



# The STS Meeting Bulletin

STS 51<sup>ST</sup> ANNUAL MEETING • JANUARY 24-28, 2015 • SAN DIEGO, CALIFORNIA

## Monday Edition

### Monday

6:30 a.m. – 5:00 p.m.

Registration: STS 51st Annual Meeting  
Lobby D

7:00 a.m. – 7:15 a.m.

Opening Remarks  
Ballroom 20ABC

7:15 a.m. – 8:15 a.m.

J. Maxwell Chamberlain Memorial Papers  
Ballroom 20ABC

8:15 a.m. – 9:00 a.m.

Richard E. Clark Papers  
Ballroom 20ABC

9:00 a.m. – 4:30 p.m.

Exhibits Open  
Exhibit Hall  
Scientific Posters Open  
Rooms 29-32 Foyer

9:30 a.m. – 9:40 a.m.

The Annals of Thoracic Surgery 50th  
Anniversary Presentation  
Ballroom 20ABC

*Continued on page 5*

## Attend Today's Presidential Address



Don't miss the Presidential Address by David A. Fullerton, MD – today at 9:50 a.m. in Ballroom 20ABC.

## Tech-Con Charts the Future of Innovation

STS/AATS Tech-Con 2015 began Saturday afternoon with a joint session focused on the pathways and barriers to the adoption of new cardiothoracic surgery devices.

"Sessions like this never used to occur. You never talked to industry. They were the 'evil empire,'" said famed medical device innovator Thomas J. Fogarty, MD, PhD, of Portola Valley, Calif., who began the presentations.

But that is changing. Much of the rest of the session detailed how industry, surgeon innovators, and the federal government are all working together to try and eliminate the barriers to rapid device development, assessment, and deployment in the United States.

"What we are discussing are Class III devices, which have significant risk for health and human safety," said John C. Laschinger, MD, of Silver Spring, Md., a cardiothoracic surgeon serving as a medical officer at the US Food and Drug Administration. Class III devices receive different scrutiny in the United States compared to



Panelists discussed how surgeon innovators, industry, and the government are working together to spur development of new cardiothoracic surgery devices.

Europe and other parts of the world, leading to regulatory disparity – especially in the timing of approval and release of new devices to market, a place in which the United States is falling behind.

Dr. Laschinger pointed out that to address this problem,

FDA "has instituted an early feasibility program that has been very successful in bringing early feasibility studies back to the United States, and we have seen several successes in that area so far and are seeing more and

*Continued on page 4*

## J. Maxwell Chamberlain Memorial Papers Feature Best in Cardiothoracic Surgery Research

The STS 51st Annual Meeting scientific sessions will kick off this morning with the presentation of three J. Maxwell Chamberlain Memorial Papers. The Chamberlain paper designation honors Dr. Chamberlain, who has been called "the most important influence in the formation of The Society of Thoracic Surgeons."

### General Thoracic

Registries can serve as a valuable source for physicians to improve their practices, but the less complete a database is, the less reliable analyses of those data are. Such was the case when researchers compared data from surgical procedures entered into the STS General Thoracic Surgery Database (GTSD) and the American

College of Surgeons National Surgical Quality Improvement Program (NSQIP), said study co-author Mark S. Allen, MD.

Dr. Allen, a Professor of Surgery at the Mayo Clinic in Rochester, Minn., and STS First Vice President, will present the results of this year's Chamberlain Paper for General Thoracic Surgery, "Comparison of The Society of Thoracic Surgeons General Thoracic Surgery Database and the American College of Surgeons National Surgical Quality



MARK S. ALLEN, MD

Improvement Program in a General Thoracic Surgical Practice."

The GTSD collects data on every general thoracic surgical operation performed by a participating institution, while NSQIP uses an algorithm "that collects about 20% of the operations in an attempt to save some work, time, and expense," said Dr.

Allen.

The researchers reviewed procedures at the Mayo Clinic in

*Continued on page 6*



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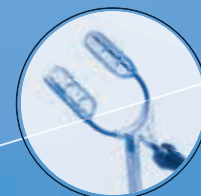
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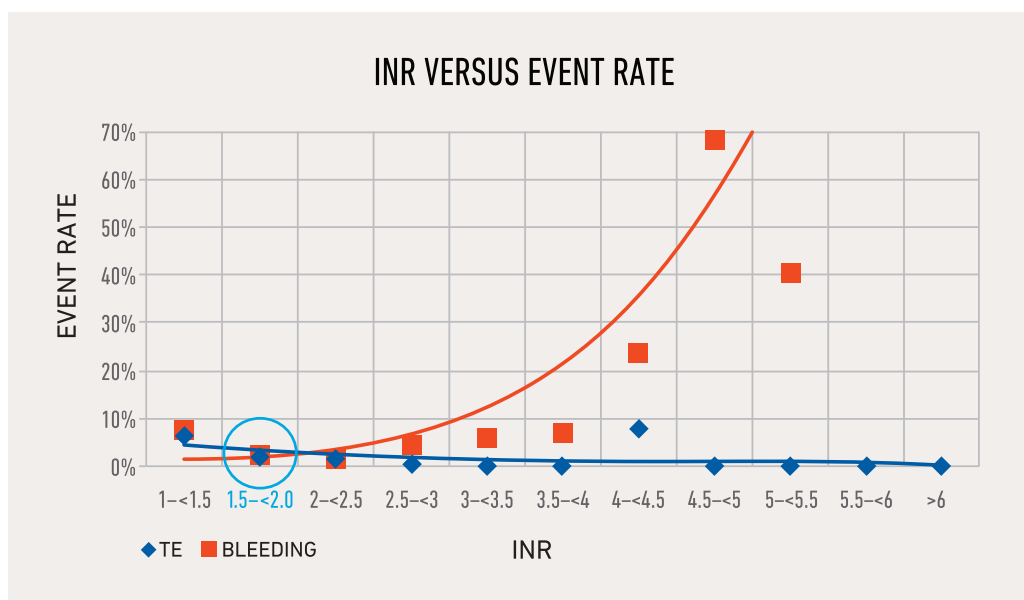
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## Tech-Con Charts the Future

Continued from page 1

more applications every day.” This is part of a Total Product Life Cycle Approach to data, said Dr. Laschinger, which allows streamlining of clinical trials, data collection, and analysis. A critical part of all of this is expanded postmarket approval data collection, using registries such as the STS/ACC TVT Registry™. “[The TVT Registry] really is the lynchpin to make all this happen,” Dr. Laschinger said.

“There are now at least eight early feasibility trials that the FDA has approved in the United States, including three in the transcatheter mitral valve space,” added Michael J. Mack, MD, in his presentation. Among the three companies

involved, “there have been a total of 18 transcatheter mitral valve device studies done in the world and now there will be three feasibility trials with 15 patients each in the United States. So I think the FDA truly has stepped up and is allowing early innovation to come into the United States.”

The panel of session speakers conducted two lively discussion and question-and-answer periods led by session moderators and Tech-Con Task Force Co-Chairs Vinod H. Thourani, MD, of Atlanta, and K. Robert Shen, MD, of Rochester, Minn.

After the joint opening session,



The Tech-Con exhibits showcased the latest technology in cardiothoracic surgery.

concurrent adult cardiac and general thoracic tracks followed in the afternoon and continued throughout

Sunday, addressing some of the most critical innovations looming on the medical device horizon.

## New Session Highlights How Data Can Drive Practice

A new session on Monday afternoon will offer physicians strategies for utilizing the STS National Database to implement quality improvement and drive reimbursement.

Since 1989, the STS National Database has been a valuable tool for assessing outcomes in cardiothoracic surgery. But how has the Database evolved to meet changing physician needs, and how can doctors use the Database to improve their practices?

These are just some of the questions to be addressed in a new session titled “Evidence and Quality Reshaping Practice,” which will be held today from 1:15 p.m. to 5:15 p.m. Attendees will learn about new science and evidence that impacts clinical cardiothoracic surgery, data-driven public reporting, quality measurement, and clinical practice guideline development.

“Quality metrics in cardiothoracic surgery are undergoing ever more scrutiny by health systems and payers,” said Vinay Badhwar, MD, Chief of Cardiac Surgery at the University of Pittsburgh Medical Center Presbyterian and a session moderator. “Understanding how to deliver optimal quality care and how the future reporting of quality may be shaped will be useful for all practicing surgeons.”

The session will include six scientific abstract presentations, three lectures, and three panel discussions with the shared theme of using data to drive practice. The session will kick off with presentations summarizing the size and scope of the STS National Database. Chair of the STS Workforce on National Databases David M. Shahian, MD, of Massachusetts General Hospital in Boston, will discuss the methodology behind developing a fair and risk-adjusted model to report

surgical outcomes.

Attendees will also hear how data can improve quality and aid guideline development. Attendees will receive an update on the three STS National Database components from Marshall L. Jacobs, MD, of Johns Hopkins Medicine in Baltimore, who is Chair of the STS Congenital Heart Surgery Database Task Force; Benjamin D. Kozower, MD, of the University of Virginia Health System in Charlottesville, who is Chair of the STS General Thoracic Surgery Database Task Force; and Richard L. Prager, MD, of the University of Michigan Health System in Ann Arbor, who is Chair of the STS Adult Cardiac Surgery Database Task Force.



VINAY BADHWAR, MD

Meanwhile, Peter K. Smith, MD, of Duke University Health System in Durham, N.C., who is Chair of the STS Workforce on Coding and Reimbursement, will discuss the role of the STS National Database in reimbursement for cardiothoracic surgeons, while Dr.

Shahian will address the past, present, and future of quality measurement.

A key aspect of the session will center on transparency in public reporting. Currently, Database participants have the opportunity to publicly report outcomes for coronary artery bypass grafting (CABG) surgery, aortic valve replacement (AVR), combined AVR + CABG, and pediatric and congenital cardiac surgical risk-adjusted operative mortality. In 2016, public reporting also will be available for lobectomy, mitral valve surgery, and combined CABG + mitral valve surgery.

“At STS, we are advocates of transparency,” said session moderator Jeffrey P. Jacobs, MD, Chair of the STS Task Force on Public Reporting and Director of the Andrews/Daicoff Cardiovascular

Program at the Johns Hopkins All Children’s Heart Institute in St. Petersburg, Fla. “We believe that everybody has the right to know the number of cardiac and thoracic operations that a hospital performs, as well as the success of these vital operations.”

The session will describe the multiple ways that STS National Database data can be utilized, including the rationale for public reporting of cardiothoracic surgical outcomes.

“This new session at the STS Annual Meeting serves to coalesce the efforts of STS members, surgeon investigators, and STS Workforce efforts around a quality imperative that may reshape how we practice cardiothoracic surgery,” concluded Dr. Badhwar.

**Evidence and Quality Reshaping Practice**  
MONDAY, 1:15 p.m. – 5:15 p.m.  
Room 29AB

## Join the Conversation Online!

Like the STS Facebook page at [www.facebook.com/societyofthoracicsurgeons](http://www.facebook.com/societyofthoracicsurgeons) and follow STS on Twitter at

@STS\_CTSurgery for information about San Diego and the Annual Meeting. If you tweet about the Annual Meeting, be sure to use the hashtag #STS2015.

