinic, Rochester, MN**1:45 PM** Improved Outcomes of Total Arterial Myocardial Revascularization in Elderly Patients at Long-Term Follow-Up: A Propensity-Matched Analysis**G. Bisleri**, L. Di Bacco, D. Turturiello, A. Mazzeletti, L. Giroletti, A. Repossini, C. Muneretto
University of Brescia Medical School, Italy**2:00 PM** Effective Strategies for Reducing Blood Transfusions in Adult Cardiac Surgery**J. W. Haft¹**, R. L. Prager², A. Geltz¹, J. J. Wolverton¹, T. Paugh², D. S. Likosky²
¹University of Michigan, Ann Arbor, ²University of Michigan Health System, Ann Arbor**2:15 PM** The Unintended Consequences of Over Reducing Cardiopulmonary Bypass Circuit Prime Volume**B. C. Sun¹**, T. A. Dickinson², D. S. Likosky³, D. Wells², S. Weinstein²
¹Minneapolis Heart Institute, MN, ²SpecialtyCare, Nashville, TN, ³University of Michigan Health System, Ann Arbor**2:30 PM** Insights From Longitudinal Echocardiographic Follow-Up After Surgical Correction of Mitral Prolapse: Modes of Mitral Repair Failure**V. Chan**, E. Elmistekawy, M. Ruel, T. G. Mesana
University of Ottawa Heart Institute, Canada**2:45 PM** 50-Year Follow-Up of Mechanical Aortic Valve Replacement: Patient Survival and Prosthesis Durability**A. P. Furnary¹**, M. Wang², G. L. Grunkemeier², A. Starr³
¹Starr-Wood Cardiac Group of Portland, OR, ²Providence Health & Services, Portland, OR, ³Oregon Health & Science University, Portland**1:00 PM – 3:00 PM****Adult Cardiac Session: Mitral Valve****Moderators:** Juan A. Crestanello, Columbus, OH, and Richard Lee, St Louis, MO**1:00 PM** Off-Pump Mitral Valve Repair With NeoChord Implantation: 1-Year Follow-Up**A. Colli¹**, L. Besola¹, E. Manzan¹, E. Bizzotto², F. Zucchetta¹, R. Bellu², L. Bagozzi¹, D. Pittarello¹, G. Gerosa¹
¹University of Padova, Italy, ²University of Padua, Italy**1:15 PM** Ischemic Mitral Regurgitation: In Whom Should Mitral Valve Repair Be Performed?**V. Chan¹**, O. Levac-Martinho², E. Elmistekawy¹, M. Ruel¹, T. G. Mesana¹
¹University of Ottawa Heart Institute, Canada, ²University of Ottawa, Canada**1:30 PM** Evolution of Secondary Tricuspid Regurgitation After Mitral Valve Surgery for Ischemic Mitral Regurgitation**J. L. Navia**, H. Elgharably, A. Ibrahim, H. Javadikasgari, A. M. Gillinov, E. E. Roselli, E. Blackstone, L. G. Svensson
Cleveland Clinic, OH**1:45 PM** Twenty-Year Experience With Tricuspid Annuloplasty for Functional Tricuspid Regurgitation: Is Ring Annuloplasty Superior to Suture Annuloplasty?**H. Hata**, T. Fujita, Y. Shimahara, Y. Kume, J. Kobayashi
National Cerebral and Cardiovascular Center, Osaka, Japan**2:00 PM** Robotic vs Non-Robotic Mitral Valve Surgery for Degenerative Mitral Valve Disease**M. E. Halkos¹**, E. Moss², J. Binongo¹, R. Guyton¹, V. H. Thourani¹, A. M. Herzog³, A. Atherton¹, E. L. Sarin¹, J. Miller¹, D. Murphy¹
¹Emory University, Atlanta, GA, ²McGill University, Montreal, Canada, ³Emory St Joseph's Hospital, Atlanta, GA**2:15 PM** Mechanical vs Bioprosthetic Valve Replacement in Young Women: Does Type of Valve Affect Survival?**J. Hughes**, H. V. Schaff, J. A. Dearani, R. C. Daly, H. Connolly
Mayo Clinic, Rochester, MN**2:30 PM** **Debate:** The Future of Mitral Valve Regurgitation Treatment Open Surgery: Y. Joseph Woo, Stanford, CATranscatheter Repair: Gorav Ailawadi, Charlottesville, VA
Transcatheter Replacement: Michael J. Mack, Dallas, TX**1:00 PM – 3:00 PM****Congenital Session: Pediatric Congenital II****Moderators:** Richard W. Kim, Los Angeles, CA, and Glen S. Van Arsdell, Toronto, Canada**1:00 PM** Aortic Valve Annulus Is the Best Predictor of Left Ventricular Outflow Tract Reintervention Following Biventricular Repair of Interrupted Arch/Ventricular Septal Defect**R. Subramanyan¹**, S. Ramachandran², A. Cheng², P. Wong², W. J. Wells², V. A. Starnes³
¹University of Southern California, Los Angeles, ²Children's Hospital Los Angeles, CA, ³University of Southern California Keck School of Medicine, Los Angeles**1:15 PM** Cardiopulmonary Bypass Management Strategies Have Minimal Impact on Early Neurodevelopmental Outcomes After Cardiac Surgery in Infants**J. Gaynor¹**, D. Wypij², C. Stopp², D. B. Andropoulos³, J. Atallah⁴, A. M. Atz⁵, J. Beca⁶, M. Donofrio⁷, K. F. Duncan⁸, N. S. Ghanayem⁹, C. S. Goldberg¹⁰, H. Hovels-Gurich¹¹, F. Ichida¹², J. P. Jacobs¹³, R. Justo¹⁴, B. Latal¹⁵, J. S. Li¹⁶, W. Mahle¹⁷, P. S. McQuillen¹⁸, S. C. Menon¹⁹, V. L. Pemberton²⁰, N. A. Pike²¹, C. Pizarro²², L. S. Shekerdemian³, A. Synnes²³, I. Williams²⁴, D. C. Bellinger², J. W. Newburger²¹The Children's Hospital of Philadelphia, PA, ²Boston Children's Hospital, MA, ³Texas Children's Hospital, Houston, ⁴Alberta Health Services, Canada, ⁵Medical University of South Carolina, Charleston, ⁶Starship Children's Health, Auckland, New Zealand, ⁷Children's National Medical Center, Washington, DC, ⁸University of Nebraska Medical Center, Omaha, ⁹Children's Hospital and Medical College of Wisconsin, Milwaukee, ¹⁰Mott Children's Hospital, Ann Arbor, MI, ¹¹University Hospital, Aachen, Germany,

¹²Toyama University Hospital, Japan, ¹³Johns Hopkins All Children's Heart Institute, St Petersburg, FL, ¹⁴University of Queensland, Australia, ¹⁵University Children's Hospital Zurich, Switzerland, ¹⁶Duke University Medical Center, Durham, NC, ¹⁷Emory University, Atlanta, GA, ¹⁸University of California, San Francisco, ¹⁹University of Utah, Salt Lake City, ²⁰National Heart, Lung, and Blood Institute, Bethesda, MD, ²¹University of California, Los Angeles School of Nursing, ²²A. I. duPont Hospital for Children, Wilmington, DE, ²³University of British Columbia, Vancouver, Canada, ²⁴Morgan Stanley Children's Hospital, New York

- 1:30 PM** Growth of the Neopulmonic Valve After the Arterial Switch Operation in Patients With Aortic Arch Obstruction
J. Park¹, W. Kim¹, S. Cho², K. Hyun¹, Y. Kim¹
¹Seoul National University Children's Hospital, South Korea, ²Seoul National University Hospital, South Korea
- 1:45 PM** Coronary Anatomical Patterns and Clinical Outcome in the Surgical Treatment of Transposition of the Great Arteries
M. Trezzi, A. Albano, S. B. Albanese, E. Cetrano, A. Carotti
Bambino Gesù Children's Hospital, Rome, Italy
- 2:00 PM** Optimal Timing for Elective Early Primary Repair of Tetralogy of Fallot
M. Cunningham¹, M. Donofrio², S. Peer², D. Zurakowski³, R. A. Jonas², P. Sinha⁴
¹Children's National Medical Center, Kensington, MD, ²Children's National Medical Center, Washington, DC, ³Harvard Medical School, Boston, MA, ⁴Children's National Health System, Washington, DC
- 2:15 PM** Limited Transannular vs Subvalvar Patch in Infants With Tetralogy of Fallot
B. V. Simon¹, M. F. Swartz², G. M. Alfieri³
¹University of Rochester, NY, ²University of Rochester - Strong Memorial Hospital, NY
- 2:30 PM** Systemic Pulmonary Shunt Facilitates the Growth of the Pulmonary Valve Annulus in Patients With Tetralogy of Fallot
B. Chong
Asan Medical Center, Seoul, South Korea
- 2:45 PM** Global Tetralogy of Fallot Surgical Practice Patterns
S. Hussain¹, T. Yun², B. Rahmat³, O. O. Al-Radi⁴, S. Rao⁵, Q. An⁶, C. Fraser⁷, Y. d'Udekem⁸, Q. Ibrahim⁹, R. Whitlock⁹, G. S. Van Arsdell¹
¹The Hospital for Sick Children, Toronto, Canada, ²Asan Medical Center, Seoul, South Korea, ³National Cardiovascular Center Harapan Kita, Jakarta, Indonesia, ⁴King Abdulaziz University, Jeddah, Saudi Arabia, ⁵Kokilaben Dhurubhai Ambani Hospital, Mumbai, India, ⁶West China Hospital, Sichuan University, Chengdu, ⁷Texas Children's Heart Institute, Houston, ⁸The Royal Children's Hospital, Melbourne, Australia, ⁹Population Health Research Institute, Hamilton, Canada

1:00 PM – 3:00 PM

General Thoracic Session: Esophageal

Moderators: Ross M. Bremner, Phoenix, AZ, and Christopher R. Morse, Boston, MA

- 1:00 PM** Quality of Lymphadenectomy Is Associated With Improved Overall Survival in Esophageal Cancer Patients
P. P. Samson¹, V. Puri¹, S. R. Broderick², D. Kreisel³, A. S. Krupnick³, G. A. Patterson⁴, B. F. Meyers¹, T. D. Crabtree³
¹Washington University School of Medicine, St Louis, MO, ²St Luke's Hospital, Chesterfield, MO, ³Washington University School of Medicine/Barnes Jewish Hospital, St Louis, MO, ⁴Washington University, St Louis, MO

- 1:15 PM** Assessing the Importance of Age on Outcomes Associated With Repair of Giant Paraesophageal Hernias
K. Mohiuddin, M. El Lakis, M. Hubka, J. Speicher, D. E. Low
Virginia Mason Medical Center, Seattle, WA
- 1:30 PM** Influence of Specialty Training and Trainee Involvement in the Perioperative Outcomes of Esophagectomy
Z. Khousshal¹, B. Mungo¹, J. Canner², M. Stem¹, A. Lidor¹, E. B. Schneider², D. Molena¹
¹The Johns Hopkins University, Baltimore, MD, ²The Johns Hopkins Hospital, Baltimore, MD
- 1:45 PM** Accelerated Recovery Within Standardized Pathways Following Esophagectomy: A Prospective Cohort Study Assessing Outcomes, Readmissions, Patient Satisfaction, and Costs
H. M. Schmidt, **M. El Lakis**, S. Markar, D. E. Low
Virginia Mason Medical Center, Seattle, WA
- 2:00 PM** Risk Factors for Local Recurrence and Optimal Length of Esophagectomy in Esophageal Cancer
C. Kang, Y. Hwang, H. Lee, I. Park, Y. Kim
Seoul National University Hospital, South Korea
- 2:15 PM** Esophagectomy Outcomes in the Endoscopic Mucosal Resection Era
K. J. Dickinson, K. Wang, L. Zhang, M. S. Allen, S. D. Cassivi, F. C. Nichols, K. Shen, D. A. Wigle, S. H. Blackmon
Mayo Clinic, Rochester, MN
- 2:30 PM** Impact of Postoperative Infection on Overall Survival and Recurrence After Minimally Invasive Esophagectomy: A Propensity-Matched Analysis
V. Tam¹, J. D. Luketich¹, D. G. Winger², I. Sarkaria¹, R. M. Levy¹, N. A. Christie², O. Awais¹, M. R. Shende³, K. S. Nason²
¹University of Pittsburgh Medical Center, PA, ²University of Pittsburgh, PA, ³University of Pittsburgh, Erie, PA
- 2:45 PM** Race Is Associated With Reduced Overall Survival Following Esophagectomy for Esophageal Cancer Only Among Patients From Lower Socioeconomic Backgrounds
L. Erhunmwunsee¹, B. Gulack², C. Rushing¹, D. Niedzwiecki¹, M. F. Berry³, M. G. Hartwig¹
¹Duke University Medical Center, Durham, NC, ²Duke University, Durham, NC, ³Stanford University, CA