After the Annual Meeting is over, the STS Facebook

and Twitter pages will continue to deliver news on future STS events and CME credit opportunities.

twitter



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**9:40 a.m. – 9:50 a.m.**

Introduction of the President: Mark S. Allen  
Ballroom 20ABC

**9:50 a.m. – 10:50 a.m.**

Presidential Address: David A. Fullerton  
Ballroom 20ABC

**11:30 a.m. – 12:30 p.m.**

Adult Cardiac Session: Arrhythmia  
Room 31ABC

Adult Cardiac Session: Heart Failure  
Room 33ABC

Basic Science Research: Adult Cardiac  
Room 30E

Basic Science Research: General Thoracic  
Room 29D

Congenital Session: Adult Congenital  
Room 30AB

Critical Care  
Room 30CD

General Thoracic Session: New Techniques  
Ballroom 20D

STS/CATS/CSGS: Current and Future  
Workforce Issues in Cardiothoracic Surgery —  
Staff and Resident Perspectives From Canada  
and the US

Room 32AB

**1:15 p.m. – 5:15 p.m.**

ACC @ STS

Room 33ABC

Evidence and Quality Reshaping Practice  
Room 29AB

**1:30 p.m. – 3:30 p.m.**

Adult Cardiac Session: Aortic  
Room 31ABC

Adult Cardiac Session: Ischemic  
Room 32AB

Congenital Session: Pediatric Congenital I  
Room 30CD

General Thoracic Session: Lung Cancer I  
Ballroom 20D

General Thoracic Session: Lung Transplantation  
Room 29D

Managing Cardiogenic Shock or Pulmonary  
Failure: Short-Term Mechanical Circulatory  
Support

Room 30E

STS/SCA: Considerations in Perioperative  
Resuscitation of Cardiothoracic Patients

Room 30AB

**4:15 p.m. – 5:15 p.m.**

Surgical Motion Picture Matinee: Adult Cardiac  
Ballroom 20D

Surgical Motion Picture Matinee: Congenital  
Room 32AB

Surgical Motion Picture Matinee: General  
Thoracic

Room 31ABC

Late-Breaking Abstract Session: Adult Cardiac  
Room 30CD

**5:00 p.m. – 6:30 p.m.**

Scientific Posters and Wine  
Ballroom 20D Foyer

**5:30 p.m. – 6:30 p.m.**

Business Meeting (STS Members Only)  
Ballroom 20D

**6:45 p.m. – 7:45 p.m.**

STS-PAC Reception  
San Diego Marriott Marquis

**7:00 p.m. – 10:00 p.m.**

STS Social Event  
USS Midway Aircraft Carrier Museum

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# Chamberlain Papers

Continued from page 1

2012. The GTSD collected data on 1,595 operations, while the NSQIP captured data on 308 operations based on its algorithm.

“There were some pretty big differences,” Dr. Allen said. “There were postoperative complications in 17% of the NSQIP operations and 30% of the GTSD operations.”

Overall operative mortality was the same across all operations in both databases – about 1.6% in each. “But the results change if you drill down into specific operations,” Dr. Allen said.

“One example is removal of the esophagus using the Ivor Lewis procedure. The operative mortality rate from the NSQIP was 9.5%, whereas the GTSD showed it was only 2.9% – quite a big difference.”

Other differences between databases were that NSQIP underestimated the pneumonia rate for a lobectomy compared to the GTSD (5.9% versus 10.9%) and overestimated pneumonia for an Ivor Lewis esophagogastrectomy (23.8% versus 18.8%).

When the Mayo Clinic’s NSQIP data were compared to NSQIP national norms, the institution was ranked in the lowest 8th decile for 30-day operative mortality, but when using the GTSD national norms, the institute performed better than average. “Conversely, we had some data from the partial database that said we were doing really well, when in reality we weren’t doing well, so we would miss an area that we should work on to improve,” Dr. Allen explained.

“I think we just need to have caution when we use the results of these databases that collect partial data,” Dr. Allen concluded.

## Adult Cardiac

Long-term follow-up shows that

bilateral internal mammary artery (BIMA) grafting results in improved survival compared to single IMA (SIMA) grafting in patients at any age or even with factors such as diabetes, according to a study from Paul Kurlansky, MD and colleagues.

Dr. Kurlansky, an Assistant Professor of Surgery at Columbia University in New York, will present the Chamberlain Paper for Adult Cardiac Surgery, “Over 3 Decades of Follow-Up Demonstrates Improved Survival with Bilateral vs Single Internal Mammary Artery Grafting in Elderly Patients.”

The researchers performed a retrospective analysis of 4,503 consecutive isolated coronary artery bypass grafting operations performed between 1972 and 1994 at the Miami Heart Institute.

The team created propensity score-matched groups of SIMA (n=1,063) and BIMA (n=1,063) patients 65 years old and older, and 70 years old and older (n=612 BIMA and SIMA patients), with similar baseline characteristics.

They found survival benefits for

BIMA versus SIMA grafting across both age categories. Ten-year survival for BIMA grafting was 60.1% versus 50.2% for SIMA patients. Twenty-year survival for BIMA grafting was 12.0% versus 10.3% for SIMA grafting, a significant difference. Overall survival also was significantly enhanced with BIMA grafting in matched groups of patients aged 70 and older.

“Advanced age should not be considered a barrier to providing your patient with BIMA grafting,” Dr. Kurlansky said. “Long-term follow-up clearly demonstrates that BIMA grafting, when broadly applied in elderly patients, results in improved long-term survival.”

A 65-year-old in the United States lives another 19 years on average and a 70-year-old may live another 15 years, “so the rationale for BIMA grafting is solid, even in these elderly patients,” he said. At Columbia, BIMA grafting is done in the majority of eligible patients.

Historically, Dr. Kurlansky said, some surgeons have been reluctant to do BIMA grafting in diabetics (because of the risk of sternal wound

infection), women, or those with low ejection fraction. But data show that BIMA improves survival rates even in these patient populations, he said.

## Congenital Heart

A data visualization tool that tracks and compares cardiac surgical site infection (SSI) rates within an electronic health record (EHR), coupled with workflow changes, can significantly reduce cardiac SSI rates, according to the Chamberlain Paper for Congenital Heart Surgery.

Vaidehi Nayar, MPH, a Clinical Data Analyst at the Children’s Hospital of Philadelphia’s (CHOP’s) Office of Clinical Quality Improvement, will present “Improving Cardiac Surgical Site Infection Diagnosis, Adjudication, and Reporting by Using Registry Data for Case Ascertainment.”

“Linking registry and infection control surveillance data with the EHR improves SSI surveillance,” she said. “The visualization tool we created, along with workflow changes, improved communication, facilitated adjudication of SSIs, and allowed us to assess the impact of quality improvement initiatives to prevent SSIs at CHOP.”

Prior to this work, the hospital had received a warning letter from the Department of Health stating that its SSI rates were outside the normal range, but surgeons knew that didn’t make sense, said study coauthor J. William Gaynor, MD, a cardiothoracic surgeon at CHOP.

At CHOP, SSI data is collected and reported by three methods: the National Healthcare Safety Network (NHSN) database with reporting to the Centers for Disease

Control and Prevention; the hospital billing database with reporting to payers; and The Society of Thoracic Surgeons Congenital Heart Surgery Database (CHSD). A previous study reported by CHOP researchers found that administrative data alone for SSI detection results in inaccurate reporting of SSI rates.

Nayar and her colleagues built a visual tool using QlikView that utilized the CHSD for case ascertainment, resolved discrepancies among CHSD data, infection surveillance data, and billing of SSI cases, and accurately assessed the impact of QI initiatives.

The staff also instituted some workflow changes. Now, when the potential for an SSI is documented, an alert is fired to staff. Surgeons, nurses, and infection prevention

staff conduct bedside reviews of affected patients to agree on a diagnosis and standardize documentation. Hospital billing representatives also have been educated about SSI chart documentation for more accurate billing.

Over a 47-month study period, researchers identified 156 SSIs through

the CHSD, 79 SSIs through the infection surveillance database, and 433 SSIs through billing. The rolling 12-month SSI rate based on the CHSD decreased from 2.48% (21 of 848 patients in January 2013) to 0.76% (11 of 1,442 patients in January 2014), and workflow changes narrowed the variation among the three SSI rates.

“We were ecstatic, and we have been getting calls from other groups looking to implement similar programs,” said Dr. Gaynor.



VAIDEHI NAYAR, MPH



PAUL KURLANSKY, MD

## Attention STS Members!

Please plan to attend tonight’s Business Meeting.

MONDAY, 5:30 p.m. – 6:30 p.m.  
Ballroom 20D  
STS Members Only

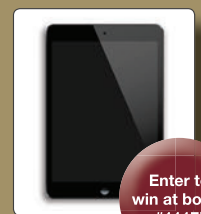


## You could win an iPad mini!

In celebration of the 5th anniversary of STS public reporting, surgeons are invited to visit booth #1117 to learn about the Society’s adult cardiac, general thoracic, and congenital heart surgery initiatives.

While there, enter to win one of two iPad minis!

The prize drawing\* will take place Tuesday, January 27, at 12:00 p.m.  
\*Winner does not need to be present to win.



Enter to win at booth #1117!

### J. Maxwell Chamberlain Papers

MONDAY, 7:15 a.m. - 8:15 a.m.  
Ballroom 20ABC

# The Annals Commemorates 50 Years

This year, *The Annals of Thoracic Surgery* will celebrate 50 years of publishing important, ground-breaking scientific research in cardiothoracic surgery.

The first 96-page issue of *The Annals* was published in January 1965. Over the years, *The Annals* underwent many changes, such as moving from bimonthly to monthly publication, incorporating CME exercises, adding clinical practice guidelines, and expanding its online offerings. The journal also broadened its international reach – by 2013, 70% of all submissions originated outside of North America.

*The Annals* will publish a number of special articles throughout 2015 to commemorate this momentous occasion. The January 2015 issue

features an article on the four Editors who have manned the helm: John D. Steele, MD, Herbert E. Sloan, MD, Thomas B. Ferguson, MD, and L. Henry Edmunds Jr., MD. And starting with the February 2015 issue, invited commentators will discuss important papers published in 1965, as well as landmark articles from the entire 50 years of *The Annals*.

Editor-Elect G. Alexander Patterson, MD will give a presentation regarding the history of *The Annals* during the Monday morning General Session at 9:30 a.m. in Ballroom 20ABC. Also, make sure to stop by the special 50th anniversary display in the Exhibit Hall to learn more about *The Annals'* storied past.



## Attend the STS Social Event Tonight

Join us aboard a piece of American history – the USS Midway – for an evening of dancing, food, and cocktails. The 2015 STS Social Event will be held tonight from 7:00 p.m. to 10:00 p.m.

It will be a night to remember as the evening ends with a breathtaking fireworks show over the bay. Purchase your ticket now at Registration on the main level of the convention center.



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# Clark Papers Showcase the STS National Database

The high-quality research made possible by the STS National Database will be featured this morning in three papers named in honor of Dr. Richard E. Clark, who is recognized as a key force in helping the Database become a reality. The Database has three components – Adult Cardiac, General Thoracic, and Congenital Heart Surgery.

## General Thoracic

STS has developed a new quality composite measure to reliably compare programs performing lobectomy for lung cancer.

This lobectomy composite measure is the first STS general thoracic quality measure and will be used by STS National Database participants to improve the quality of care they provide. In addition, it provides the general thoracic community with a platform for public reporting on the STS website.

Voluntary public reporting will begin in 2016, and the information will be available to patients, payers, and other stakeholders, according to Benjamin D. Kozower, MD, MPH, of the University of Virginia Health System in Charlottesville, and his colleagues.

Dr. Kozower will describe this composite score in the Clark Paper for General Thoracic Surgery,

“The Society of Thoracic Surgeons Composite Score for Lobectomy for Lung Cancer: The First Thoracic Quality Measure for Public Reporting.”

“This measure is based on 30-day outcomes of mortality and major complications. We are able to reliably differentiate 4% of programs as poor performers (1-star) and 5% as high performers (3-star). The majority of programs (91%) perform at the expected level, which is quite good with an overall mortality of 1.5% and major complication rate of 9.6%. The STS National Database will begin collecting long-term survival data in 2015 so future quality measures may be able to incorporate these important outcomes,” Dr. Kozower said.

In order to develop the composite

score, General Thoracic Surgery Database (GTSD) data were included from 2010 to 2012 to provide an

adequate sample size for hospital profiling. “Star ratings” were developed using 95% Bayesian credible intervals. Furthermore, to help validate the scoring, GTSD participants were compared to national benchmarks using the Nationwide Inpatient Sample. In addition to the composite score, comparisons of discharge mortality,

length of stay, and the percentage of stage I lung cancers resected using a minimally invasive approach (none of which are included in the star ratings) will be displayed on the STS Public Reporting website.

The study population included more than 19,000 lobectomy patients from 207 participants. Overall in-hospital or 30-day mortality was 1.4%, major morbidity was 10.0%, and median postoperative length of stay was 5 days. Using 3 years of rolling data and 95% credible intervals, adjusted mortality and morbidity rates varied threefold from highest-performing (3 star) to lowest-performing (1 star) programs, the researchers found. The concordance probability, an estimation of the reliability of the composite measure, was 0.72, with a 95% CI = 0.69-0.75.

“Lobectomy is the most common procedure performed by thoracic surgeons. This analysis facilitates the accurate and reliable comparison of participating programs. It is very timely because STS is leading the way for publically reported quality measures using accurate, risk-adjusted, clinical data,” Dr. Kozower concluded.

## Adult Cardiac

In what was described as the largest series to date examining alternative access transcatheter aortic valve replacement (TAVR), high-risk patients were seen to have a lower stroke rate with transapical (TA) TAVR than with transaortic (TAo) TAVR.

However, mortality between the two approaches was similar in high-risk patients, according to Vinod H. Thourani, MD, who will present the Clark Paper for Adult Cardiac Surgery, “Comparison of Alternative Access Transcatheter Aortic Valve Replacement Techniques in the US for 6,341 Patients Considered High-Risk or Inoperative for Aortic Valve Replacement and With Severe Aortic Stenosis: An Analysis From the STS/ACC TVT Registry™.”

Dr. Thourani, of Emory University in Atlanta, and his colleagues used the TVT Registry to analyze results from patients with severe aortic stenosis who were considered high-risk or inoperative for aortic valve replacement.

Typically, TAVR in high-risk/inoperative patients is performed using transfemoral access, but this is not always possible due to anatomical or other patient-related considerations. In such cases, TA or TAo access has been used, but the outcomes of patients using these alternative access sites in conjunction with the commercially available balloon-expandable valve have not been reported in the United States, the researchers pointed out.

Dr. Thourani and his colleagues performed their database analysis to compare the US experience with TA and TAo TAVR.

They retrospectively examined the results of 18,100 patients who underwent TAVR as reported in the TVT Registry from November 2011 to June 2014 in 306 sites. Alternative access TAVR represented 7,384 (41%) of all procedures during the study period. Of the 7,384 alternative access procedures, 6,108 (83%) were performed with

TA access and 1,276 (17%) with TAo access. The mean age of all patients was 81.7 years (TA: 81.6 years and TAo: 82.3 years) and 57.7% of patients were women (TA: 55.9% and TAo: 66.4%).

Dr. Thourani will discuss how, in terms of outcomes, the postoperative stroke rate was 2.3% in all patients (TA: 2.1% versus TAo: 3.1%, a significant difference). Overall in-hospital mortality was 7.1%, with no significant difference between TA (6.9%) and TAo (8.2%) access. In high-risk patients, there was a significantly higher stroke rate in the TAo group



BENJAMIN D. KOZOWER, MD, MPH



VINOD H. THOURANI, MD



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(3.1% versus 2.3%), but this was not apparent in the inoperative group (TA: 2.5% versus TAO: 2.8%). STS PROM O:E mortality in the high-risk patients was not significantly different for TA and TAO.

However, for the inoperative patients, the TAO patients had a nonsignificant trend toward higher mortality. One-year all-cause mortality was significantly higher in TAO patients (34.4% versus 26.0%).

“Unlike a randomized trial, this is a real-world experience with registry data. Every patient was required to be evaluated by two cardiac surgeons and one cardiologist, a true ‘heart-valve team,’ and they determined whether a patient was inoperative or not,” Dr. Thourani said.

“In this one-of-a-kind analysis, following alternative access patients for up to a year, we found that in high-risk patients, the results are relatively similar between the use of transapical and transaortic valves. However, we are finding that, in patients who are inoperative, as determined by the heart team, transapical may have a slight edge in early and mid-term results,” he added.

“We should not expect to see ‘inoperative creep’ in these patients, as they were evaluated by both surgeons and cardiologists, as mandated by CMS and FDA. We believe strongly that a heart valve team determination is the most beneficial for categorization of these patients to be treated in the most collaborative and multidisciplinary manner,” concluded Dr. Thourani.

**Congenital Heart**

Characteristics of patients undergoing congenital heart surgery vary across hospitals, and methods that do not take these characteristics

into account can lead to inaccurate assessment of outcomes and performance, according to Sara K. Pasquali, MD, MHS, who will present the Clark Paper for Congenital Heart Surgery, “Characteristics of Patients Undergoing Congenital Heart Surgery Vary Across US Children’s Hospitals and Impact Assessment of Hospital Performance: An Analysis of The Society of Thoracic Surgeons Congenital Heart Surgery Database.”

**We found that in high-risk patients, the results are relatively similar between the use of transapical and transaortic valves.**

“Accurate outcomes measures are important to a variety of stakeholders and initiatives aiming to improve quality of care. These include quality improvement

initiatives, public reporting programs, and federal health care initiatives such as ‘pay-for-performance,’ among others,” said Dr. Pasquali, an Associate Professor of Pediatrics and Co-Director of the Michigan Congenital Heart Outcomes Research and Discovery (M-CHORD) Program at C.S. Mott Children’s Hospital in Ann Arbor.

“In the field of congenital heart surgery, it has long been recognized that adjustment for differences in operative case-mix across hospitals is critical to accurate outcomes assessment,” said Dr. Pasquali.

“However, characteristics patients bring into the operation that may also have an important impact on

outcomes have received less attention. These include factors such as prematurity, weight at surgery, and the presence of non-cardiac anomalies or genetic syndromes.” The researchers noted that the extent to which these factors vary across hospitals or impact the assessment of hospital-level outcomes has not been investigated to date. Thus, the importance of incorporating these variables in hospital outcomes assessment has been unclear.

Dr. Pasquali and her colleagues evaluated 52,224 patients from 86 centers participating in the STS Congenital Heart Surgery Database from 2010 to 2013.

The research team evaluated variation across hospitals in important patient characteristics and assessed operative mortality rates across hospitals, with and without adjustment for patient characteristics in the statistical models.

The investigators found that there was more than twofold variation across hospitals in nearly all patient characteristics examined. For example, the proportion of a center’s surgical population comprised of neonates ranged from 12.8% to 26.6% across hospitals, and the proportion of patients with any type of non-cardiac anomaly ranged from 0.7% to 5.0%.

When the researchers evaluated hospital mortality rankings based on

“standard” models that adjusted for differences in operative case-mix alone versus “full” models that adjusted for both differences in operative case-mix and patient characteristics, they found that 30% of centers changed their ranking for mortality by 10 or more positions (12% with change of

20 or more positions). In addition, 36% of centers changed which mortality quartile they were classified in, and 14% of centers changed their classification as statistical outliers.

“This study demonstrates the importance of adjustment for patient characteristics in assessment of congenital heart surgery outcomes,”



SARA K. PASQUALI, MD, MHS

said Dr. Pasquali.

“Our results suggest that federal agencies and organizations evaluating and comparing congenital heart surgery outcomes should incorporate key patient characteristics in addition to adjustment for operative case-mix. Our results also support the inclusion of these characteristics into updated models used in outcomes reporting for centers participating in the Congenital Heart Surgery Database,” Dr. Pasquali concluded.

**Richard E. Clark Papers**  
MONDAY, 8:15 a.m. – 9:00 a.m.  
Ballroom 20ABC

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You can also scan the QR code with your smartphone.



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ISO 13485:2003

# Surgical Motion Picture Matinees – Now Playing!

Video presentations of selected cases in adult, general thoracic, and congenital heart surgery will enlighten and instruct their audiences with tips and tricks for performing highly complex and innovative operations. The following highlighted cases demonstrate “How-I-do-it” across a complex gamut of patient anatomy and comorbidities.

## Adult Cardiac

Endovascular repair of an ascending aortic pseudoaneurysm is possible via a transapical approach, according to Fenton McCarthy, MD, of the Hospital of the University of Pennsylvania, Philadelphia, and his colleagues.

“The anatomy and pathology of the ascending aorta can be challenging to intervene on, particularly from an endovascular platform,” said Dr. McCarthy. “However, through prior TEVAR experience, cardiovascular surgeons have learned that endovascular interventions can both augment traditional operations as well as sometimes be the only viable option available for certain patients.” The patient to be presented in the video is a 54-year-old man who had a previous heart-lung transplant who then presented with a

pseudoaneurysm at the anastomosis of the donor heart and recipient aorta. The patient required a combined heart-lung transplantation, which was complicated by ventilator-dependent respiratory failure requiring tracheostomy and a sternal wound infection.

Utilizing the hybrid OR and under fluoroscopic guidance, a left-mini thoracotomy was performed to access the apex of the left ventricle. Then, a Cook Zenith TX2 thoracic endoprosthesis was deployed in the ascending aorta. A second endoprosthesis was required to finally seal a Type 1 endoleak before achieving a successful repair.

There is still a significant need for the development of devices specifically designed for the

ascending aorta and possible transapical delivery, added Dr. McCarthy. “TEVAR of the ascending aorta has been performed in a limited number of cases globally, but with growing experience of cardiovascular surgeons with TEVAR, TAVR, and other endovascular options, as well as devices specific

for the ascending aorta, ascending aortic TEVAR is a promising field for future development in cardiovascular surgery,” he concluded.

Among the other adult cardiac videos to be featured will be presentations on mitral valvuloplasty, double valve endocarditis, and pseudoaneurysm repair.

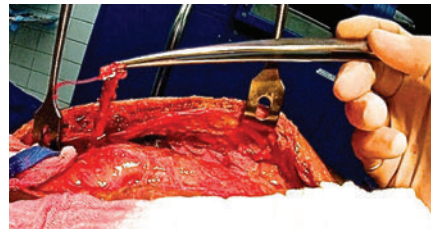
## General Thoracic

Simulation with a pressurized cadaver model provides high fidelity for essential cardiothoracic procedures.

“We believe use of the pressurized cadaver model can increase patient safety and provide better learning environments for residents. Deliberate practice and surgical simulation has become a key component in readying residents for safe and independent practice,” said Christina L. Greene, MD, of the LAC-USC Medical Center.

Dr. Greene will give a video presentation demonstrating the value of using the pressurized cadaver model developed by her and her colleagues to learn cardiothoracic surgical procedures, focusing specifically on internal mammary artery (IMA) takedown.

There are four steps to pressurizing



COURTESY DR. GREENE

a cadaver, according to Dr. Greene. The common femoral artery is exposed using a standard technique and sized for cannulation. The cadaver is lavaged with water, repeated as necessary, until all clots are removed from the arterial system. The lines are attached to the centrifugal pump, and the flow is titrated to maintain the desired arterial pressure.