1:00 PM – 3:00 PM

General Thoracic Session: Lung Cancer II—Treatment

Moderators: David T. Cooke, Sacramento, CA, and Eric L. Grogan, Nashville, TN

- 1:00 PM** Successful Linkage of the STS General Thoracic Surgery Database and a Hospital Cancer Registry to Obtain Long-Term Survival Data in Patients Undergoing Lobectomy for Lung Cancer
M. J. Magee¹, S. L. Prince², M. A. Herbert³
¹HCA North Texas Division, Dallas, ²Cardiopulmonary Research Science and Technology Institute, Dallas, TX, ³Medical City Dallas Hospital, TX
- 1:15 PM** Nationwide Utilization of Robotic Lobectomy and Postoperative Outcomes
R. Rajaram¹, S. Mohanty², D. Bentrem¹, E. Pavey¹, D. D. Odell¹, A. Bharat³, K. Y. Biliimoria¹, M. M. DeCamp³
¹Northwestern University, Chicago, IL, ²American College of Surgeons, Chicago, IL, ³Northwestern Memorial Hospital, Chicago, IL

1:30 PM Does the Use of Cardiopulmonary Bypass During En Bloc Resection of T4 Non–Small-Cell Lung Cancer Affect Early or Late Outcomes?
N. B. Langer, O. Mercier, S. Mussot, P. G. Darteville, E. Fadel
Marie Lannelongue Hospital, Le Plessis Robinson, France

1:45 PM Quality Metrics for Minimally Invasive Lobectomy: A Comparison Between Video-Assisted and Robotic Approaches for Clinical Stage I and II Non–Small-Cell Lung Cancer Using the STS National Database
B. E. Louie¹, J. L. Wilson², S. Kim³, R. J. Cerfolio⁴, B. J. Park⁵, A. S. Farivar⁶, E. Vallieres¹, R. W. Aye⁶, W. R. Burfeind⁷, M. I. Block⁸
¹Swedish Cancer Institute, Seattle, WA, ²Beth Israel Deaconess Medical Center, Boston, MA, ³Duke Clinical Research Institute, Durham, NC, ⁴University of Alabama at Birmingham, ⁵Memorial Sloan Kettering Cancer Center, New York, NY, ⁶Swedish Medical Center, Seattle, WA, ⁷St Luke's University Health Network, Bethlehem, PA, ⁸Memorial Healthcare System, Hollywood, FL

2:00 PM Recurrence Patterns After Wedge Resection for Early Stage Lung Cancer: How to Rationally Follow Up to Detect Early Local Failures
A. Bille¹, U. Ahmad², K. Suzuki¹, W. Kaitlin¹, P. S. Adusumilli¹, J. Huang¹, D. R. Jones¹, N. P. Rizk²
¹Memorial Sloan Kettering Cancer Center, New York, NY, ²Memorial Sloan Kettering Cancer Center, Rye, NY, ³Cleveland Clinic, OH

2:15 PM Is the T3 Designation Valid in Patients With Centrally Located Non-Small-Cell Lung Cancer?
J. Jeon, M. Kim, J. Lee, H. Yang
Center for Lung Cancer, National Cancer Center, Goyang, South Korea

2:30 PM **Debate: Post-Resection Surveillance: Does It Make Sense?**
PRO: Douglas E. Wood, Seattle, WA
CON: Stephen J. Swensen, Rochester, MN

1:00 PM – 3:00 PM

Patient Safety Symposium: When Bad Things Happen to Good CT Surgeons—Human Error and the Impact on You, the “Second Victim”

Within the framework of patient safety is recognizing the importance of human factors. A human factors approach acknowledges that medical errors can result from a combination of individual factors and work system factors. After a medical error or adverse event, involved health care providers are considered “second victims” (subsequent patients who are harmed are “third victims”). The impact of adverse events on second victims is becoming better defined, and what kind of support these individuals need is better understood. The impact of errors or adverse events on the health care provider will be addressed through a series of lectures, panel discussion, and audience interaction.

Learning Objectives

Upon completion of this activity, participants should be able to:

- List human factors in the context of patient safety
- Describe the impact that an adverse event or error may have on a health care provider
- Identify ways to respond and recover after an error or adverse event
- Illustrate the importance of disclosure and legal issues after an adverse event

Moderator: James I. Fann, Stanford, CA

1:00 PM Welcome and Introduction

1:05 PM Human Factors and System Error: Impact on the Provider
James Jagers, Aurora, CO

1:35 PM When Bad Things Happen: Reactions to Recovery From Adverse Events
Carol-Anne Moulton, Toronto, Canada*

2:05 PM What Is Disclosure and Risk Management?
Timothy McDonald, Chicago, IL

2:35 PM Panel Discussion
Michal Hubka, Seattle, WA*, and Kevin W. Lobdell, Charlotte, NC

1:00 PM – 3:00 PM

EACTS @ STS: Aortic Valve Repair and Aortic Root Reconstruction for Insufficient Tricuspid and Bicuspid Pathology

In this session, presented by STS and the European Association for Cardio-Thoracic Surgery, international experts will discuss the various aortic valve repair procedures for both tricuspid and bicuspid valves. Valve repairs utilizing the reimplantation procedure and the remodeling procedure with subannular ring stabilization will be highlighted. Additionally, the session will include discussion of isolated aortic valve repair in the setting of normal aortic root geometry. Emphasis also will be placed on the alternative treatment paradigm of aortic root surgery for aortic valve insufficiency.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Distinguish between various aortic root morphologies and subsequent respective reconstruction techniques for aortic valve repair, such as reimplantation, remodeling, and subannular ring stabilization
- Discuss the results of aortic valve repair in both tricuspid and bicuspid valve diseases, as well as the gold-standard results of aortic root reconstruction with classic Bentall for aortic valve insufficiency
- Recognize the nuanced anatomy of the various valvular characteristics that contribute to aortic valve insufficiency and can be repaired

Moderators: Joseph E. Bavaria, Philadelphia, PA, and Ruggero de Paulis, Rome, Italy

1:00 PM Introduction

1:05 PM Suture Annuloplasty Significantly Improves the Durability of Bicuspid Aortic Valve Repair
U. Schneider, C. Hofmann, D. Aicher, H. Takahashi, Y. Miura, H. Schäfers
Saarland University Medical Center, Homburg, Germany

1:20 PM 3-Cusp Aortic Valve Repair With Video
Ruggero de Paulis, Rome, Italy

1:35 PM At the Root of the Repair Debate: Outcomes Following Elective Root Replacements for Ascending Aneurysms and Aortic Insufficiency
F. H. McCarthy¹, J. E. Bavaria², K. M. McDermott¹, P. Moeller³, D. Spragan², M. L. Williams², P. Vallabhajosyula², W. Y. Szeto², N. Desai²
¹Hospital of the University of Pennsylvania, Philadelphia, ²University of Pennsylvania, Philadelphia, ³University of Pennsylvania School of Medicine, Philadelphia

1:50 PM Valve-Sparing Root Replacement in Bicuspid Valves: Managing the Annulus and Cusps
Munir H. Boodwani, Ottawa, Canada

2:05 PM Impact of Cusp Repair on Reoperation Risk Following the David Procedure: Subgroup Analysis of Patients With Bicuspid and Tricuspid Aortic Valves
F. Settepani, A. Cappai, A. Basciu, M. Moz, A. Barbone, E. Citterio, D. Ornaghi, G. Tarelli
Humanitas Clinical and Research Center, Rozzano, Italy

*Invited

- 2:20 PM Reimplantation for Type A Dissection: Technique and Result
Himanshu J. Patel, Ann Arbor, MI
- 2:35 PM Severity of Preoperative Aortic Regurgitation Does Not Impact Valve Durability of Aortic Valve Repair Following the David V Valve-Sparing Aortic Root Replacement
W. B. Keeling¹, B. G. Leshnower², J. Binongo¹, L. McPherson¹, E. P. Chen¹
¹Emory University, Atlanta, GA, ²Emory University School of Medicine, Atlanta, GA
- 2:50 PM Panel Discussion

1:00 PM – 3:30 PM**JCTSE: Accountable Surgical Education—How Can Cardiothoracic Surgery Move Forward?**

New technology and science are changing the landscape of both resident and continuing education in cardiothoracic surgery. Simply showing up at an annual scientific meeting or completing a surgical fellowship may not be enough in the future to ensure either cognitive or technical competency. This session will show how advances in surgical education through curriculum implementation, faculty development, and the introduction of learning management systems (LMS) may improve accountability in the specialty's educational efforts.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Describe the potential of e-learning and the use of an LMS
- Explain the joint efforts of STS and JCTSE in developing a thoracic surgery curriculum and LMS
- Create an electronic learner portfolio
- Apply improved competency in resident and continuing surgical education

Moderator: Edward D. Verrier, Seattle, WA

- 1:00 PM Welcome and Introductory Remarks
- 1:15 PM Introducing the New Thoracic Surgical Curriculum
Craig J. Baker, Los Angeles, CA
- 1:30 PM Discussion
- 1:40 PM Accountability in Surgical Curriculum Development Using an Electronic Platform
Ara A. Vaporciyan, Houston, TX
- 1:55 PM Discussion
- 2:05 PM Progress in Adopting a Global Curriculum
Rafael Sadaba, Pamplona, Spain
- 2:20 PM Discussion
- 2:30 PM Gamification of Surgical Education
Nahush A. Mokadam, Seattle, WA
- 2:45 PM Discussion
- 2:55 PM EACTS Portfolio Tool to Monitor Surgical Training
A. Pieter Kappetein, Rotterdam, The Netherlands
- 3:10 PM Panel Discussion

1:00 PM – 5:30 PM**Advanced Therapies for End-Stage Heart Disease**

In this interactive session, leading experts will discuss practice recommendations for patients receiving mechanical circulatory support, heart transplantation, and alternative treatment options for end-stage heart disease. They also will review results from recent related major trials, explain new data on risk factors for adverse events, and present strategies to improve efficiency and quality of care.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Identify current and appropriate indications for treatment of end-stage heart disease, including mechanical circulatory support, heart transplantation, and newer alternative treatment options
- Identify alternative non-mechanical or non-transplant treatment strategies that can lead to improved patient outcomes
- Discuss the results from recent major studies in the field that have had a significant impact on patient selection and patient care practices
- Describe new trials and technology that will be or have been recently introduced into the field

Moderators: Robert L. Kormos, Pittsburgh, PA, Nahush A. Mokadam, Seattle, WA, Francis D. Pagani, Ann Arbor, MI, and Craig H. Selzman, Salt Lake City, UT