Once the cadaver is pressurized, operations, such as median sternotomy and IMA takedown, can be simulated. Pressurized flow from bleeding vessels enhances the realism of this simulation modality.

“The fluid used is a red or blue liquid made by dyeing tap water with food coloring. This ‘perfusate’ is then pumped into the arterial and venous system of the cadaver to create pressure and flow through the vessels,” Dr. Greene described.

Although fresh tissue dissection is recognized as the gold standard for surgical simulation, the lack of circulating blood volume limits surgical realism.

“In the pressurized cadaver model, the fresh tissue offers enhanced surgical realism and the pressurized perfusate mimics real life pressure and flow seen within the vascular space. The tissue is much closer to what a resident will encounter in the OR, and the ability to simulate surgical bleeding provides instantaneous feedback to the learner. In sum, if you operate without blood or perfusion, everyone is an expert!” Dr. Greene concluded.

Other video presentations in the general thoracic session will include minimally invasive pectus excavatus repair, treatment of pneumothorax, and endoscopic thymectomy.

## Congenital Heart

Robotically assisted minimally invasive repair strategies can be safely employed for repair of carefully selected adult congenital patients. This is the first reported case in the English literature of a partial atrioventricular (AV) canal defect repair with concomitant Maze procedure performed using robotic assistance via a left atrial approach, according to Kaushik

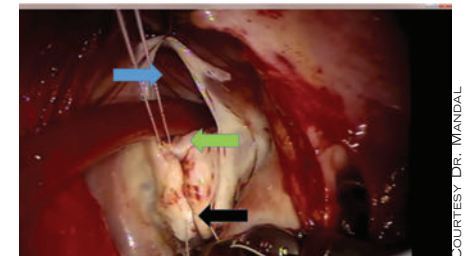
Mandal, MD, of the Johns Hopkins University School of Medicine, and his colleagues.

Dr. Mandal will narrate a video presentation of an adult congenital patient who underwent robotically assisted partial atrioventricular canal defect repair and Maze procedure via left atrial approach.

“The advantage of using robotics in this case was apparent because of the superior magnified 3-dimensional optics and the ergonomic tremor-free instrument control. This allowed perfect control within the left atrium, especially when trying to avoid the right-sided conduction system and repairing both atrio-ventricular valves,” said Dr. Mandal.

The patient was a 43-year-old woman. A transesophageal echocardiogram of the patient showed dilated right and left atria, a 2.7-cm defect at the lower interatrial septum, a shunt fraction of 2:1, severe left AV valve insufficiency, and moderate right AV valve insufficiency with accompanying clefts in both of them. There was no ventricular septal defect. The ejection fraction was 55% with preserved left ventricular and right ventricular function.

The patient had a successful repair of the partial AV canal defect, was



COURTESY DR. MANDAL

restored to sinus rhythm, and was discharged on postoperative day 4. She had resumed full normal activities by the third postoperative week, demonstrating the utility of the procedure.

“Technology, surgical team expertise, and experience worked in perfect synergy to ensure an excellent outcome. It is crucial for patients considering robotically assisted minimally invasive repairs to seek out surgical programs led by experienced surgeons with strong emphasis on quality and safety,” Dr. Mandal concluded.

## Remembering Michael J. Davidson

If you would like to express your condolences to the family of Michael J. Davidson, MD, the Society will be collecting cards, notes, and other remembrances at the STS Booth (#1111). In lieu of flowers, contributions can be made to:

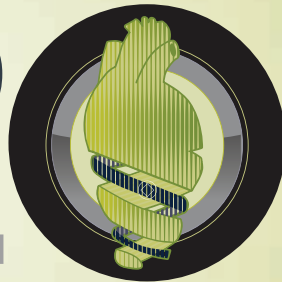
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Online contributions can be made at [www.rtn.org/davidsonfund](http://www.rtn.org/davidsonfund).

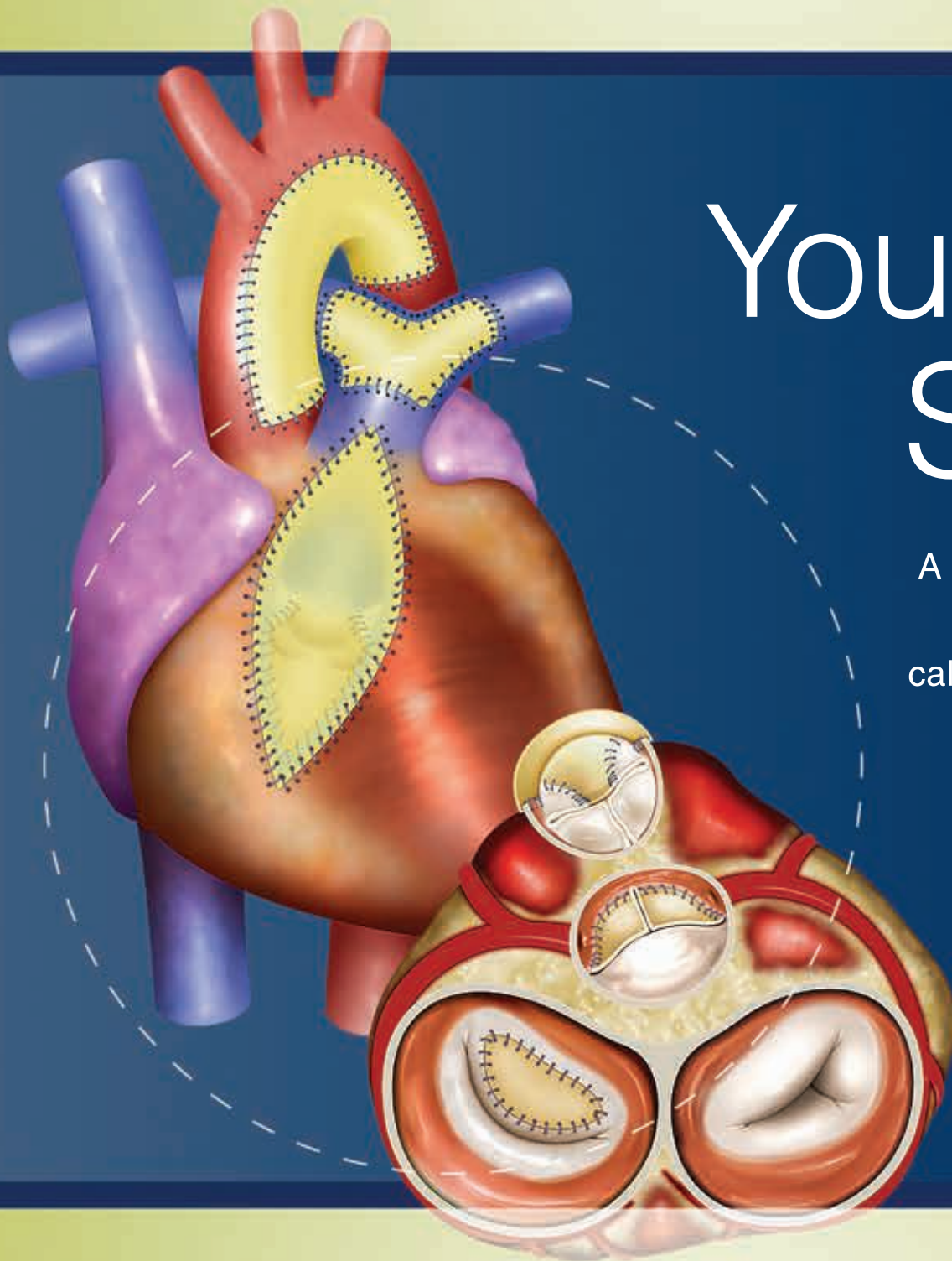
## Surgical Motion Picture Matinees

MONDAY, 4:15 p.m. – 5:15 p.m.  
Adult Cardiac Ballroom 20D  
General Thoracic Room 31ABC  
Congenital Heart Room 32AB

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# Workforce Issues in US, Canada Explored in New Session

The future of the cardiothoracic surgery workforce is a concern in both the United States and Canada, and on Monday, a panel of experts will come together to share experiences and perspectives on this topic from two North American countries.

In keeping with an important theme at the STS 51st Annual Meeting – collaboration with other specialty societies – the session, “Current and Future Workforce Issues in Cardiothoracic Surgery – Staff and Resident Perspectives From Canada and the US,” is offered by STS, the Canadian Association of Thoracic Surgeons, and the Canadian Society of Cardiac Surgeons.

“Workforce planning is a very important topic on both sides of the border and is of particular interest to trainees because of the current environment in getting a job once they have completed their training” said Sean C. Grondin, MD, MPH, of Calgary, Canada, who will co-moderate the session along with

John S. Ikonomidis, MD, PhD, of Charleston, S.C.

Dr. Grondin said that differences in certification and training of cardiothoracic surgeons in North America will be highlighted, as will efforts and research under way to



SEAN C. GRONDIN, MD, MPH



JOHN S. IKONOMIDIS, MD, PHD

address workforce planning.

“A key component of the session will be residents presenting their perspectives on the current and future workforce demands,” he said. “We have really great people presenting at this session.”

The session is important because

it will examine practice and training paradigms, including what they have become and where they are headed, Dr. Ikonomidis added.

“The timeliness of this lies in allowing residents and staff surgeons to see the directions that the specialty is taking. We will have opportunities to learn from experiences with the various approaches and results from both countries,” he said.

Dr. Grondin will begin the session by highlighting the differences in training for cardiothoracic surgeons in Canada and the United States and will then share his perspective on general thoracic surgery workforce issues in

Canada. Janet P. Edwards, MD, a thoracic surgery resident at the University of Calgary, will present the resident perspective on workforce issues, highlighting novel work she has done in workforce modeling.

Similarly, cardiac surgeon Christopher M. Feindel, MD, of Toronto, and one of his former residents, Maral Ouzounian, MD, of Halifax, will give the staff and resident perspectives, respectively, on cardiac surgery workforce planning in Canada.

Dr. Grondin indicated that in Canada, training for heart and lung surgeons is conducted separately, whereas in the United States, training for the two is often provided together. Thus, the US perspectives on cardiac and thoracic surgery workforce issues will be combined.

Cardiothoracic surgeon Richard J. Shemin, MD, of Los Angeles, who has significant experience with STS workforce surveys, and David Odell, MD, of Pittsburgh, a Past President of the Thoracic Surgery Residents

Association, will present the staff and resident perspectives from the United States, respectively.

“The main objective of the session is to stimulate discussion on how best to tackle workforce planning issues so that we train the correct number of residents. Residents go through many years of training, and we want to make sure trainees have good employment options when they finish their education,” Dr. Grondin said, adding that the speakers will forecast workforce expectations for the next 2 decades and will explore factors that are likely to influence workforce supply and demand.

Session attendees can also expect to hear about how new therapies and techniques, such as minimally invasive cardiac surgery, computed tomography screening programs, and stereotactic body radiation therapy, may impact future cardiothoracic surgery workforce demands.

The session will likely influence decisions regarding the adoption of new training paradigms and fellowship training choices, Dr. Ikonomidis said.

“It is critical that trainees and surgeons understand the current trends in CT surgery so that they can plan future career and staffing choices,” he added.

“I would encourage any cardiothoracic surgeon, program director, or resident who has an interest in knowing more about the current status of the cardiothoracic workforce in the United States and Canada to attend,” Dr. Grondin said.

**STS/CATS/CSCS: Current and Future Workforce Issues in Cardiothoracic Surgery – Staff and Resident Perspectives From Canada and the US**  
MONDAY, 11:30 a.m. – 12:30 p.m.  
Room 32AB



Looking for a new opportunity?