- 1:00 PM Has ENDURANCE or ROADMAP Changed the Practice of Ventricular Assist Device (VAD) Therapy in the US?
Michael A. Acker, Philadelphia, PA
- 1:15 PM New VAD Trials and Technology: Better or Just New?
Daniel J. Goldstein, Bronx, NY
- 1:30 PM Percutaneous Non-Extracorporeal Membrane Oxygenation Mechanical Circulatory Support: Developing a Rational Approach to Treatment of Shock
Carmelo A. Milano, Durham, NC
- 1:45 PM If Not a Heart Transplant or VAD, Then What? High-Risk Alternative Strategies in the Era of STS National Database Reporting
Nicholas G. Smedira, Cleveland, OH
- 2:00 PM Non-Sternotomy Approaches to VAD Implantation: Is Less Better?
Jay D. Pal, Seattle, WA
- 2:15 PM Panel Discussion
- 2:30 PM The Safety and Utility of Nurse-Managed Extracorporeal Life Support in an Adult Cardiothoracic Intensive Care Unit
A. E. Hackmann¹, L. M. Wiggins¹, G. Grimes², F. Schenke², M. Barr¹, M. E. Bowdish³, M. Cunningham¹, V. A. Starnes³, R. Fogel²
¹University of Southern California, Los Angeles, ²Keck Hospital, University of Southern California, Los Angeles, ³University of Southern California Keck School of Medicine, Los Angeles
- 2:45 PM Posttransplant Outcomes Among Septuagenarians Bridged to Heart Transplantation With Continuous-Flow Left Ventricular Assist Devices
S. Fukuhara¹, K. Takeda², P. A. Kurlansky³, A. R. Polanco², H. Takayama², Y. Naka⁴
¹Columbia University Medical Center, Fort Lee, NJ, ²Columbia University Medical Center, New York, NY, ³Columbia University, New York, NY, ⁴Columbia University College of Physicians and Surgeons, New York, NY
- 3:00 PM Break

- 3:30 PM** VAD Therapy or Transplant for Adult Congenital Heart Disease: Unique Challenges and Solutions
Gonzalo V. Gonzalez-Stawinski, Dallas, TX
- 3:45 PM** An Update on the STICH Trial Results: Is There Evidence to Change our Approach to Ischemic Heart Disease?
Eric J. Velazquez, Durham, NC
- 4:00 PM** Consideration of Percutaneous Options for Structural Heart Disease in the Setting of Severe Left Ventricle Dysfunction
Stephanie L. Mick, Cleveland, OH
- 4:15 PM** Evolution of Surgical Management of Functional Mitral Insufficiency
*Donald D. Glower, Durham, NC**
- 4:30 PM** Panel Discussion
- 4:45 PM** Duration of Left Ventricular Device Support Does Not Impact Survival Following Heart Transplantation in the US
J. C. Grimm, J. Magruder, T. C. Crawford, W. G. Plum, C. Sciortino, A. S. Shah, G. J. Whitman
The Johns Hopkins Hospital, Baltimore, MD
- 5:00 PM** Correlation of Pre-Explant Lactate Dehydrogenase Levels and Findings During Post-Explant Pump Analysis of the HeartMate II Left Ventricular Assist Device
V. Sood¹, F. D. Pagan¹, D. L. Joyce², L. D. Joyce², R. C. Daly², J. M. Stulak²
¹University of Michigan Health System, Ann Arbor, ²Mayo Clinic, Rochester, MN
- 5:15 PM** Uncorrected Significant Mitral Valve Regurgitation Is Associated With Decreased Survival and Increased Readmissions After Left Ventricular Assist Device Implantation
A. Tanaka¹, D. Onsager¹, D. Cozadd¹, G. Kim², S. Adatya¹, N. Sarswat¹, G. Sayer², S. Fedson², V. Jeevanandam¹, N. Uriel², T. Ota¹
¹The University of Chicago, IL, ²The University of Chicago Medical Center, IL
- 4:15 PM** Open Surgical Repair Remains the Gold Standard for Treating Aortic Arch Pathology
V. Khullar, H. V. Schaff, J. Dearani, R. C. Daly, K. L. Greason, A. Pochettino
Mayo Clinic, Rochester, MN
- 4:30 PM** Surgical Outcomes in the Treatment of Type A Aortic Dissection Are Superior at High-Volume Centers
M. Arsalan¹, J. J. Squiers², M. A. Herbert³, S. L. Prince⁴, D. O. Moore⁵, K. B. Harrington⁵, J. DiMaio⁶, M. J. Mack¹, W. T. Brinkman⁵
¹Baylor Scott & White Health, Plano, TX, ²Baylor Scott & White Health, Dallas, TX, ³Medical City Dallas Hospital, TX, ⁴Cardiopulmonary Research Science and Technology Institute, Dallas, TX, ⁵The Heart Hospital Baylor Plano, TX, ⁶Baylor College of Medicine, Dallas, TX
- 4:45 PM** Open Distal Fenestration of Chronic Dissection Facilitates Endovascular Elephant Trunk Completion: Late Outcomes
M. Aftab, J. J. Idrees, J. L. Navia, E. E. Roselli
Cleveland Clinic, OH
- 5:00 PM** Preoperative Renal Dysfunction and Its Impact on Acute Kidney Injury After Conventional and Transcatheter Aortic Valve Replacement: A Statewide, Population-Based Analysis
H. J. Patel¹, M. Herbert², P. F. Theurer¹, E. T. Murphy³, G. Paone⁴, A. Pruitt⁵, F. L. Shannon⁶, R. Prager⁷
¹University of Michigan Health System, Ann Arbor, ²Southwest Data Consultants, Dallas, TX, ³Spectrum Health, Grand Rapids, MI, ⁴Henry Ford Hospital, Detroit, MI, ⁵St Joseph Mercy Hospital Ann Arbor, Ypsilanti, MI, ⁶William Beaumont Hospital, Royal Oak, MI, ⁷University of Michigan, Ann Arbor
- 5:15 PM** Twenty-Five-Year Outcome of Composite Graft Aortic Root Replacement: Near "Curative" Impact on Aortic Root Disease
S. Mok¹, W. Ma², M. Ahmed¹, P. Charilaou³, S. Peterss³, A. S. Chou³, B. Ziganshin³, M. Tranquilli³, J. A. Elefteriades³
¹Yale New Haven Hospital, CT, ²Yale University School of Medicine and Beijing Anzhen Hospital, Capital Medical University, New Haven, CT, ³Yale University School of Medicine, New Haven, CT

3:00 PM – 3:30 PM**BREAK—Visit Exhibits and Scientific Posters****3:30 PM – 5:30 PM****Adult Cardiac Session: Aorta II****Moderators:** Thomas E. MacGillivray, Boston, MA, and Eric E. Roselli, Cleveland, OH

- 3:30 PM** Moderate vs Deep Hypothermic Circulatory Arrest Is Associated With Similar Postoperative Kidney Function in Elective Aortic Hemiarth Reconstruction
G. J. Arnaoutakis¹, P. Vallabhajosyula², I. Sultan³, M. Siki², S. Naidu², N. Desai², R. Milewski², M. L. Williams², W. C. Hargrove⁴, J. E. Bavaria², W. Y. Szeto²
¹University of Pennsylvania Health System, Philadelphia, ²University of Pennsylvania, Philadelphia, ³Hospital of the University of Pennsylvania, Philadelphia, ⁴Penn/Presbyterian Medical Center, Philadelphia, PA
- 3:45 PM** The Differential Impact of Anemia on Outcomes in Transcatheter vs Surgical Aortic Valve Replacement
F. H. McCarthy¹, K. M. McDermott¹, A. C. Hoedt¹, D. Spragan², P. Vallabhajosyula², W. Y. Szeto², M. L. Williams², J. E. Bavaria², N. Desai²
¹Hospital of the University of Pennsylvania, Philadelphia, ²University of Pennsylvania, Philadelphia
- 4:00 PM** Reoperative Surgical Aortic Valve Replacement vs Transcatheter Valve-in-Valve Replacement for Degenerated Bioprosthetic Aortic Valves
J. I. Ejiofor, M. Yamine, S. McGurk, L. H. Cohn, J. D. Muehlschlegel, P. S. Shekar, P. Shah, T. Kaneko
Brigham and Women's Hospital, Boston, MA
- 3:30 PM** The Year in Review: What's New in the Management of Aortic Valve Disease?
Thomas G. Gleason, Pittsburgh, PA
- 3:45 PM** Early and Mid-Term Clinical and Hemodynamic Outcomes of Transcatheter Valve-in-Valve Implantation: Results From a Multicenter Experience
A. D'Onofrio¹, E. Tarja¹, M. Agrifoglio², G. Luzi³, M. Aiello⁴, D. Gabbieri⁵, G. Tarantini¹, G. Rizzoli¹, F. Musumeci³, G. Gerosa¹
¹University of Padova, Italy, ²Centro Cardiologico Monzino, Milan, Italy, ³San Camillo Hospital, Rome, Italy, ⁴Policlinico San Matteo, Pavia, Italy, ⁵Hesperia Hospital, Modena, Italy
- 4:00 PM** Recovery of Left Ventricular Size and Function After Surgical Correction of Aortic Valve Regurgitation: Implications for Timing of Surgical Intervention
T. Murashita, R. M. Suri, H. V. Schaff, R. C. Daly, J. Dearani, K. L. Greason
Mayo Clinic, Rochester, MN

*Invited

- 4:15 PM** **Aortic Valve Repair Is Not Associated With Greater Valve-Related Morbidity than Replacement in Isolated Valve Insufficiency: A 12-Year Prospective, Controlled Study**
G. B. Luciani¹, S. Torre¹, A. Rungtatscher¹, G. Lucchese², G. Faggian³
¹University of Verona, Italy, ²St Thomas' Hospital, London, United Kingdom, ³University of Verona Medical School, Italy
- 4:30 PM** **Impact of Preoperative Chronic Kidney Disease in 2,531 Patients Undergoing Transcatheter Aortic Valve Replacement**
H. A. Jensen¹, N. Beohar², D. Doshi³, G. M. Ayele⁴, A. Kirtane⁵, V. Babaliaros¹, S. Kodali⁵, L. G. Svensson⁶, E. Tuzcu⁶, W. Y. Szeto⁷, H. C. Herrmann⁸, R. Makkar⁹, M. Alu³, R. M. Suri⁶, G. Ailawadi¹⁰, H. S. Maniar¹¹, A. Zajarias¹¹, J. F. Condado¹, L. L. Tsai¹, M. J. Mack¹², M. B. Leon¹³, V. H. Thourani¹
¹Emory University, Atlanta, GA, ²Columbia University Division of Cardiology at Mount Sinai Medical Center, Miami Beach, FL, ³Columbia University Medical Center, New York, NY, ⁴Cardiovascular Research Foundation, New York, NY, ⁵Columbia University, New York, NY, ⁶Cleveland Clinic, OH, ⁷University of Pennsylvania, Philadelphia, ⁸Hospital of the University of Pennsylvania, Philadelphia, ⁹Cedars-Sinai Medical Center, Los Angeles, CA, ¹⁰University of Virginia Health System, Charlottesville, ¹¹Washington University School of Medicine, St Louis, MO, ¹²Baylor Scott & White Health, Plano, TX, ¹³Columbia University, New York, NY
- 4:45 PM** **Aortic Valve Replacement via Ministernotomy vs Transcatheter Aortic Valve Implantation: Which Approach Is the Gold Standard in a Moderate Risk Group?**
N. Furukawa¹, O. Kuss², S. Scholtz¹, W. Scholtz¹, T. Becker¹, S. Ensminger¹, J. Gummert¹, J. Boergemann¹
¹Heart and Diabetes Center, Bad Oeynhausen, Germany, ²Institute for Biometry and Epidemiology, German Diabetes Center, Leibniz Institute for Diabetes Research at Heinrich Heine University, Düsseldorf, Germany
- 5:00 PM** **Long-Term Durability of Aortic Valve Repair for Aortic Regurgitation**
A. Zeeshan¹, J. J. Idrees¹, E. Blackstone¹, J. Rajeswaran¹, A. M. Gillinov¹, B. Griffin¹, G. Richard¹, D. F. Hammer¹, D. R. Johnston¹, G. B. Pettersson¹, E. E. Roselli¹, J. F. Sabik¹, E. G. Soltesz¹, L. G. Svensson¹
Cleveland Clinic, OH
- 5:15 PM** **Pericardial Stentless Valve for Aortic Valve Replacement: Long-Term Durability and Hemodynamic Performance—a European Multicenter Experience**
A. Repossini¹, B. Passaretti², L. Di Bacco¹, C. Muneretto¹, G. Bisleri¹, L. Giroletti¹, C. Schäfer³, B. Claus³, G. Santarpino⁴, T. J. Fischlein⁴, H. Grubitzsch³
¹University of Brescia Medical School, Italy, ²Cliniche Humanitas Gavazzeni, Cardiology Unit, Bergamo, Italy, ³Charité Universitätsmedizin Berlin, Germany, ⁴Klinikum Nürnberg - Paracelsus Medical University, Nuremberg, Germany
- 3:45 PM** **A System for Real-Time Evaluation of Thoracic Resident Operative Autonomy and Formative Feedback**
J. M. Sternbach¹, E. M. Bender², J. B. Zwischenberger³, S. L. Meyerson¹
¹Northwestern University, Chicago, IL, ²St Francis Medical Center, Cape Girardeau, MO, ³University of Kentucky, Lexington
- 4:00 PM** **Coronary Artery Bypass Grafting Outcomes in a Resident Training Program Using Real-Time Intraoperative Indocyanine Green Imaging: 3,257 Anastomoses**
A. N. Patel¹, C. H. Selzman², G. S. Kumpati², S. H. McKellar², D. A. Bull²
¹University of Utah School of Medicine, Salt Lake City, ²University of Utah, Salt Lake City
- 4:15 PM** **Application of a 3-Dimensional Video System in Training Surgical Skills for Uniportal Thoracoscopic Surgery**
K. Han¹, H. Kim¹, H. Lee¹, Y. Choi²
¹Korea University Guro Hospital, Seoul, South Korea, ²Korea University Medical Center, Seoul, South Korea
- 4:30 PM** **Measuring Error Identification and Recovery Skills in Surgical Residents**
J. M. Sternbach¹, K. Wang¹, R. El Khoury¹, E. N. Teitelbaum¹, S. L. Meyerson¹
Northwestern University, Chicago, IL
- 4:45 PM** **Correlation Between Training Patterns and Lifetime Academic Achievement of US Academic Cardiac Surgeons: Does Investing in Designated Research Time During Training Improve Career Metrics?**
C. Rosati¹, N. Valsangkar¹, M. W. Turrentine², J. W. Brown³, L. G. Koniaris¹
¹Indiana University School of Medicine, Indianapolis, ²Indiana University, Indianapolis, ³Indiana University Health, Indianapolis
- 5:00 PM** **Gender and Cardiothoracic Surgery Training: Specialty Interests, Satisfaction, and Career Pathways**
E. H. Stephens¹, M. P. Robich², D. Walters³, W. F. DeNino⁴, M. Aftab², V. Tchantchaleishvili⁵, A. L. Eilers⁶, R. Rice⁷, A. B. Goldstone⁸, R. Shelstead⁹, T. Malas¹⁰, M. Cevasco¹¹, E. A. Gillaspie¹², D. LaParo¹³, A. A. Shah¹⁴
¹Columbia University, New York, NY, ²Cleveland Clinic, OH, ³University of Washington, Seattle, ⁴Medical University of South Carolina, Charleston, ⁵University of Rochester Medical Center, NY, ⁶University of Texas Health Science Center, San Antonio, ⁷Dwight D. Eisenhower Army Medical Center, Fort Gordon, GA, ⁸University of Pennsylvania, Philadelphia, ⁹University of Colorado, Aurora, ¹⁰University of Ottawa Heart Institute, Canada, ¹¹Brigham and Women's Hospital, Boston, MA, ¹²Mayo Clinic, Rochester, MN, ¹³University of Virginia, Charlottesville, ¹⁴Duke University Medical Center, Durham, NC
- 5:15 PM** **Impact of a Moodle-Based Online Curriculum on Thoracic Surgery In-Training Exam Scores**
M. B. Antonoff¹, E. D. Verrier², M. S. Allen³, L. Aloia⁴, C. Baker⁵, J. I. Fann⁶, M. D. Iannettoni⁷, S. C. Yang⁸, A. A. Vaporciyan¹
¹University of Texas MD Anderson Cancer Center, Houston, ²University of Washington, Seattle, ³Mayo Clinic, Rochester, MN, ⁴Joint Council on Thoracic Surgery Education, Inc, Chicago, IL, ⁵University of Southern California Keck School of Medicine, Los Angeles, ⁶Stanford University Medical Center, CA, ⁷East Carolina Heart Institute at East Carolina University, Greenville, NC, ⁸The Johns Hopkins University School of Medicine, Baltimore, MD

3:30 PM – 5:30 PM**Cardiothoracic Surgical Education**

Moderators: Ara A. Vaporciyan, Houston, TX, and Jennifer D. Walker, Worcester, MA

- 3:30 PM** **Outcomes of Trainees Performing Coronary Artery Bypass Grafting: Does Resident Experience Matter?**
K. W. Yount¹, L. T. Yarboro², A. K. Narahari¹, R. K. Ghanta³, C. Tribble¹, I. L. Kron², J. A. Kern³, G. Ailawadi³
¹University of Virginia, Charlottesville, ²University of Virginia Medical Center, Charlottesville, ³University of Virginia Health System, Charlottesville

3:30 PM – 5:30 PM

Congenital Session: Pediatric Congenital III

Moderators: Jeffrey P. Jacobs, St Petersburg, FL, and
James D. St. Louis, Minneapolis, MN

- 3:30 PM Palliation Outcomes of Neonates Born With Single Ventricle Anomalies Associated With Aortic Arch Obstruction
B. Alsoufi, B. Schlosser, T. Slesnick, B. E. Kogon, K. R. Kanter
Emory University, Atlanta, GA
- 3:45 PM Aortic Arch Reconstruction in Comprehensive Stage II Compared With Norwood Reconstruction in Hypoplastic Left Heart Syndrome and Variants
C. Haller, D. Chetan, A. Saedi, R. Parker, G. S. Van Arsdell, C. A. Caldarone, O. Honjo
The Hospital for Sick Children, Toronto, Canada
- 4:00 PM Mid-Term Survival Following Resuscitative Bilateral Pulmonary Artery Banding in High-Risk Single Ventricle Neonates and Infants: How Do They Fare?
K. J. Guleserian¹, A. W. Nugent², J. M. Forbess²
¹Children's Medical Center of Dallas/University of Texas Southwestern Medical Center, ²Children's Medical Center of Dallas, TX
- 4:15 PM The Impact of Dominant Ventricle Morphology on Palliation Outcomes of Single Ventricle Anomalies
B. Alsoufi, K. R. Kanter, W. Mahle, B. E. Kogon
Emory University, Atlanta, GA
- 4:30 PM Periventricular Device Closure of Perimembranous Ventricular Septal Defect: Safety and Efficiency With Symmetric and Asymmetric Occluders
X. Pan, W. Ouyang, K. Pang, S. Wang, F. Zhang, Y. Liu, D. Zhang, S. Hu, S. Li
National Center for Cardiovascular Diseases, Fuwai Hospital, Chinese Academy of Medical Sciences, and Peking Union Medical College, Beijing, China
- 4:45 PM Small-sized Expanded Polytetrafluoroethylene Valved Conduit for Right Ventricular Outflow Reconstruction in Patients With Congenital Heart Disease
E. Yamashita¹, M. Yamagishi¹, T. Miyazaki¹, S. Asada¹, H. Yaku¹, N. Kato²
¹Kyoto Prefectural University of Medicine, Japan, ²Children's Medical Center, Kyoto Prefectural University of Medicine, Japan
- 5:00 PM Postoperative Trajectories of Cerebral and Somatic Near Infrared Spectroscopy Saturations and Outcomes After Stage I Palliation of Hypoplastic Left Heart Syndrome
G. Hoffman¹, N. S. Ghanayem¹, J. P. Scott¹, J. S. Tweddell², M. E. Mitchell², K. A. Mussatto²
¹Children's Hospital and Medical College of Wisconsin, Milwaukee, ²Children's Hospital of Wisconsin, Milwaukee
- 5:15 PM Report of the 2015 STS Congenital Heart Surgery Practice Survey
D. L. Morales¹, M. Khan¹, J. W. Turek², R. M. Biniwale³, C. I. Tchervenkov⁴, M. Chao⁵, J. P. Jacobs⁶, J. S. Tweddell⁷, M. L. Jacobs⁸
¹Cincinnati Children's Hospital Medical Center, OH, ²University of Iowa Hospital & Clinics, Iowa City, ³University of California, Los Angeles, ⁴The Montreal Children's Hospital of McGill University Health Center, Montreal, Canada, ⁵The Society of Thoracic Surgeons, Chicago, IL, ⁶Johns Hopkins All Children's Heart Institute, St Petersburg, FL, ⁷Children's Hospital of Wisconsin, Milwaukee, ⁸Johns Hopkins School of Medicine, Newtown Square, PA

3:30 PM – 5:30 PM

General Thoracic Session: Mediastinal/Pulmonary

Moderators: Chadrick E. Denlinger, Charleston, SC, and
Jessica S. Donington, New York, NY

- 3:30 PM An Extended-Pleurectomy, Decortication-Based Treatment for Advanced Stage, Large Tumor Volume Epithelial Mesothelioma Yielding a Median Survival of Greater than 3 Years
J. Friedberg¹, C. B. Simone², M. Culligan¹, K. Cengel², A. Barsky², E. Alley²
¹University of Maryland, Baltimore, ²University of Pennsylvania, Philadelphia
- 3:45 PM Robot-Assisted Thymectomy in Anterior Mediastinal Tumor: Propensity Score-Matching Study With Transsternal Thymectomy
C. Kang, Y. Hwang, H. Lee, I. Park, Y. Kim
Seoul National University Hospital, South Korea
- 4:00 PM Do Systemic Corticosteroids Have a Role in the Management of Post-Intubation Tracheal Stenosis? A Randomized Clinical Trial
M. B. Shadmehr¹, M. Zangi¹, A. Abbasidezfouli², R. Farzanegan¹, S. Pejhan¹, A. Daneshvar¹, K. Sheikhy¹, S. R. Saghebi¹, F. Sadeghbeigee¹, A. Gharedaghi¹, N. Jahanshahi¹
¹National Research Institute of Tuberculosis and Lung Disease, Shahid Beheshti University of Medical Sciences, Tehran, Iran, ²Massih Daneshvari Hospital, Tehran, Iran
- 4:15 PM Optimal Timing of Urinary Catheter Removal After Thoracic Surgery: A Randomized, Controlled Study
K. Shen, S. H. Blackmon, F. C. Nichols, S. D. Cassivi, W. S. Harmsen, B. Lechtenberg, K. E. Pierson, D. A. Wigle, M. S. Allen
Mayo Clinic, Rochester, MN
- 4:30 PM Surgical Treatment of Benign Tracheoesophageal Fistulas: A 10-Year Experience
B. J. Bibas¹, L. P. Eloy-Pereira¹, M. F. Tamagno¹, P. F. Cardoso¹, H. Minamoto¹, R. M. Terra², P. Pego-Fernandes¹
¹Heart Institute (InCor), Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo, Brazil, ²University of São Paulo Medical School, Brazil
- 4:45 PM A Multicenter Study of Volumetric Computed Tomography for Staging Malignant Pleural Mesothelioma
V. W. Rusch¹, R. Gill², A. Mitchell³, D. Naidich⁴, D. C. Rice⁵, H. I. Pass⁶, H. Kindler⁷, M. De Perrot⁸, J. Friedberg⁹
¹Memorial Sloan Kettering Cancer Center, New York, NY, ²Brigham and Women's Hospital, Boston, MA, ³Cancer Research and Biostatistics, Seattle, WA, ⁴New York University, NY, ⁵University of Texas MD Anderson Cancer Center, Houston, TX, ⁶New York University School of Medicine & Comprehensive Cancer Center, NY, ⁷The University of Chicago, IL, ⁸Toronto General Hospital and Princess Margaret Hospital, Toronto, Canada, ⁹University of Maryland, Baltimore
- 5:00 PM Impact of Pectus Excavatum on Cardiac Function: A Cardiovascular Magnetic Resonance Imaging Study
B. Hokschi¹, P. Fabien², R. A. Schmid¹, W. Andreas²
¹University Hospital, Bern, Switzerland, ²University Clinic of Cardiology, Bern, Switzerland
- 5:15 PM Preoperative Mediastinal Staging With Mediastinoscopy Causes a Significantly Higher Rate of Unsuspected Mediastinal Lymph Node Metastases than Endobronchial Ultrasound-Guided Transbronchial Needle Aspiration
J. Eckardt, E. Jakobsen
Odense University Hospital, Denmark

3:30 PM – 5:30 PM

ESTS @ STS: Controversial Issues in General Thoracic Surgery—Perspectives From Europe and North America

This collaborative session by STS and the European Society of Thoracic Surgeons will provide European and North American perspectives on a variety of controversial issues in general thoracic surgery. Expert thoracic surgeons will discuss controversies in the management of high-risk patients diagnosed with early stage lung cancer, the management of solitary pulmonary nodules/ground glass opacities, the management of patients diagnosed with achalasia, and the management of paraesophageal hernias (PEH).