**Visit the 2015 STS/CTSNet Career Fair in the 200 aisle of the Exhibit Hall!**

Monday, January 26 9:00 a.m. – 4:30 p.m.

Tuesday, January 27 9:00 a.m. – 3:00 p.m.

[www.sts.org/careerfair](http://www.sts.org/careerfair)



The Society of Thoracic Surgeons



## Attend Industry Satellite Activities

Satellite activities are programs offered by industry and held in conjunction with the STS 51st Annual Meeting. They are not developed or sponsored by STS.

### Tuesday, January 27

ConvaTec  
Advances in Cardiothoracic Surgery

6:00 a.m. – 7:15 a.m.

Manchester Grand Hyatt San Diego – Harbor Ballroom AB

### JOMDD/Admedus

Wet Lab Training: Aortic Valve Reconstruction Using CardioCell, Directed by Dr. Ozaki

6:30 p.m. – 10:00 p.m.

Manchester Grand Hyatt San Diego – Cityview AB

# Late-Breaking Abstract: Novel Device Successful for Branched Endovascular Treatment of the Distal Aortic Arch

Total endovascular repair of distal arch aortic aneurysms can be safely achieved with a novel branched arch endograft, according to the results of a late-breaking clinical feasibility trial that is set to be presented on Monday afternoon.

“The study describes a new stent graft that can treat an aortic aneurysm in a more complete endovascular manner,” explained lead author Himanshu J. Patel, MD, of the University of Michigan, Ann Arbor.

“We examined the feasibility of this particular device, which allows us to do the entire procedure with an endovascular approach using a small groin incision, to treat pathology that involves the very last part of the arch aorta and the descending aorta.”

The endograft tested by Dr. Patel

and his coinvestigators features a single side branch to “facilitate aortic coverage proximal to the left subclavian artery, while maintaining patency of this branch vessel.”

Coauthor Joseph E. Bavaria, MD, of the University of Pennsylvania, Philadelphia, stated that the device is not just revolutionary for cardiothoracic surgeons, but also has “major implications” for patients because it “eliminates an open procedure – the carotid-subclavian bypass, when we have

to complete a zone 2 arch landing in thoracic endovascular aortic repair of the descending aorta in both aneurysm and dissection.”

The multicenter trial enrolled 10 patients undergoing branched thoracic endovascular aortic repair (B-TEVAR) in Ishimaru zone 2. Four patients

(40%) were male and the average age was 75.2 years  $\pm$  10.0 years.

Subjects who were treated with the new clinical device had pathologies of fusiform (six patients, 60%) and saccular (four patients, 40%) aneurysms, with an average aortic diameter of 5.6 cm  $\pm$  1.8 cm and average preoperative ankle-left brachial index (ABI) of 1.0  $\pm$  0.1.

The primary outcome of device delivery and branch vessel patency was achieved in all 10 trial subjects, with no 30-day mortality, stroke, or spinal cord ischemia.

However, endoleaks were reported – two of type I, two of type II, and one of type III variety – with one of the type II endoleaks resolved at 6 months and the other type II endoleak persisting at 6 months without concomitant sac enlargement.

The average total treatment length with the endograft was 20.2 cm  $\pm$  10.0 cm, with three patients (30%) treated with a single 10-cm graft for isolated arch pathology.

Average hospital stay was 5.7 days  $\pm$  3.7 days. Average ABI for nine patients (90%) at 1 month was 1.1  $\pm$  0.1, and all side branches remain patent at last follow-up.

Having conducted the first in-human feasibility trial for this new endograft, Dr. Patel is hopeful that further studies can soon get under way to learn more about what this new clinical device can accomplish.

“This is basically a first description using this device in treating aortic aneurysms involving this particular location,” Dr. Patel said.

“I think the next step will be to determine whether this treatment will be safe and effective in aneurysms that extend a little closer to the heart within the aorta, and the next extension would be development of a newer device with which we could treat the entire arch aorta with a pure endovascular graft.”



HIMANSHU J. PATEL, MD



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### Late-Breaking Abstract Session

MONDAY, 4:15 p.m. – 5:15 p.m.

Room 30CD

# Attend Live Technology Demos at the TECHbar

An exciting new amenity at the 2015 Annual Meeting is the TECHbar, which is located in the Exhibit Hall. Stop by for answers to all of your technical questions — three experts can help you with both personal and professional tasks, such as downloading and using the STS Annual Meeting Mobile App, troubleshooting issues with your smartphone or tablet, and more. You can also attend these free educational sessions on various technology topics of interest:

## Posters & Wine Session Tonight

Join your colleagues for this moderated review of select scientific posters in adult cardiac, general thoracic, and congenital heart surgery — and enjoy a glass of wine while you peruse the posters! The event will be held from 5:00 p.m. to 6:30 p.m. in the Foyer outside Ballroom 20D. You can review the full listing of scientific poster abstracts in your *Abstract Book*.

### Monday, January 26

11:00 a.m. – 11:30 a.m.

#### Top 10 Apps-on-the-Go: Apps that Help When You are OOO (Out-of-Office)

How many days are you out of the office, yet you still need to function as if you are there? TECHbar experts will show you apps that help with everything from productivity to travel.

12:40 p.m. – 1:10 p.m.

#### Data Security

Data security is in the forefront because of recent high-profile security breaches — but how much do you know about it? TECHbar experts will share some essential guidelines that you should follow to better ensure that your data are secure.

3:30 p.m. – 4:00 p.m.

#### Learn to Tweet

Want to share your thoughts and links with the world? Get on Twitter. The TECHbar team will get you set up and Tweeting in minutes. (Hands-on tutorial with your device.)

### Tuesday, January 27

10:15 a.m. – 10:45 a.m.

#### Tech and Solutions: Note Taking

#### and Data Capturing – Speech and Handwriting Recognition

Are you still taking notes by hand with pen and paper? TECHbar experts will help you change that. They'll share some options for note taking on your mobile devices with speech and handwriting recognition features.

12:00 p.m. – 12:30 p.m.

#### Productivity Apps for Teams and Office Environment

Apps don't always mean fun and games. Many apps can help transform

you and your team's productivity. TECHbar experts will provide an overview of these apps and how they can help you and your team.

12:30 p.m. – 1:00 p.m.

#### Presentations for Education – Tools and Techniques

Ensure that your audience is engaged and taking away the knowledge they need. TECHbar experts will share presentation tools and techniques that will help enhance your next educational talk.

## Looking to the Future



LTFF scholarship recipients learned about cardiothoracic surgery careers while experiencing the interactive learning at the Annual Meeting.

# Learn the Ins and Outs of Charitable Surgical Missions

STS Annual Meeting attendees who want to make a difference in the lives of patients around the world can learn how to put that goal into action at “Early Riser Session 10: Charitable Surgical Missions – How to Set Them Up and Things to Avoid,” which will be held on Tuesday morning.

“Many STS members provide care to patients during charitable surgical missions in other countries. In fact, many of us view these missions as our professional responsibility and an opportunity to help others in need and ‘pay back society,’” said Jeffrey P. Jacobs, MD, Director of the Andrews/Daicoff Cardiovascular Program at Johns Hopkins All Children's Heart Institute and Professor of Surgery at The Johns Hopkins University.

During this new session, speakers will review the basic strategies, key structural and process elements, and potential pitfalls.

Dr. Jacobs will present during the session, along with R. Morton Bolman III, MD, of Boston, Joseph A. Dearani, MD, of Rochester, Minn., William M. Novick, MD, of Memphis, Tenn., Luca A. Vricella, MD, of Baltimore, and Samuel Weinstein, MD, of New York City. Each of these surgeons has substantial experience leading charitable surgical missions in other countries.

“Charitable surgical missions can both save the lives of our patients and train and empower the local teams to save many more lives,” Dr. Jacobs said.

If you haven't already registered for this ticketed session, sign up today at Registration in Lobby D on the main level of the convention center.

### Early Riser Session 10

TUESDAY,  
7:30 a.m. – 8:30 a.m.  
Room 29D

## Early Riser Sessions

Sign up now at Registration in Lobby D. These ticketed sessions will be held from 7:30 a.m. to 8:30 a.m. on Tuesday.

### Early Riser Session 1

Women in Thoracic Surgery – Practice Management

### Early Riser Session 2

Maintaining Quality Outcomes in Low-Volume Cardiac Surgery Programs: The Dilemma Facing US Government-Managed Hospitals

### Early Riser Session 3

Ask the Experts – Esophageal Benign Disease

### Early Riser Session 4

Clinical Trials in General Thoracic Surgery

### Early Riser Session 5

Ask the Experts – Pulmonary Regurgitation With Tetralogy of Fallot

### Early Riser Session 6

Ask the Experts – Controversies in Mitral Valve and Atrial Fibrillation Surgery

### Early Riser Session 7

Early Career – First 5 Years in Practice

### Early Riser Session 8

Transitions in Your Career – From Clinician to Administrator

### Early Riser Session 9

Impact of a Functional Heart Team on Prevention and Management of TAVR Complications – A Case-Based Discussion

### Early Riser Session 10

Charitable Surgical Missions – How to Set Them Up and Things to Avoid

### Early Riser Session 11

Coding and Billing in the ICU as a CT Surgeon

### Early Riser Session 12

ABTS 5-Year and 10-Year Milestones

# STS 51st Annual Meeting Exhibitors

**3si Surgical Safety Solutions 634**

Burlington, MA  
3si markets a speech recognition-driven software solution that resides in the OR to track the surgical team's procedural workflow. It has an embedded electronic checklist that extends from preoperative to postoperative phases and alerts the team when activities are missed. Use of the 3si HUB improves situational awareness, promotes effective communication, and encourages better teamwork.

**A&E Medical Corporation 922**

Durham, NC  
A&E Medical's products include MYO/Wire® temporary pacing wires, MYO/Wire II sternum wires, MYO/Punch rotating surgical punch, MYO/Lead disposable patient cable, and DoubleWire high-strength sternal closure system.

**Abbott Vascular 427**

Santa Clara, CA  
Abbott (NYSE: ABT) is a global health care company devoted to improving life through the development of products and technologies that span the breadth of health care. With a portfolio of leading, science-based offerings in diagnostics, medical devices, nutritionals, and branded generic pharmaceuticals, Abbott serves people in more than 150 countries and employs approximately 70,000 people.

**ACUTE Innovations 221**

Hillsboro, OR  
Furthering its reputation as a leader in the thoracic industry, ACUTE Innovations® continues to make advancements in chest wall stabilization technology. Stop by booth 221 to learn about ACUTE's cutting-edge products: RibLoc® U Plus Chest Wall Plating System and AcuTie® II Sternum Closure System.

**Admedus 433**

Minneapolis, MN  
Admedus, a global health care group, is working with renowned medical leaders to bring new medical technologies to market. CardioCel®, a cardiovascular scaffold, is the first of its ADAPT® tissue-engineered bioimplants and is being used by surgeons to repair simple and complex cardiac defects.

**Aesculap 926**

Center Valley, PA  
Aesculap Inc., a member of the B. Braun family of health care companies, is the world's largest manufacturer of surgical instrumentation. For more than 138 years, Aesculap has provided customers with surgical instrumentation for ENT, plastic and reconstructive, thoracic, microvascular, cardiovascular, and laparoscopic surgery.