Learning Objectives

Upon completion of this activity, participants should be able to:

- Describe the optimal work-up and treatment for high-risk patients diagnosed with early stage lung cancer
- Explain the role of limited resection and lobectomy in the management of solitary pulmonary nodules, as well as ground glass opacities
- Describe the role of new technologies in the optimal management for achalasia
- Identify the surgical controversies in the management of paraesophageal hernias

Moderators: Sean C. Grondin, Calgary, Canada, and Gaetano Rocco, Naples, Italy

3:30 PM Optimal Work-Up and Limits of Surgery

Alessandro Brunelli, Leeds, United Kingdom

3:40 PM Stereotactic Body Radiation Therapy vs Surgery

Gail E. Darling, Toronto, Canada

3:50 PM Discussion

4:00 PM Indications for Sublobar Resection

Raja M. Flores, New York, NY

4:10 PM Indications for Lobectomy

Gonzalo Varela, Salamanca, Spain

4:20 PM Discussion

4:30 PM Indications for Peroral Endoscopic Myotomy vs Heller Myotomy vs Balloon

Shanda H. Blackmon, Rochester, MN

4:40 PM Heller Myotomy With or Without Fundoplication

Phillippe Nafteux, Leuven, Belgium*

4:50 PM Discussion

5:00 PM Open vs Minimally Invasive PEH Repair

Donald E. Low, Seattle, WA

5:10 PM Mesh vs No-Mesh Repair of PEH

Xavier Benoit D'Journo, Marseille, France

5:20 PM Discussion

3:30 PM – 5:30 PM

SCA @ STS: Perioperative Evaluation and Management of Circulatory Shock

Nearly a third of patients are admitted to the ICU with circulatory shock, and early recognition and intervention of this clinical state is required to avoid subsequent multi-organ injury. Various types of shock commonly present in critically ill cardiac surgical patients, and each have implications for therapeutic management. Through lectures given by experts in the field, this joint STS-Society of Cardiovascular Anesthesiologists session explores different strategies for identifying various shock etiologies and the role of hemodynamic tools for monitoring fluid responsiveness and cardiac output in the perioperative setting. Faculty also will review current evidence-based guidelines and practices for managing circulatory failure, which will include presentations on evidence-based pharmacological management of different shock etiologies and the optimal choice and timing of intervention for mechanical support in circulatory shock.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Identify the various types of circulatory failure (shock types) and their presentation in cardiac surgical patients in the perioperative period
- List the pros and cons of different hemodynamic monitoring devices currently available for use in shock management
- Describe the optimal strategy for managing different types of shock and ideal targeted goals
- Outline the best available evidence for choosing pharmacological agents to treat circulatory failure (septic, cardiogenic, distributive/vasoplegia)
- Identify the indications, options, and outcomes for using mechanical circulatory support devices in patients who present with acute circulatory failure

Moderators: Aaron M. Cheng, Seattle, WA, and Jay G. Shake, Temple, TX

3:30 PM Introduction

3:35 PM Identifying Different Types of Shock in the Challenging Postoperative Cardiac Patient

Jerrold H. Levy, Durham, NC

3:55 PM Perioperative Hemodynamic Monitoring

Robert Sladen, New York, NY

4:15 PM Pharmacologic Management of Shock: What Strategies Have Proven Outcomes?

David Ciceri, Temple, TX

4:35 PM The Role of Mechanical Support for Shock and Choosing the Optimal Device

Ashish Shah, Baltimore, MD

4:55 PM Question-and-Answer Session/Panel Discussion



*Invited



WEDNESDAY, JANUARY 27, 2016

6:30 AM – 9:30 AM

Registration: STS University

7:00 AM – 9:00 AM and repeated from 9:30 AM – 11:30 AM 

STS University

Course 1: Essentials of TAVR

Course Directors: Basel Ramlawi, Houston, TX, and Eric L. Sarin, Atlanta, GA

Proficiency in transcatheter aortic valve replacement (TAVR) requires knowledge of multiple endovascular principles and techniques. In this course, attendees will get hands-on experience with the latest TAVR technology, including balloon-expandable and self-expanding TAVR platforms. Attendees will receive an introduction to the various sheaths, guidewires, and catheters relevant to TAVR. Basics of alternative TAVR access will be discussed, and all participants will gain operational knowledge of the various delivery systems.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Describe the decision-making process for choosing a TAVR access point (transfemoral, direct aortic, subclavian artery, and transapical)
- State the salient differences in the deployment of balloon-expanded versus self-expanded devices
- Describe the various types of sheaths and guidewires used during the TAVR procedure and understand reasons for their use

Course 2: TEVAR and Aortic Arch Debranching Procedures

Course Directors: Ali Khoynezhad, Los Angeles, CA, and Ourania A. Preventza, Houston, TX

This course will review basic catheter and wire skills for TEVAR. Participants will have hands-on experience with thoracic stent grafts and intravascular ultrasound, as well as using vascular plugs from the brachial or femoral approach. Furthermore, surgical techniques for zone 0-2 aortic arch debranching procedures will be discussed in detail.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Identify the most common catheters and wires for TEVAR
- Describe the deployment of commercially available stent grafts
- Explain the use of intravascular ultrasound and the use of the Amplatzer plug for subclavian artery occlusion
- Describe the surgical techniques used in aortic arch debranching

Course 3: Mitral Valve Repair

Course Directors: Evelio Rodriguez, Nashville, TN, and Robert Smith, Plano, TX

In this course, participants will interact with experts in mitral valve repair. Hands-on stations will cover the role of 3D transesophageal echo (TEE), posterior leaflet resection, anterior leaflet and commissural repair techniques, non-resection techniques, and different chordal approaches. There will be a dedicated station for secondary mitral repair techniques, including ring selection, leaflet extension, and papillary techniques. Finally, participants will receive hands-on experience with percutaneous mitral valve repair technology.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Discuss the importance of 3D TEE and mitral valve repair planning
- Describe different leaflet resection and non-resection approaches, in addition to different chordal techniques required for successful mitral valve repair
- Identify advance repair techniques for both primary and secondary mitral valve regurgitation
- List the procedural steps for percutaneous mitral valve repair technology deployment

Course 4: Valve-Sparing Aortic Root Replacement

Course Directors: Duke E. Cameron, Baltimore, MD, and Edward P. Chen, Atlanta, GA

This course will provide interactive, hands-on instruction of the surgical techniques and critical steps necessary for performing a successful valve-sparing aortic root replacement (VSRR).

Learning Objectives

Upon completion of this activity, participants should be able to:

- Describe the anatomy of the aortic root
- Summarize the technical steps necessary for a successful VSRR
- List different methods in choosing a graft size
- Discuss leaflet repair and annuloplasty methods

 Indicates that a ticket is required to attend.

Course 5: Aortic Root Enlarging Procedures

Course Directors: David A. Fullerton, Aurora, CO, and S. Adil Husain, San Antonio, TX

This course will review the anatomic approaches and surgical techniques employed in performing aortic root enlarging procedures. Surgical strategies addressed will include Nicks, Manouagian, Mavroudis, Ross Konno, upsizing the aortic root-Bentall type procedure, and myectomy/myotomy techniques.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Identify the anatomy and appropriate surgical landmarks in the left ventricular outflow tract and aortic valve apparatus
- Describe the incision sites and overall surgical techniques for a variety of root enlargement strategies
- Discuss surgical pitfalls associated with each strategy and mechanisms by which to delineate options based upon patient and anatomic substrate

Course 6: ICU/ECHO

Course Directors: Haney Mallemat, Baltimore, MD, and Glenn J. R. Whitman, Baltimore, MD

This course will review the utilization of a focused ultrasound examination of the heart, pleural space, and central veins. Attendees will gain hands-on experience with ultrasound simulators and live models. Topics will include basic cardiac anatomy and physiology as visualized by three common transthoracic views: inferior vena cava evaluation to determine intravascular volume, pleural space pathology (eg, pneumothorax and pleural effusions), and ultrasound techniques for central vein visualization and cannulation.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Perform an echocardiographic parasternal, apical, and subcostal view of the heart
- Evaluate the inferior vena cava to help determine volume status
- Identify the pleura and sliding lungs
- Demonstrate how ultrasound can be used to safely accomplish subclavian and internal jugular venous cannulation

Course 7: VATS Lobectomy

Course Directors: Robert J. McKenna, Los Angeles, CA, and Shari L. Meyerson, Chicago, IL

This course will review the indications, patient selection, technical steps, and recent advances for performance of lobectomy using video-assisted thoracic surgery (VATS). Participants will be able to perform VATS left upper lobectomies on porcine heart-lung blocks.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Describe the indications and steps to perform VATS
- Discuss potential pitfalls and strategies for intraoperative troubleshooting to successfully achieve minimally invasive lobectomy
- Identify instruments and other technologies available for performance of minimally invasive lobectomy

Course 8: Advanced Open Esophageal and Tracheal Procedures

Course Directors: Sidharta P. Gangadharan, Boston, MA, and Thomas K. Varghese Jr, Salt Lake City, UT

This course will provide hands-on training for several esophageal anastomosis techniques, as well as airway anastomosis and repair. These advanced operative techniques are not frequently utilized in most general thoracic surgery practices, but competence in these techniques is important.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Describe and perform the appropriate esophageal anastomosis technique depending on anatomic or other considerations
- Perform airway anastomoses and recognize technical pitfalls associated with the various techniques
- Identify the key steps of tracheobronchoplasty

Course 9: Chest Wall Resection and Adult Pectus Surgery

Course Directors: James M. Donahue, Baltimore, MD, and Mathew Thomas, Jacksonville, FL

In this hands-on course, participants will learn the various techniques for reconstruction of large chest wall defects after resection. Other highlights of the course will include stabilization of rib and sternal fractures using the most current reconstruction systems and minimally invasive repair of adult pectus excavatum defects.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Perform rigid and semi-rigid reconstruction of chest wall defects after resection, including the ribs and sternum
- Demonstrate how to stabilize single and multiple rib fractures using rib fixation devices
- Use sternal fixation devices to stabilize the sternum
- Perform minimally invasive repair of adult pectus excavatum defects

Course 10: Atrial Fibrillation (Maze Procedure)

Course Directors: Matthew A. Romano, Ann Arbor, MI, and Edward G. Soltesz, Cleveland, OH

Cardiac surgeons often encounter atrial fibrillation in patients referred for other cardiac surgical procedures. However, surgical ablation of atrial fibrillation continues to be undertreated at the time of cardiac surgery. Recent data have supported high rates of sinus rhythm restoration and a survival advantage for concomitant treatment of atrial fibrillation during cardiac surgery. Unfamiliarity with recommended lesion sets, energy sources, available devices, and techniques has resulted in an underutilization of the Maze procedure.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Explain the different energy sources for performing the Maze procedure
- Discuss the available devices for surgical ablation and left atrial appendage ligation
- Perform the Maze IV procedure lesions based on different operative scenarios (mitral valve surgery, coronary artery bypass grafting, aortic valve replacement)
- Describe the Cut and Sew Maze procedure

Course 11: Aortic Valve Leaflet Reconstruction

Course Directors: *Gebrine El-Khoury, Brussels, Belgium, and J. Scott Rankin, Nashville, TN*

Leaflet reconstruction is very important for aortic valve repair: 80% of aortic valves with moderate-to-severe insufficiency have leaflet defects requiring reconstruction. Additionally, most patients with aortic stenosis, rheumatic disease, and endocarditis have irreparable leaflets. Repairable leaflet defects include leaflet prolapse, nodular retraction, holes, commissural ruptures, and extensive lateral fenestrations. Current techniques for leaflet reconstruction are evolving, but include central plication for prolapse, nodular release, pericardial patches and strips for holes and ruptures, and complete pericardial leaflet replacement for irreparable leaflets. In this course, each of these methods will be illustrated and practiced on porcine hearts.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Assess leaflet pathology to select proper reconstructive techniques
- Perform aortic valve leaflet plication
- Demonstrate how to suture pericardial strips and patches into leaflets
- Perform complete pericardial leaflet replacement

Course 12: Advanced Aerodigestive Endoscopy

Course Director: *Daniel L. Miller, Marietta, GA*

This course will provide hands-on experience with established and new endoscopic procedures for benign and malignant aerodigestive diseases. Endobronchial ultrasound (EBUS) and endoscopic ultrasound (EUS) have attained firm places in the endoscopic diagnostic and staging armamentarium of mediastinal lymph nodes and esophageal cancer, respectively. Electromagnetic navigation bronchoscopy (ENB) is an interesting technology aimed at facilitating the endoscopic biopsy of peripheral lung lesions. Airway and esophageal stenting are important tools for the palliation of malignant disease and the treatment of benign disease in general thoracic surgical practice. New peroral endoscopic procedures (POEM) are increasing in popularity for achalasia, as are ablation techniques for Barrett's esophagus. Endoscopic mucosal resection (EMR) combined with ablation techniques is becoming the procedure of choice for small, localized esophageal tumors.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Discuss how EBUS and EUS are used in mediastinal and esophageal staging, respectively
- Describe potential indications and limitations of ENB
- Identify potential pitfalls and ways to avoid complications during airway and esophageal stent insertion
- Discuss the role of EMR for locally advanced esophageal cancers
- Describe the indications of endoscopic ablative techniques for Barrett's esophagus
- State the technical aspects and potential complications of the POEM procedure

Course 13: Adult Congenital Pulmonary Valve Replacement

Course Directors: *Patrick I. McConnell, Columbus, OH, and Jess L. Thompson, Tucson, AZ*

Pulmonary valve replacement (PVR) is commonly required in adolescent and adult patients after earlier transannular repair of tetralogy of Fallot (TOF). The reconstructed right ventricular outflow tract (RVOT) is anatomically diverse, commonly presenting with mixed pulmonary insufficiency and stenosis. There are key concepts and strategies at the time of PVR to deal with potentially unrecognized RVOT obstruction, augment typically distorted main and branch pulmonary arteries, and allow for the optimal size and position of the valve prosthesis—all in an effort to minimize the future need for surgical PVR in these young adults and adolescents.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Identify and recognize the complex anatomic relationships that can produce residual RVOT obstruction in adolescent and adult patients after transannular patch repair of TOF
- Demonstrate the surgical approaches and materials to augmenting the RVOT, main pulmonary, and branch pulmonary arteries prior to PVR
- Discuss the important anatomic characteristics and sizing of various stented valve prostheses and the potential impact on later percutaneous interventions and valve-in-valve PVR in adolescents and young adults
- Demonstrate the correct positioning of the valve prosthesis within the RVOT, avoiding residual main and branch pulmonary artery obstruction and optimizing the potential for percutaneous valve-in-valve PVR in the future

Course 14: TSDA Cardiac Surgery Simulation Curriculum

Course Directors: *Richard H. Feins, Chapel Hill, NC, and Nahush A. Mokadam, Seattle, WA*

This course is intended for thoracic residency faculty who are interested in adopting the TSDA Cardiac Surgery Simulation Curriculum. Attendees will use Component Task Simulators to learn how to conduct the simulation for each of the six modules (cardiopulmonary bypass, coronary artery bypass grafting, aortic valve replacement, massive air embolism, acute intraoperative aortic dissection, and sudden deterioration of cardiac function) that make up the curriculum. The program is not intended to provide training in how to do the procedures identified, but rather how to teach them using the curriculum.

Learning Objectives

Upon completion of this activity, participants should be able to:

- Perform simulation-based education in each of the six modules
- Assess performance of a trainee using the developed assessment tools
- Design and use the Component Task Simulators for each module





SCIENTIFIC POSTERS

Adult Cardiac

Increased Plasma Magnesium and Potassium Levels Are Associated With Postoperative Atrial Fibrillation After Cardiac Surgery: A Time-Matched Analysis

T. S. Lancaster, Washington University School of Medicine, St Louis, MO

Moderate Hypothermia at Warmer Temperatures Is Safe and Shortens Hospital Stay in Elective Proximal and Total Arch Surgery: Results in 664 Patients

O. A. Preventza, Baylor College of Medicine/Texas Heart Institute, Houston

Outcomes of 7,883 Isolated Coronary Artery Bypass Grafting Surgeries for Acute Coronary Syndrome Based on Japanese Adult Cardiovascular Surgery Database

S. Kawamoto, Tohoku University, Sendai, Japan

Do Familial Aortic Dissections Tend to Occur at the Same Age?

A. S. Chou, Yale University School of Medicine, New Haven, CT

Which Is the Better Procedure: Using the Frozen Elephant Trunk Technique or the Classical Elephant Trunk Technique Followed With Second-Stage Thoracic Endovascular Aortic Repair for Extensive Aortic Arch Repair?

M. Mutsuga, Nagoya University Graduate School of Medicine, Japan

Subclavian vs Direct Aortic Approach for Transcatheter Aortic Valve Implantation With CoreValve Revalving System: Insights From the Italian National Registry

G. Bruschi, Niguarda Ca' Granda Hospital, Milan, Italy

Effects of False Lumen Procedures on Aorta Remodeling of Chronic DeBakey IIb Aneurysm

T. Kim, Gangnam Severance Hospital, Yonsei University College of Medicine, Seoul, South Korea

Late Open Conversion After Abdominal Endovascular Aortic Repair

H. Joo, Severance Cardiovascular Hospital, Yonsei University College of Medicine, Seoul, South Korea

Mid-Term Prognosis of Reduction Ascending Aortoplasty for Dilatation of the Ascending Aorta in Patients With Aortic Valve Disease

S. Liu, National Center for Cardiovascular Diseases, Fuwai Hospital, Chinese Academy of Medical Sciences, and Peking Union Medical College, Beijing, China

Assessing Clinical Outcomes Among 13,906 Transfused Patients After Coronary Artery Bypass Surgery: Is It the Patient or Is It the Transfusion?

G. Paone, Henry Ford Hospital, Detroit, MI

Aortic Dissection in Pregnancy: Etiology, Management, and Outcomes in 24 Patients

J. Zhu, Beijing Anzhen Hospital, Capital Medical University, and Beijing Institute of Heart, Lung and Blood Vessel Diseases, China

Long-Term Outcomes After Reoperation on the Aortic Arch: Our Experience in 154 Patients

R. Di Bartolomeo, S. Orsola-Malpighi Hospital, Bologna, Italy

Outcomes of a Less Invasive Approach in Proximal Aortic Surgery

M. Levack, Cleveland Clinic, OH

A Preoperative Prediction Model for Perioperative Transfusions After Isolated Coronary Artery Bypass Grafting Surgery

D. S. Likosky, University of Michigan Health System, Ann Arbor

Assessment of the Association of Bilateral Internal Thoracic Artery Skeletonization and Sternal Wound Infection After Coronary Artery Bypass Grafting Surgery

F. D. Rubens, University of Ottawa Heart Institute, Canada

Mild Acute Kidney Injury After Transcatheter Aortic Valve Replacement Is Associated With Poor Outcome: A Study Considering Valve Academic Research Consortium-I (VARC-I) and VARC-II

S. Aalaei-Andabili, University of Florida, Gainesville

Optimal Preoperative Left Atrial Diameter for Atrial Fibrillation Surgery in Patients With Mitral Valve Disease and Atrial Fibrillation

Y. Ishii, Nippon Medical School, Tokyo, Japan

Fibrous Reconstruction With Commando Operation: Newer Indications in Non-Endocarditis Patients

J. J. Idrees, Cleveland Clinic, OH

Only lead authors are listed for scientific posters.

Outcomes of Patients Who Undergo Cardiac Surgery After Liver Transplantation

P. Harrington, *University of Alabama at Birmingham*

Trends in Surgical Intervention for Endocarditis: A Single-Center Experience in 1,404 Patients

F. H. McCarthy, *Hospital of the University of Pennsylvania, Philadelphia*

Outcomes Following Surgical Pulmonary Embolectomy for Acute Pulmonary Embolus: A Multi-institutional Study

W. B. Keeling, *Emory University, Atlanta, GA*

Aortic Remodeling Following Thoracic Endovascular Aortic Repair for Complicated Acute DeBakey 3 Aortic Dissection

B. G. Leshnower, *Emory University School of Medicine, Atlanta, GA*

Thoracic Endovascular Aortic Repair Using the Percutaneous Technique or Open Exposure: A Comparison of Early Outcomes

L. S. Foley, *University of Colorado, Aurora*

Is Surgery the Optimal Therapy for the Treatment of Aortic Valve Stenosis for Patients With an Intermediate STS Risk Score?

M. A. Groh, *Asheville Cardiovascular & Thoracic Surgeons, PA, NC*

Previous Percutaneous Coronary Intervention Does Not Increase Postoperative Adverse Outcomes After Subsequent Coronary Artery Bypass Grafting

C. Ueki, *Shizuoka General Hospital, Japan*

Does Femoral Cannulation Increase Cerebral Embolic Events During Minimally Invasive Cardiac Surgery? A Diffusion-Weighted Magnetic Resonance Imaging Study

H. Je, *Pusan National University Yangsan Hospital, South Korea*

Outcomes in Patients Undergoing Combined Heart-Kidney Transplants: The Impact of Mechanical Circulatory Support

S. Bansal, *Mayo Clinic, Jacksonville, FL*

Effect of Status 1A on Heart Transplant Outcomes in the Continuous-Flow Left Ventricular Assist Device Era

J. Trivedi, *University of Louisville, KY*

Frailty Testing Can Identify Patients at Risk for Aspiration

B. J. Bowles, *St George Cardiovascular and Thoracic Surgery, UT*

Acute Kidney Injury Severity and Long-Term Readmission and Mortality Following Cardiac Surgery

J. R. Brown, *Dartmouth College - Geisel School of Medicine, Lebanon, NH*

The Impact of Liver Stiffness on Predicting Right Ventricular Failure Following Left Ventricular Assist Device Implantation

N. Kashiyama, *Osaka University Graduate School of Medicine, Suita, Japan*

Oversizing Decreases Performance in Commercially Available Aortic Valve Bioprotheses

J. D. Cleveland, *University of Southern California Keck School of Medicine, Los Angeles*

The Efficacy and Complications of Cerebrospinal Fluid Drainage for Thoracoabdominal Aortic Aneurysm Repair

J. Sugiura, *Nagoya University Graduate School of Medicine, Japan*

Whole Body Perfusion in Patients Undergoing Frozen Elephant Trunk for Type A Acute Aortic Dissections: Early Experience