**American Association for Thoracic Surgery 414**

Beverly, MA  
Founded in 1917, the American Association for Thoracic Surgery is dedicated to excellence in research, education, and innovation in cardiothoracic surgery and has become an international professional organization of more than 1,300 of the world's foremost cardiothoracic surgeons. www.aats.org

**ATMOS 735**

Allentown, PA  
ATMOS offers the finest quality, patient-friendly devices that empower medical professionals to provide the best possible quality of care. The ATMOS philosophy, combined with ambitious and team-oriented employees, continues to facilitate the company's continued success. "For a better life."

**AtriCure Inc. 815**

West Chester, OH  
AtriCure is intent on reducing the global Afib epidemic and healing the lives of those affected through clinical science, education, and innovation. The company is a leading Afib solutions partner, with the only FDA-approved surgical treatment for Afib and the most widely implanted occlusion device for left atrial appendage management.

**STS Exhibit Hall Hours**

**Monday, January 26**  
9:00 a.m. – 4:30 p.m.

**Tuesday, January 27**  
9:00 a.m. – 3:00 p.m.

**B. Braun Interventional Systems Inc. 1604**

Bethlehem, PA  
Braun Medical Inc. is a \$3 billion international health care provider. B. Braun Interventional Systems Inc. is a worldwide leader in interventional accessories. In the United States, B. Braun offers a full line of innovative vascular access, interventional accessory, and angioplasty and valvuloplasty balloon products.

**Baxter Healthcare 1227**

Deerfield, IL  
As a global, diversified health care company, Baxter International Inc. applies a unique combination of expertise in medical devices, pharmaceuticals, and biotechnology to create products that advance patient care worldwide.

Continued on following page

The information listed here is accurate as of January 9, 2015. The information for these products and services was provided by the exhibitors, and inclusion in this publication should not be construed as a product endorsement by STS.

First-time exhibitors are highlighted in yellow. Exhibitors highlighted in blue are advertisers of *The STS Meeting Bulletin*. A yellow and blue shaded company is both.

**ENTRANCE**    **ENTRANCE**

**REGISTRATION**

**Lobby**    **INFORMATION**

Continued from previous page

**Berlin Heart Inc. 619**

The Woodlands, TX

Berlin Heart is the only company worldwide that develops, manufactures, and distributes ventricular assist devices for patients of every age and body size. EXCOR<sup>®</sup> Pediatric provides medium- to long-term circulatory support specifically for infants and children awaiting heart transplants. EXCOR Pediatric is approved for use in the United States under Humanitarian Device Exemption regulations by the FDA.

**BFW Inc. 522**

Louisville, KY

BFW understands the medical profession's demands like no other. With more than 40 years of experience, the company strives to be a technological pioneer. Its latest innovations are the next generation of dynamic surgical and examination illumination systems that revolutionize the global medical community's understanding about lighting solutions.

**Bio-Gate USA 1608**

Buena Park, CA

Bio-Gate USA, Inc. is the exclusive distributor for Xenosys products, such as the lightweight surgical telescope, small and bright medical LED headlight system, and camera system. The company has been located in Southern California since 1999.

**Biomed Simulation Inc. 409**

Poway, CA

Biomed Simulation Inc. supplies patient simulators for surgical and critical care applications. Biomed's flagship simulator, "Califia," connects directly to an HLM or ECMO machine providing realistic patient responses. Its programmability and integration with a wide range of monitors allow the delivery of consistent, robust clinical scenarios.

**Biomet Microfixation 826**

Jacksonville, FL

Biomet Microfixation is a leading global health care provider of thoracic products. The company's thoracic portfolio includes the Pectus Bar for repair of pectus excavatum and the SternaLock Blu Primary Closure System for sternal closure. The Blu System aligns and stabilizes the sternum after sternotomy and enables easier closure after minimally invasive access.

**Bolton Medical 933**

Sunrise, FL

Bolton Medical is a subsidiary of the Werfen Life Group, an international company that manufactures and distributes medical diagnostic solutions and medical devices worldwide. Bolton sells endovascular therapies, such as the Relay Thoracic Stent-Graft, in both US and international markets and Relay NBS in international markets.

**Bryan Corporation 1137**

Woburn, MA

**CardiacAssist, Inc. 1602**

Pittsburgh, PA

CardiacAssist, inventor of the TandemHeart<sup>®</sup> Extracorporeal Circulatory Support System, offers versatile mechanical circulatory support treatment options. While the company is best known for its Left Ventricular Support platform,

it recently launched a line of arterial cannulae and the PROTEK Duo<sup>™</sup> Veno-Venous dual lumen cannula. Stop by booth #1602 to learn more.

**Cardiomedical GmbH 306**

Langenhagen, Germany

**CareFusion 727**

San Diego, CA

CareFusion is a global corporation helping clinicians and hospitals measurably improve patient care. The PleurX<sup>®</sup> Catheter System allows patients to manage symptoms associated with recurrent pleural effusions and malignant ascites at home, reducing the length of stay and cost of care while improving quality of life. Visit CareFusion at booth 727 to learn more.

**Castle Biosciences 832**

Greensboro, NC

**Chase Medical 1236**

Richardson, TX

Chase Medical is dedicated to cardiac surgeons by delivering a full line of beating heart stabilization products for off-pump procedures. Chase also manufactures and distributes the unique SVR product used in ventricular restoration, as well as the Triumph Cannula, a minimally invasive aortic occlusion device.

**ClearFlow 636**

Anaheim, CA

The PleuraFlow<sup>®</sup> Active Clearance Technology<sup>™</sup> System offers a safe way to proactively maintain chest tube patency, minimizing complications from ineffective evacuation of blood after surgery. Results from a recent prospective clinical trial showed a 42% decrease in reinterventions and a 30% decrease in postoperative atrial fibrillation with the PleuraFlow ACT.

**ConvaTec 934**

Bridgewater, NJ

ConvaTec is a leading developer and marketer of innovative medical technologies, including AQUACEL<sup>®</sup> Ag SURGICAL cover dressing. As the only cover dressing to incorporate unique patented Hydrofiber<sup>®</sup> technology, it helps improve outcomes by locking in fluid, including harmful bacteria, and releasing ionic silver to help reduce the risk of infection.

**Cook Medical 1133**

Bloomington, IN

Founded in 1963, Cook Medical pioneered many of the medical devices now commonly used to perform minimally invasive medical procedures throughout the body. Today, the company integrates medical devices, drugs, and biologic grafts to enhance patient safety and improve clinical outcomes. Since its inception, Cook has operated as a family-held private corporation.

**CorMatrix 527**

Roswell, GA

CorMatrix<sup>®</sup> Cardiovascular markets its ECM<sup>®</sup> Bioscaffold devices for vascular repair, pericardial repair and reconstruction, cardiac tissue repair, and CanGaroo ECM Envelope. The company is currently conducting preclinical studies to evaluate other cardiac and vascular applications.

**Covidien 1311**

New Haven, CT

Covidien is a leading global health care products

company that creates innovative medical solutions for better patient outcomes and delivers value through clinical leadership and excellence. Please visit [www.covidien.com/surgical](http://www.covidien.com/surgical) to learn more.

**CryoLife 511**

Kennesaw, GA

CryoLife is a leader in the development and implementation of advanced technologies associated with allograft processing and cryopreservation. CryoLife also pioneers research in the development of implantable biological devices, surgical adhesives, hemostatic agents, and biomaterials for cardiac, vascular, and general surgery.

**CT Assist 313**

Philippi, WV

**CTSNet 410**

Chicago, IL

CTSNet ([www.ctsnet.org](http://www.ctsnet.org)), headquartered in Chicago, is the leading international source of online resources related to cardiothoracic surgery, as well as the major hub of the international online community of cardiothoracic surgeons and allied health care professionals.

**Davol Inc. 1321**

Warwick, RI

Davol, a BARD company, is the market leader in comprehensive soft tissue reconstruction. In addition to this extensive suite of products, the company's BioSurgery franchise delivers a growing line of enhanced sealants and hemostatic products to complement surgical techniques across thoracic, cardiovascular, and other surgical specialties.

**Designs for Vision 520**

Ronkonkoma, NY

Just See It<sup>™</sup> with Designs for Vision's lightweight custom-made surgical telescopes—now available with Nike<sup>®</sup> frames. See It Even Better<sup>™</sup> with the L.E.D. Daylite<sup>®</sup> or Twin Beam<sup>®</sup>, providing the brightest and safest untethered illumination. Introducing the L.E.D. Daylite<sup>®</sup> Nano Cam HD—document procedure and HD video from your perspective.

**DGMR / Global Intercepts 405**

Dumont, NJ

Utilizing relationships with health care providers all over the world, DGMR / Global Intercepts provides insights on markets, technologies, and devices. The company is uniquely qualified to evaluate marketing strategies, as well as test product development directions, device concepts, product positioning, messaging, and brand identity. Research studies are initiated before, during, and after any United States or international conference.

**Dilon Technologies 315**

Newport News, VA

Dilon Technologies Inc. manufactures the Navigator gamma positioning system with Daniel Lung Probe. The Daniel Probe addresses the challenges of localizing small, indiscriminate lesions in MIS pulmonary procedures. This VATS technique uses radioisotope localization to facilitate rapid, precise identification of targeted tissue, while minimizing the resection of healthy tissue.

**Domain Surgical 300**

Salt Lake City, UT

Domain Surgical's FMX Ferromagnetic Surgical System is an advanced thermal energy surgical platform that uses ferromagnetic technology to cut, coagulate, and seal tissue. A variety of surgical tools have been designed to bring the unique clinical benefits of this technology to a broad array of surgical subspecialties.

**Dornier MedTech America, Inc. 1232**

Kennesaw, GA

Dornier MedTech is committed to providing innovative solutions for a variety of health care fields worldwide and revolutionizes spider and varicose vein treatments by offering multifunctional, state-of-the-art, high performance diode lasers.

**EBM 1521**

Tokyo, Japan

EBM, a biomedical spin-out venture company from Japan, provides the original beating heart simulator and quantitative assessment system for off-pump coronary artery bypass and vascular anastomosis worldwide. Skill assessment is based on rapid CFD technology and validated silicone vascular model.

**Edwards Lifesciences 901**

Irvine, CA

Edwards Lifesciences is the global leader in the science of heart valves and hemodynamic monitoring. Driven by a passion to help patients, the company partners with clinicians to develop innovative technologies in the areas of structural heart disease and critical care monitoring, enabling them to save and enhance lives. Additional company information can be found at [www.edwards.com](http://www.edwards.com).

**Elsevier 1327**

Philadelphia, PA

Elsevier is the proud publisher of The Annals of Thoracic Surgery and a world-leading provider of information solutions that enhance the performance of science, health, and technology professionals. Elsevier empowers better decision making and the delivery of better care. [www.elsevierhealth.com](http://www.elsevierhealth.com)

**Enova Illumination 1415**

St. Paul, MN

Enova Illumination manufactures the brightest and most adjustable LED surgical headlights that allow complete mobility in the OR—no need to be tethered to fiber optic cables. The products feature extra-long battery life and are lightweight for long-lasting comfort.

**Essential Pharmaceuticals 1505**

Ewing, NJ

Essential Pharmaceuticals is a specialty pharmaceutical company devoted to the development and sales of branded pharmaceutical products in the transplant/cardiopulmonary surgery fields, including Custodial<sup>®</sup> HTK. Please visit booth #1505 and [www.custodial.com](http://www.custodial.com).

**ETHICON/DePuy Synthes CMF 301**

Cincinnati, OH

Ethicon US LLC, a Johnson & Johnson company, commercializes a broad range of innovative surgical products, solutions, and technologies used to treat some of today's most



prevalent medical issues, such as colorectal and thoracic conditions, women's health conditions, hernias, cancer, and obesity. Learn more at [www.ethicon.com](http://www.ethicon.com) or follow Ethicon on Twitter @Ethicon.