G. Cappabianca, *University of Insubria, Varese, Italy*

News to the World: Intermediate Results With the Use of the New Generation Multilayer Flow Modulator Grafts in the Endovascular Treatment of Aortic Dissections and Aneurysms

V. S. Costache, *University Lucian Blaga Sibiu, Romania*



Cardiothoracic Surgical Education

The Joint Council on Thoracic Surgery Education "Educate the Educator" Faculty Development Course: Analysis of the First 5 Years

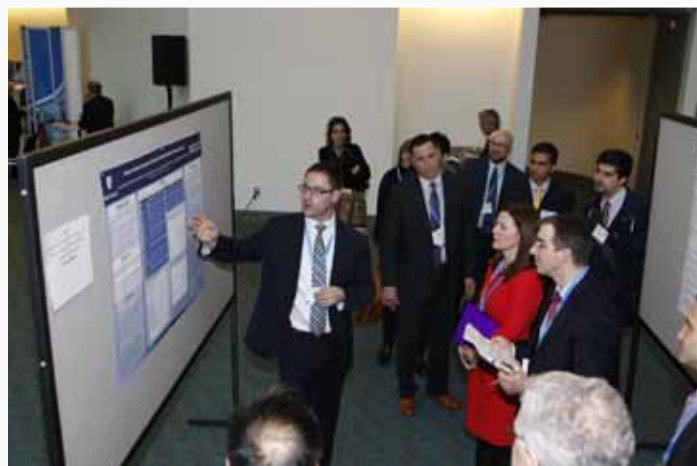
S. C. Yang, *The Johns Hopkins University School of Medicine, Baltimore, MD*

Experience With the Cardiac Surgery Simulation Curriculum: Results of Resident and Faculty Survey

N. A. Mokadam, *University of Washington, Seattle*

Resident Identification of Significant Learning Experiences: A Qualitative Analysis

E. Michel, *Northwestern University, Chicago, IL*



Congenital

Current Outcomes and Trends of Ventricular Assist Device Selection in Children With End-Stage Heart Failure

J. Miller, Washington University School of Medicine/Barnes Jewish Hospital, St Louis, MO

Outcomes of Functional Single Ventricle and Total Anomalous Pulmonary Venous Connection

T. Sakurai, Chukyo Hospital, Nagoya, Japan

Mechanical Circulatory Support as Bridge to Transplantation for the Failing Single Ventricle Circulation

G. J. Arnaoutakis, University of Pennsylvania Health System, Philadelphia

Echocardiography Is Not a Consistent Predictor of Candidacy for Biventricular Repair in Patients With Borderline Left Heart Structures

C. M. Mery, Texas Children's Hospital/Baylor College of Medicine, Houston

Comparable Cerebral Blood Flow Velocities in Both Hemispheres With Regional Cerebral Perfusion During Infant Aortic Arch Surgery

A. Rüffer, University Hospital Erlangen, Germany

Primary Cardiac Tumors in Infants and Children: Surgical Strategy and Long-Term Outcome

E. B. Delmo Walter, Trauma Center Berlin, Germany

Association of Nadir Oxygen Delivery on Cardiopulmonary Bypass With Glial Fibrillary Acid Protein in Pediatric Heart Surgery Patients

J. Magruder, The Johns Hopkins Hospital, Baltimore, MD

Anatomical Predictor of Postoperative Compression of Pulmonary Artery After the Norwood Procedure Without Supplementary Material

S. Asada, Kyoto Prefectural University of Medicine, Japan

Looks Do Matter! Aortic Arch Shape Following Hypoplastic Left Heart Syndrome Palliation Correlates With Cavopulmonary Physiology and Outcomes

J. L. Bruse, Centre for Cardiovascular Imaging, University College London, Institute of Cardiovascular Science & Cardiorespiratory Unit, Great Ormond Street Hospital, United Kingdom

Tracheostomy Following Surgery for Congenital Heart Disease: Epidemiological Analysis Based on the STS Congenital Heart Surgery Database

C. W. Mastropietro, Riley Hospital for Children, Indianapolis, IN

Completeness and Reliability of Perioperative Variables in Local Clinical Registry Data vs Research Coordinator Chart Review for Children Undergoing Heart Surgery

M. Nathan, Boston Children's Hospital, MA

The Impact of Frequency and Severity of Rejection Episodes After Heart Transplantation on Cardiac Growth in Children

E. B. Delmo Walter, Trauma Center Berlin, Germany

In-Hospital Cardiac Arrest Following Pediatric Heart Operations of Varying Complexity: An Analysis of the Virtual Pediatric Systems Database

P. Gupta, Arkansas Children's Hospital, Little Rock

Achievements and Limitations of a Strategy of Rehabilitation of the Native Pulmonary Vessels in Pulmonary Atresia, Ventricular Septal Defect, and Major Aortopulmonary Collateral Arteries

J. Soquet, Royal Children's Hospital, Parkville, Australia

Regionalization of Pediatric Cardiac Surgery Lowers 5-Year Mortality and Freedom From Reoperation Following the Arterial Switch Operation

M. F. Swartz, University of Rochester - Strong Memorial Hospital, NY

Long-Term Surgical and Non-Surgical Outcomes of Patients With Ebstein's Anomaly: A Single-Institution Clinical Series

M. Balasubramanian, University of Iowa Hospital & Clinics, Iowa City

Antibody-Mediated Rejection After Pediatric Heart Transplant Is Associated With Differential Endothelial Cell Activation and Matrix Metalloproteinase Expression

M. N. Kavarana, Medical University of South Carolina, Charleston

Mid-Term Outcomes of Patients With 16 mm Polytetrafluoroethylene Conduit After an Extracardiac Fontan Procedure

S. Cho, Seoul National University Hospital, South Korea

Impact of Prematurity on Clinical Outcomes in Infants With Hypoplastic Left Heart Syndrome

C. Haller, The Hospital for Sick Children, Toronto, Canada

Early Extubation Within 6 Hours Should Be Standard Practice Following Primary Repair For Tetralogy of Fallot

G. Pelella, Alder Hey Children's Hospital, Liverpool, United Kingdom

Novel Modifications of a Ventricular Assist Device for Infants and Children

M. C. Monge, Ann & Robert H. Lurie Children's Hospital of Chicago, IL

Critical Care

Temperature Management After Aortic Arch Surgery With Deep Hypothermic Circulatory Arrest Affects Survival and Neurologic Outcome

A. Rungtatscher, University of Verona, Italy

Rescue Therapy With High Frequency Percussive Ventilation in Patients With Hypoxemia Refractory to Conventional Ventilation After Cardiac Surgery

I. Wong, New York Methodist Hospital, Brooklyn, NY

Postoperative Hypoglycemia Is Associated With Worse Outcomes After Cardiac Surgery

L. E. Johnston, University of Virginia, Charlottesville



General Thoracic

Single vs Double Lung Retransplantation Does Not Affect Survival Based on Previous Transplant Type

E. Schumer, University of Louisville, KY

Single Center Experience in Urgent Lung Transplantation Program: Early and Mid-Term Outcomes and Risk Factor Analysis

M. Schiavon, University of Padua, Italy

Surgical Management of Advanced Stage Non-Small-Cell Lung Cancer Is Decreasing But Remains Associated With Improved Survival

E. A. David, University of California, Davis Medical Center, Sacramento

Open Repair Remains the Gold Standard for Type III/IV Paraesophageal Hernias: A Modern Series of 94 Consecutive Patients

W. M. Burrows, University of Maryland School of Medicine, Baltimore

Outcomes After Esophagectomy for the Treatment of Failed Prior Antireflux Surgery

O. Awais, University of Pittsburgh Medical Center, PA

Defining the Ideal Time Interval Between Planned Induction Therapy and Surgery for Stage IIIA Non-Small-Cell Lung Cancer

P. P. Samson, Washington University School of Medicine, St Louis, MO

Barriers and Facilitators to Accessing Optimal Esophageal Cancer Care for Socioeconomically Disadvantaged Patients

R. M. Reddy, University of Michigan, Ann Arbor

Triangular vs Circular Stapled Anastomosis for Minimally Invasive Esophagectomy: Results From a Randomized, Controlled Study

Y. Shen, Zhongshan Hospital, Fudan University, Shanghai, China

Lung Cancer as a Second Primary Among Patients With Previous Malignancy: Who Is at Risk?

G. X. Wu, City of Hope National Medical Center, Duarte, CA

Predictors of Pleural Implants in Patients With Thymic Tumors

M. K. Kamel, New York Presbyterian Hospital, Weill Cornell Medical College, NY

Hyperthermic Pleural Lavage for Pleural Metastasis

D. L. Miller, WellStar Health System, Marietta, GA

Impact of Surgery for Stage I Non-Small-Cell Lung Cancer on Quality of Life

R. Schwartz, North Shore-LIJ Health System, Great Neck, NY

Iterative Surgery for Re-Recurrence After Complete Resection of Thymic Tumors

A. D'Andrilli, University of Rome Sapienza, Italy

CHADS₂ Score Predicts Postoperative Atrial Fibrillation in Patients Undergoing Elective Pulmonary Lobectomy

S. Kotova, Portland Providence Medical Center, OR

Significance of Epidermal Growth Factor Receptor Mutation Status in pN1-pN2 Pulmonary Adenocarcinoma: The Implication for the Prognosis

T. Isaka, Kanagawa Cancer Center, Yokohama, Japan

Does Repeat Lung Resection Provide a Chance of Cure for Recurrent Pulmonary Metastases of Colorectal Cancer? Results of a Retrospective Japanese Multicenter Study

T. Hishida, National Cancer Center Hospital East, Kashiwa, Japan

Barriers to Video-Assisted Thoracic Surgery Adoption: A Premier Prospective™ Analysis of Lobectomy for Primary Lung Cancer

J. Blasberg, University of Wisconsin, Madison

Evaluation of Emphysema Severity Calculated Using High-Quality 3-Dimensional Computed Tomography Images Predicts Postoperative Complications in Lung Cancer Patients

Y. Makino, Tokyo Medical University, Japan

The Diminishing Thoracic Surgery Experience During General Surgery Residency

W. Ragalie, Medical College of Wisconsin, Milwaukee

Serial Improvement of Quality Indicators in Pediatric Thoracoscopic Pulmonary Resection: 10-Year Experience of 195 Consecutive Cases

S. Park, Seoul National University Hospital, South Korea

Outcomes of Major Lung Resection for Lung Cancer in Patients With Cardiac Artery Diseases Taking Antithrombotic Agents

Y. Kitamura, Juntendo University School of Medicine, Tokyo, Japan

Patient Preferences in Treatment Choices for Early Stage Lung Cancer

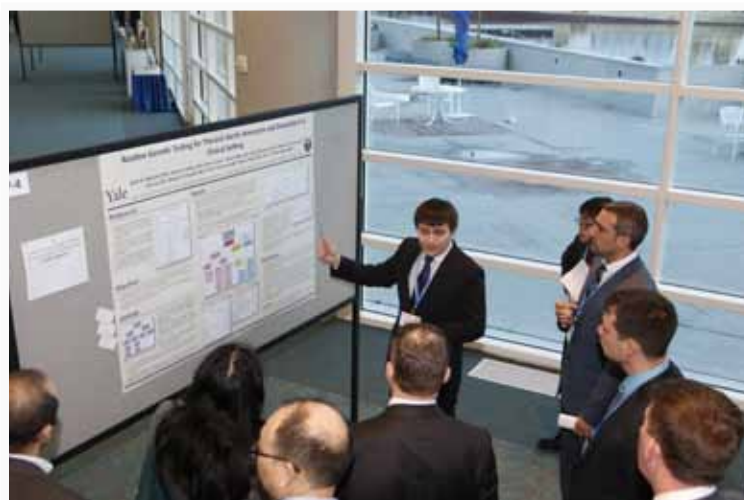
B. C. Tong, Duke University Medical Center, Durham, NC

Travel Distance to Treatment Center and Likelihood of Undergoing Surgery for Lung Cancer

T. Grenda, University of Michigan, Ann Arbor

Surgery and Surgical Consult Rates for Early Stage Lung Cancer in Ontario: A Population-Based Study

A. Bendzsak, University of Toronto, Canada



REGISTRATION INSTRUCTIONS

Registration and Housing are available online only at www.sts.org/annualmeeting.

Please note: Registration is required in order to reserve Annual Meeting housing.

Deadline: Early bird registration will end Tuesday, December 1, 2015; registration fees will increase after this date. Additionally, you must register by Monday, January 4, 2016, to reserve housing at the special Annual Meeting rate.

Questions about registration? Contact the Society's official registration partner, Experient, at (800) 424-5249 (toll free), 00-1-847-996-5829 (for international callers), or sts@experient-inc.com.

REGISTRATION CATEGORIES

Annual Meeting registration is open to everyone with an interest in cardiothoracic surgery. Please note that STS members are NOT automatically registered for the Annual Meeting.

STS SURGEON MEMBERS: STS Active, International, and Senior Members.

PENDING ACTIVE AND INTERNATIONAL MEMBERS: Cardiothoracic surgeons who are not currently STS members but have submitted their completed application materials for Active or International Membership by October 15, 2015.

STS ASSOCIATE MEMBER PHYSICIANS (NON-CT SURGEONS): STS member physicians with an interest in cardiothoracic surgery who are not eligible to become Active, International, Candidate, or Pre-Candidate Members.

STS ASSOCIATE MEMBER NON-PHYSICIANS: STS members who are PhD research scientists, physician assistants, perfusionists, nurses, nurse practitioners, practice administrators, data managers, and others with an interest in cardiothoracic surgery.

STS PRE-CANDIDATE AND CANDIDATE MEMBERS: **Pre-Candidate:** Medical students and general surgery residents who are STS members. **Candidate:** Cardiothoracic surgery residents/fellows/trainees who are STS members.

NON-MEMBER PHYSICIANS: Non-member cardiothoracic surgeons and other physicians with an interest in cardiothoracic surgery.

NON-MEMBER NON-PHYSICIANS: Non-member PhD research scientists, physician assistants, perfusionists, nurses, nurse practitioners, practice administrators, data managers, and others with an interest in cardiothoracic surgery.

NON-MEMBER RESIDENTS, FELLOWS, AND MEDICAL STUDENTS: In order to register for the STS 52nd Annual Meeting, non-member general surgery residents and cardiothoracic surgery residents/fellows must complete a registration certification form during the online registration process. Non-member medical students must upload a copy of their current student identification card to the registration website.

SEPARATE REGISTRATIONS

New this year, the registration process has been simplified. See the pricing grid on page 45 for details.

- Annual Meeting registration provides access to the Opening Reception on Sunday, January 24, and all educational sessions on Monday, January 25, and Tuesday, January 26, with the exception of the International Symposium (Monday) and Ethics Debate (Tuesday). STS University (Wednesday, January 27) also is priced separately.
- Tech-Con registration provides access to all STS/AATS Tech-Con 2016 educational sessions on Saturday, January 23, and Sunday, January 24.
- The new Weekend Pass provides access to all educational sessions on Saturday, January 23, and Sunday, January 24, other than Tech-Con. (You must register for the Annual Meeting in order to register for a Weekend Pass.)

You also may purchase a separate ticket for the Monday night Social Event at Corona Ranch (see page 24 for details).

BECOME AN STS MEMBER!

Non-members interested in attending the STS 52nd Annual Meeting can gain numerous benefits by applying for STS membership.

The deadline for submission of completed Active and International Membership applications to be considered at the 52nd Annual Meeting was October 15, 2015. Non-members with a "pending" application status can register for the STS 52nd Annual Meeting at a reduced rate.

Applications for Associate, Candidate, or Pre-Candidate Membership must be submitted by January 15, 2016, to allow time for processing.

Those approved for membership can attend the STS 52nd Annual Meeting as members and immediately begin enjoying member benefits, such as discounted registration fees.

For membership information and an application, visit www.sts.org/membership or contact Sarah Foreman, Member Services Coordinator, at sforeman@sts.org.

CANCELATION POLICY

All cancellation requests must be made in writing and e-mailed to stsheadquarters@sts.org by Friday, January 15, 2016. Requests for refunds will not be honored if submitted after that date. A processing fee of \$100 will be charged for all cancellations.

ONSITE REGISTRATION INFORMATION

Onsite registration will be located on the Lower Level of the North Building of the Phoenix Convention Center during the following times:

Friday, January 22, 2016	3:00 PM – 6:00 PM
Saturday, January 23, 2016	7:00 AM – 6:00 PM
Sunday, January 24, 2016	7:00 AM – 6:30 PM
Monday, January 25, 2016	6:30 AM – 5:00 PM
Tuesday, January 26, 2016	6:30 AM – 4:30 PM
Wednesday, January 27, 2016	6:30 AM – 9:30 AM

PRICING

	STS Members					Non-Members		
	Surgeon Members	Pending Active and International Members*	Associate Member Physicians (Non-CT Surgeons)	Associate Member Non-Physicians	Pre-Candidate and Candidate Members	Non-Member Physicians	Non-Member Non-Physicians	Non-Member Residents, Fellows, and Medical Students
STS 52nd Annual Meeting (includes Annual Meeting Online)								
Through December 1	\$275	\$675	\$275	\$125	\$0	\$850	\$300	\$125
After December 1	\$375	\$825	\$375	\$225	\$0	\$975	\$450	\$225
STS/AATS Tech-Con 2016								
Through December 1	\$400	\$625	\$400	\$400	\$0	\$625	\$625	\$0
After December 1	\$500	\$725	\$500	\$500	\$0	\$725	\$725	\$0
Weekend Pass (must be registered for the STS Annual Meeting)								
Weekend Pass	\$250	\$350	\$250	\$150	\$50	\$350	\$200	\$100
Weekend Pass (with Tech-Con)	\$125	\$175	\$125	\$75	\$25	\$175	\$100	\$50
Includes: STS/SCA, STS/CHEST**, Cardiopulmonary Bypass Simulation Course, Acquired and Congenital Heart Surgery Symposium, Practice Management Summit, STS/AATS Critical Care Symposium, Residents Symposium, ACC @ STS, How To: Technical Tricks and Pitfalls to Simplify Cardiac Surgery Procedures, Resuscitation of Patients Who Arrest After Cardiac Surgery**, Surgical Symposia (Congenital and General Thoracic), CT Surgery Interprofessional Education Symposium								
Ticketed Sessions (must be registered for the STS Annual Meeting)								
Monday Night Social Event	\$125	\$125	\$125	\$125	\$125	\$125	\$125	\$125
Ethics Debate	\$40	\$40	\$40	\$40	\$40	\$40	\$40	\$40
International Symposium & Reception	\$40	\$40	\$40	\$40	\$40	\$40	\$40	\$40
STS University Course (each)	\$150	\$150	\$150	\$150	\$150	\$150	\$150	\$150

*Must have submitted completed application materials by October 15, 2015.

**Limited attendance.

HOUSING AND TRAVEL INFORMATION

MEETING LOCATION

All educational programming for the STS 52nd Annual Meeting will take place in the North Building of the Phoenix Convention Center, unless otherwise noted. Shuttle service will not be offered as all official STS hotels are located within walking distance of the Phoenix Convention Center.

Phoenix Convention Center | 100 N Third St | Phoenix, AZ 85004
(602) 262-6225 | www.phoenixconventioncenter.com



HOUSING INFORMATION

STS has secured discounted rates at the Hyatt Regency Phoenix, Renaissance Phoenix Downtown Hotel, Sheraton Phoenix Downtown, and The Westin Phoenix Downtown. You can reserve housing while you are registering for the Annual Meeting at www.sts.org/annualmeeting. Attendee housing requests must be completed online no later than Monday, January 4, 2016.

Questions about housing? Contact the Society's official housing partner, Experient, at (800) 424-5249 (toll free), 00-1-847-996-5829 (for international callers), or sts@experient-inc.com.

AIR TRAVEL

The Phoenix Sky Harbor International Airport (PHX) is located approximately 4.5 miles from the Phoenix Convention Center and all official STS hotels.

GROUND TRANSPORTATION FROM PHX

Car Rental

STS has negotiated special car rental rates from Hertz Rent a Car. Reservations may be placed at www.hertz.com or at (800) 654-2240 from within the United States and Canada; from international locations, call 00-1-405-749-4434. To receive the special STS rate, reference convention number (CV#) 04XS0004 when making your car rental reservations.

Taxi Service

If you require a taxi upon arrival at PHX, follow signs directing you to Ground Transportation. The approximate one-way cost to the hotels or convention center is \$20.

Shuttle Service / Private Car

Airport shuttle and private car services are available through SuperShuttle. Shuttle service can be accessed from the Transportation Plazas across from Terminals 1 and 2 and curbside at the Commuter Terminal. Call SuperShuttle directly or visit the website to find the shuttle that best suits your needs. Shuttle service is approximately \$13 per person each way from PHX to the official STS hotels; private car service is approximately \$25 each way. For reservations, call (602) 244-9000 or visit supershuttle.com.

INFORMATION FOR INTERNATIONAL ATTENDEES

Visa Information

If you are not a US citizen and plan to attend the STS Annual Meeting, advance planning is critical! Attendees from outside the United States may need to apply for a visa at the American embassy, consulate, or other visa-issuing office in their country of origin. Please begin your visa application process as soon as possible. The application and interview process varies from country to country and can take up to 90 days to complete. Learn more about the visa process at www.travel.state.gov.

The Visa Waiver Program allows citizens of participating countries travel to the United States for 90 days or less without a visa, provided that they meet all program requirements and have a valid Electronic System for Travel Authorization (ESTA) approval from the US government. For more information about the Visa Waiver Program, visit www.travel.state.gov/content/visas/english/visit/visa-waiver-program.html.

Letters of Invitation

If you need a personalized letter of invitation, please visit www.sts.org/annualmeeting and complete the Letter of Invitation Request Form. Once you have completed the request form, STS will e-mail a personalized letter of invitation to you within 1 business week. Please note: STS cannot promise that you or your colleagues will receive a visa, nor can it change the decision of any governmental agency should your application be denied.

ABOUT PHOENIX AND THE UNITED STATES

Even for the seasoned traveler, a trip may require some advance planning. Learn more about essential information, helpful travel tips, and answers to common questions at these websites:

- www.visitphoenix.com (Phoenix Convention & Visitor's Bureau)
- www.skyharbor.com (Phoenix Sky Harbor International Airport)
- www.travel.state.gov (US State Department)
- www.cbp.gov (Customs and Border Protection)
- www.dhs.gov/how-do-i-visit-united-states (Department of Homeland Security)

STS 52ND ANNUAL MEETING ONLINE

Free with Annual Meeting Registration!

New this year, access to the STS 52nd Annual Meeting Online is **included** with Annual Meeting registration. With such a full meeting schedule, it's impossible to attend every presentation of interest. This web-based video presentation will let you earn CME credit for sessions you were unable to attend—or review sessions of special interest—in the comfort of your home or office. The Online product will be available approximately 1 month after the conclusion of the Annual Meeting and will be accessible for up to a year.

Accreditation Statement: The Society of Thoracic Surgeons is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

STS 52nd Annual Meeting Online: The Society of Thoracic Surgeons designates this enduring material for a maximum of 104.75 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.





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As Chair of the Workforce on Annual Meeting, I would like to thank the members of the Annual Meeting Task Forces and all abstract reviewers who volunteered their time, energy, and expertise in developing the STS 52nd Annual Meeting program.

—K. Robert Shen, Chair, Workforce on Annual Meeting

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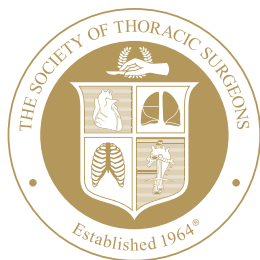
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