### European Association for Cardio-Thoracic Surgery (EACTS) 420

Windsor, United Kingdom  
EACTS is the largest European association devoted to the practice of cardiothoracic surgery. The main objective of the association is to advance education in the field of cardiothoracic surgery and to promote, for the public benefit, research into cardiovascular and thoracic physiology and therapy, and to correlate and disseminate the useful results thereof. Visit booth 420 for more information.

### European Society of Thoracic Surgeons (ESTS) 422

Exeter, United Kingdom  
ESTS is the largest international general thoracic surgery organization with more than 1,400 members from all continents. The society's mission is to improve quality in the specialty, from the clinical and surgical management of patients to education, training, and credentialing of thoracic surgeons worldwide.

### Fehling Surgical 1027

Acworth, GA  
Fehling Surgical features the CERAMO® Instrument Line, SUPERPLAST Probes, and new, innovative retractor systems for minimally invasive cardiac surgery. The CERAMO® surface means high efficiency through enhanced performance, increased endurance, and minimal maintenance.

### General Cardiac Tech/Heart Hugger 535

San Jose, CA  
Heart Hugger-Sternum Support Harness is a patient-operated support harness applied postoperatively to splint surgical wounds. Benefits include improved patient compliance, faster return to pre-morbid respiratory levels, fewer wound complications, and better postoperative mobility. It is useful for post open-heart, thoracotomy, fractured rib, and other chest trauma patients.

### Genesee BioMedical 827

Denver, CO  
Design Beyond Standard. Genesee BioMedical, Inc. provides unique devices for cardiothoracic surgery, including sternal/thoracic valve retractors, instruments for minimally invasive cardiac surgery, coronary graft markers, suture guards, retraction clips, and myocardial needles. All products are CE approved. [www.geneseebiomedical.com](http://www.geneseebiomedical.com)

### Gore & Associates 1127

Flagstaff, AZ  
The Gore Medical Products Division has provided creative solutions to medical problems for three decades. Over 35 million Gore medical devices have been implanted worldwide. Products include vascular grafts, endovascular and interventional devices, surgical materials, and sutures for use in vascular, cardiac, and general surgery. For more information, visit [www.goremedical.com](http://www.goremedical.com).

### Hawaiian Moon 1122

Clearwater, FL  
Say goodbye to dry skin with Hawaiian Moon Organic Aloe Cream.

### Heart Valve Society (HVS) 1234

Beverly, MA  
For the first time, a truly collaborative international valve society, comprised of cardiologists, cardiac surgeons, and researchers, is coming together to create this new organization of unprecedented depth. The Heart Valve Society (HVS) website is [www.HeartValveSociety.org](http://www.HeartValveSociety.org).

### HeartWare 519

Framingham, MA  
HeartWare is dedicated to delivering safe, high-performing, transformative therapies that enable patients with heart failure to get back to life. The HVAD® Pump is designed to be implanted in the pericardial space, avoiding the more invasive surgical procedures required with older LVAD technologies. The HVAD Pump is commercially available around the world.

### Hospital Corporation of America 329

Fort Lauderdale, FL  
HCA affiliated facilities in East Florida are a part of a quality health care network in East Florida and the Treasure Coast with 14 affiliated hospitals, 12 surgery centers, one integrated regional lab, and one consolidated service center. Together, the network employs more than 12,500 individuals and has close to 6,000 physicians on staff.

### ImaCor, Inc. 327

Garden City, NY  
ImaCor develops advanced critical care solutions for hemodynamic assessment. hTEE™ (hemodynamic Transesophageal echocardiogram (TEE) is the first and only technology to provide continuously available direct cardiac visualization. hTEE is enabled through the 72-hour ClariTEE® probe, a miniaturized and disposable TEE probe, and the Zura™ Imaging Systems for episodic assessment.

### International Society for Minimally Invasive Cardiothoracic Surgery (ISMICS) 412

Beverly, MA  
ISMICS: Innovation, technologies, and techniques in cardiothoracic and cardiovascular/vascular surgery. 2015 ISMICS Annual Scientific Meeting, 3-6 June 2015, InterContinental Hotel, Berlin, Germany. [www.ismics.org](http://www.ismics.org)

### Intuitive Surgical 1101

Sunnyvale, CA  
Intuitive Surgical, Inc. designs, manufactures, and distributes the da Vinci® Surgical System, technology designed to allow surgeons to perform many complex procedures minimally invasively.

### IsoRay Medical 729

Richland, WA  
IsoRay Medical manufactures and distributes radiation therapy sources for direct implantation into cancer or surgical margins following resection of cancer. IsoRay markets Cesium-131 brachytherapy meshes and strands for resection line treatment following surgery for high-risk lung cancers, resulting in highly conformal

adjuvant radiation therapy that spares critical thoracic structures.

### JACE Medical 837

Warsaw, IN  
JACE is a medical device development company pioneering a fully integrated resequencing technology and application for sternal resection and closure. The company innovates with an eye toward providing definitive benefits across the entire five-sided health care spectrum of patient, physician, provider, payer, and regulator. Visit the JACE booth and see how the company thinks outside the paradox. [www.JACEMED.com](http://www.JACEMED.com)

### JOMDD 1033

Tokyo, Japan  
JOMDD is engaged in the medical device incubation business, leveraging untapped technologies originating from Japan. The company operates as a new technology sourcing engine, currently developing multiple medical devices with high potential and uniqueness, and is looking for potential partnerships with medical device manufacturers to expand its products globally.

### KaMedi Co. Ltd. 1510

Hua Hin, Thailand  
SternaSafe is an active sternum support band.

### Kapp Surgical 1032

Cleveland, OH  
Kapp Surgical designs surgical instruments and implants, manufactures them, and sells them, as well as distributes domestically and internationally. Kapp's exclusive products are the Cosgrove Heart Retractor, Strip T's surgical organizer, and countless surgical devices, all FDA-approved with several pending approval.

### Karl Storz 1226

El Segundo, CA  
Karl Storz offers solutions for thoracic surgery, including slender, easily dismantled MediaFIT instruments that offer economic solutions for mediastinoscopy. The company's EndoCAMeleon® Telescope allows the surgeon to adjust the viewing direction from 0° to 120° throughout procedures without changing telescopes.

### KLS Martin 1421

Jacksonville, FL  
KLS Martin, a responsive company, is focused on the development of innovative products for oral, plastic, and craniomaxillofacial surgery. New product developments in the company's titanium osteosynthesis plating systems allow these products to be used for rapid sternal fixation and reconstruction.

### Koros USA, Inc. 722

Moorpark, CA  
For the past 30 years, Koros USA, Inc. has been designing and distributing state-of-the-art surgical instruments, like the Cervical Black Belt, Lumbar Super Slide, and ALIF Polaris Lateral Retractors, along with the Rotating Osteo Punch, Ejector Punch Rongeurs, and many more fine hand instruments.

### LifeNet Health 1426

Virginia Beach, VA  
LifeNet Health helps save lives and restore health for thousands of patients each year.

It is the world's most trusted provider of transplant solutions, from organ procurement to new innovations in bioimplant technologies and cellular therapies—a leader in the field of regenerative medicine, while always honoring the donors and health care professionals who allow the healing process.

### Lippincott Williams & Wilkins 1037

La Mesa, CA

### LoupeCam 833

Scottsdale, AZ  
LoupeCam® is the market leader in head-mounted HD surgical cameras and is the only company offering cross-platform (Mac, Windows, and soon Android compatibility). The company offers five different magnification lenses to match all surgical points of view, along with a Bluetooth foot pedal, which allows for hands-free control of the camera.

### LSI Solutions 1427

Victor, NY  
COR-KNOT® delivers instant security with knot placement and integrated suture trimming in one easy step. COR-KNOT® may reduce cardiopulmonary bypass and cross-clamp time. Internationally recognized innovation for advanced CT surgeons. Visit booth 1427 for more information.

### MAQUET 633

Wayne, NJ  
MAQUET Medical Systems is a market leader focused on improving patient care and quality of life. The company offers a comprehensive portfolio of innovative products designed to meet the needs of clinical professionals in the areas of advanced hemodynamic monitoring, cardiothoracic and vascular surgery, thoracic drainage, cardiac intervention, perfusion, anesthesia, and ventilation.

### Market Access Partners 311

Evergreen, CO  
Market Access Partners provides market research consulting to the medical device and pharmaceutical industries. The company uses innovative, qualitative methodologies to research opinions of physicians, nurses, and patients. Market Access Partners offers a management-oriented approach to product development and marketing.

### Mayo Clinic 312

Jacksonville, FL  
Mayo Clinic has been recognized as the best hospital in the nation for 2014-2015 by U.S. News and World Report and one of the top 100 "Best Companies to Work For" by FORTUNE. Mayo Clinic is the largest integrated, not-for-profit medical group practice in the world working in a unique environment that brings together the best in patient care, groundbreaking research, and innovative medical education.

### Med Alliance Solutions 1220, 1221

St. Charles, IL  
ISO 13485-certified medical device distributor committed to providing high-quality specialty devices for cardiothoracic surgery worldwide. Exclusive US distributor of French instruments manufacturer Delacroix-Chevalier

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and operational partner to Michigan-based Surge Cardiovascular for open heart surgical products.

### Medela 715

McHenry, IL  
Medela, the market leader in breastfeeding education and research, provides medical vacuum solutions featuring Swiss technology in over 90 countries. Medela Healthcare optimizes patient care through pioneering and intelligent, mobile, digital chest drainage therapy and advanced wound management with negative pressure wound therapy.

### Medistim 721

Plymouth, MN  
Medistim is the standard of care in the operating room. With the unique combination of transit time flow measurement and high-frequency ultrasound imaging guidance to help reduce and minimize the risk of negative postoperative outcomes, Medistim's quality assessment technology offers surgeons quantifiable validation and guidance during cardiovascular, vascular, transplantation, and neurosurgery.

### Medtronic 701

Minneapolis, MN  
Medtronic is committed to "Innovating for life" by pushing the boundaries of medical technology and changing the way the world treats chronic disease. Medtronic's breadth of solutions in structural heart and aortic disease management includes: tissue, mechanical, and transcatheter valves; irrigated RF and cryosurgical ablation devices; aortic stent graft systems; and off-pump coronary artery bypass, minimally invasive cardiac surgery/coronary artery bypass grafting, cannulae, and perfusion products.

### MedXpert North America 1433

Edmond, OK  
MedXpert North America, LLC is a producer of medical devices (implants and instruments) specialized for all kind of procedures in the thoracic part of the human body. The company produces StraTos for three different indications (deformity, reconstruction after tumor resection, as well as trauma) and StraCos for two indications (trauma and reconstruction).

### Microsurgery Instruments, Inc. 302

Bellaire, TX  
Microsurgery Instruments is one of the leading suppliers of surgical instruments and loupes. The company's instruments include titanium scissors, needle holders, and DeBaKey forceps. Its Super-Cut scissors are the sharpest in the market, and its newly designed surgical loupes offer up to 130 mm field of view and up to 11x magnification.

### Munson Healthcare 403

Traverse City, MI  
As a regional health care system, Munson Healthcare provides direct access to over 700 physicians, representing 54 specialty services at eight health care facilities that have been repeatedly recognized for excellence in quality, service, and patient care. Its 391-bed regional referral center is located in beautiful northern

lower Michigan near Lake Michigan. Visit [www.munsonhealthcare.org](http://www.munsonhealthcare.org).

### Myriad Genetic Laboratories, Inc. 417

Salt Lake City, UT  
Myriad Genetics is a leading molecular diagnostic company dedicated to making a difference in patient's lives through the discovery and commercialization of transformative tests to assess a person's risk of developing disease, guide treatment decisions, and assess risk of disease progression and recurrence.

### Nadia International 1411

Austin, TX  
Educational/surgical bronze sculptures specifically for the thoracic surgeon. These museum-quality limited editions are created by the world famous sculptor Ronadró. More than 7,000 surgeons in 75 countries collect his fine works of art. His works are on display at the Smithsonian Institute and many medical universities throughout the world.

### nContact 411

Morrisville, NC  
nContact is a leader in the development of disease management programs, with the goal of opening unmet markets, minimizing rehospitalizations, and improving health care savings. nContact's mission is to transform the underserved arrhythmia market and benefit the entire cardiovascular service line.

### NeoChord, Inc. 304

Eden Prairie, MN  
NeoChord, a US-based medical device company, intends to transform mitral valve repair by providing minimally invasive technology that enables beating heart, sternal-sparing implantation of artificial chord tendinae.

### On-X Life Technologies, Inc. 927

Austin, TX  
On-X<sup>®</sup> Heart Valves and MV Chordal Repair: Patented natural design and On-X<sup>®</sup> Carbon offer reduced turbulence in a mechanical valve to rival the clinical and hemodynamic performance of bioprostheses. FDA IDE approved PROACT (Prospective Randomized On-X<sup>®</sup> Anticoagulation Clinical Trial) in process. Chord-X ePTFE Suture for MV repair available.

### Ornim 1417

Foxboro, MA  
Ornim specializes in research, development, and distribution of noninvasive patient monitors specializing in the field of tissue and cerebral blood flow. The company's bedside product, c-FLOW<sup>™</sup>, is based on the patented UTLight<sup>™</sup> technology designed to provide physicians with unique monitoring solutions that are imperative to individualized and personalized patient care.

### Otto Trading Inc. 1132

Santa Ana, CA

### Oxford University Press 1035

Cary, NC  
OUP publishes some of the most respected medical books and journals in the world, including the three journals of the European Association for Cardio-Thoracic Surgery. Visit the booth to browse books and pick up journal sample copies.

### Pemco Inc. 1514

Cleveland, OH  
Pemco has designed and manufactured precision surgical instruments for the cardiovascular field. The company has documented that its perfusion cannula, coronary ostial cannula, and cardiac suckers offer cost savings over disposables. Additional products include reusable subclavian and femoral cannula, anesthesia screens, and the Rultract retractor.

### Pinnacle Biologics 321

Bannockburn, IL  
Pinnacle Biologics, Inc. specializes in revitalizing health care therapies by promoting, developing, and managing innovative approaches to the commercialization of products with a focus on oncology and orphan diseases. PD T with Photofrin<sup>®</sup> is an effective therapy for select thoracic malignancies.

### PneumRx, Inc. 1120

Mountain View, CA  
PneumRx, Inc. is a medical device startup focused on developing minimally invasive solutions for unmet needs in pulmonary medicine. The RePneu<sup>®</sup> Coil System is intended to improve exercise capacity, lung function, and quality of life in patients with severe emphysema. The coils compress hyperinflated tissue and tether small airways to prevent airway collapse without blocking lung parenchyma.

### QED Medical 1527, 1529

Lexington, KY  
QED Medical introduces the new XL 10-watt OR-ready Portable LED Headlight System featuring un-tethered mobility, maximum intensity, and a lightweight design with intensity and spot size controls. Since 1971, QED Medical has developed a comprehensive line of US-made headlight illumination and video headlight systems for applications from examination to surgery.

### Quest Medical, Inc. 1126

Allen, TX  
Quest Medical, Inc. is a medical device manufacturer and worldwide distributor specializing in protecting the heart during cardiac surgery with the Quest MPS 2<sup>®</sup> and microplegia. Quest also offers a unique variety of aortic punches, safety valves, vascular loops, and an anesthesia line designed for optimum cardiovascular surgery.

### Regional Data Managers: STS National Database 1118

Ann Arbor, MI  
The Regional Data Managers booth provides opportunities for surgeons to interact with data managers from around the country who are actively involved with regional STS National Database efforts and collaborative STS groups. Visit booth 1118 to learn about regional activities and initiatives.

### RMD Global 1616

Las Vegas, NV

### Rose Micro Solutions 932

West Seneca, NY  
Rose Micro Solutions sells high-quality optical loupes and LED lights for less. The company's loupes start at \$279. Rose Micro Solutions is a family business consisting of four brothers, who

named the company after their mother Rose. Stop by booth 932, visit the company online at [www.rosemicrosolutions.com](http://www.rosemicrosolutions.com), or call (716) 608-0009.

### RTI Surgical 421

Alachua, FL  
RTI Surgical is a leading global surgical implant company providing surgeons with safe biologic, metal, and synthetic implants. RTI's implants are used in sports medicine, general surgery, spine, orthopedic, trauma, and cardiothoracic procedures, and are distributed in nearly 50 countries. RTI is headquartered in Alachua, FL, and has four manufacturing facilities in the US and Europe.

### Rultract 1516

Cleveland, OH  
Rultract's surgical retractor provides gentle and uniform lift, allowing maximum exposure for IMA dissection, redo hearts, xiphoid entry, subxiphoid pericardial procedures, minimally invasive procedures (capable for use with Thoratrak), parasternal procedures, pediatric/ASD, t-incisions, transabdominal GEA midcab, Pectus, LVAD extraction, and TEMPLA procedures. [www.rultract.net](http://www.rultract.net)

### Scanlan International 500

St. Paul, MN  
Highest quality surgical products designed and manufactured by the Scanlan family since 1921. More than 3,000 surgical instruments in titanium and stainless steel, including D'Amico Mediastinoscopy Biopsy Forceps, new shorter VATS instruments, Uniportal VATS instruments, MEMORY Dilators/Vessel Probes, LEGACY Needle Holders and Forceps, and single-use products.

### Siemens Medical Solutions USA Inc. 310

Malvern, PA  
Siemens Healthcare is one of the world's largest health care industry suppliers and the first full-service diagnostics company. The company is known for bringing together innovative medical technologies, health care information systems, management consulting, and support services to help customers achieve tangible, sustainable, clinical, and financial outcomes. [www.usa.siemens.com/healthcare](http://www.usa.siemens.com/healthcare)

### Society of Thoracic Surgeons, The 1111

Chicago, IL  
The Society of Thoracic Surgeons represents more than 6,900 surgeons, researchers, and allied health care professionals worldwide who are dedicated to ensuring the best possible outcomes for surgeries of the heart, lung, and esophagus, as well as other surgical procedures within the chest. The Society offers a wide variety of member benefits, including reduced participation fees in the world renowned STS National Database<sup>™</sup>, a complimentary subscription to The Annals of Thoracic Surgery, dynamic educational offerings, online patient information resources, and much more. The Society also supports cutting-edge research via the STS Research Center and advocates in Washington, DC, on behalf of cardiothoracic surgery professionals and their patients. Stop by the STS booth 1111 or visit [www.sts.org](http://www.sts.org) to learn more.

### Sontec Instruments 1501

Centennial, CO  
Sontec offers headlights, loupes, and the most comprehensive selection of exceptional handheld surgical instruments available to the discriminating surgeon. There is no substitute for quality, expertise,

and individualized service. Sontec's vast array awaits your consideration at its booth.

**Sorin Group 1301**

Arvada, CO  
Sorin Group is a world leader in the treatment of cardiovascular disease. Its innovative product portfolio includes aortic and mitral valve replacement and repair, perfusion equipment, cannula, and MICS instruments. For more information, visit the company's website at [www.sorin.com](http://www.sorin.com).

**Spectrum Health 314**

Grand Rapids, MI  
Spectrum Health is a not-for-profit health system, based in West Michigan, offering a full continuum of care through the Hospital Group, which is comprised of 11 hospitals; 169 ambulatory/service sites; 1,150 physicians and advanced practice providers, including Spectrum Health Medical Group members; and Priority Health, a 590,000-member health plan. Visit [spectrumhealth.org](http://spectrumhealth.org) for more information.

**Spiration, Inc. 1121**

Redmond, WA  
The Spiration® Valve System has a humanitarian device approval in the United States to control specific postoperative air leaks of the lung, and has CE mark approval for the treatment of diseased lung in emphysematous patients and for damaged lung resulting in air leaks by limiting air flow to selected areas.

**St. Jude Medical 600**

St. Paul, MN  
St. Jude Medical is a global medical device manufacturer dedicated to transforming the treatment of some of the world's most expensive, epidemic diseases. The company does this by developing cost-effective medical technologies that save and improve lives of patients around the world. Headquartered in St. Paul, MN, St. Jude Medical has four major clinical focus areas that include cardiac rhythm management, atrial fibrillation, cardiovascular, and neuromodulation. Please visit [sjm.com](http://sjm.com).

**Stroke Prevention Systems, Z-Medical, Inc. 316**

Inman, SC  
The company is focused on developing devices for prevention of embolic stroke in cardiovascular procedures, such as TAVR, PCI, ablation, AVR, CABG, TMR, and TEVAR. It designed and clinically implemented the first noninvasive cerebral protection device (Stroke Prevention System, SPS™), activated "on demand" at the time of embolic insult. Several other cerebral protection devices are being developed.

**STS Public Reporting 1117**

Chicago, IL  
STS is committed to transparency and the accurate reporting of cardiothoracic surgery outcomes. In 2015, STS will celebrate its fifth anniversary of public reporting. Visit booth 1117 to learn about the Society's adult cardiac, general thoracic, and congenital heart surgery public reporting initiatives, as well as its ongoing collaboration with Consumer Reports.

**SurgiTel/General Scientific Corp. 1600**

Ann Arbor, MI  
SurgiTel is the manufacturer of premium loupes

and headlights sold around the world from its headquarters in Ann Arbor. Holding a variety of patents, SurgiTel is always on the forefront of vision and ergonomics.

**SynCardia Systems, Inc. 1326**

Tucson, AZ  
The SynCardia temporary Total Artificial Heart (TAH-t) is the world's only FDA, Health Canada, and CE approved Total Artificial Heart. It is approved as a bridge to transplant for patients dying from end-stage biventricular failure. Visit the SynCardia booth for updates on the Freedom® portable driver, 50cc TAH-t, and destination therapy.

**Terumo 913**

Ann Arbor, MI  
Vascutek, a Terumo company, will display Gelweave™ gelatin-sealed, woven, and branched vascular grafts. The Vascutek CE-marked Thoraflex™ Hybrid device will also be featured (not cleared for sale in the United States). Terumo will display the VirtuoSaph® Plus Endoscopic Vessel Harvesting System, Beating Heart and Surgical Stabilization products for cardiothoracic procedures, and Terumo® Perfusion Products.

**Thompson Surgical 510**

Traverse City, MI  
Thompson Surgical has been a leader in exposure for over 50 years. Cardiovascular surgeons will benefit from the Thompson Surgical Bolling Retractor, which provides low profile, stable, uncompromised exposure of the heart structures. The company provides innovative, high-quality systems that deliver safe, versatile retraction.

**Thoracic Surgery Foundation for Research and Education (TSFRE) 1216**

Chicago, IL  
TSFRE is the charitable arm of The Society of Thoracic Surgeons. The mission of TSFRE is to foster the development of surgeon scientists in cardiothoracic surgery; increasing knowledge and innovation to benefit patient care. The foundation represents cardiothoracic surgery in the United States and its research and education initiatives support the broad spectrum of cardiothoracic surgery.

**Thoracic Surgery Residents Association 537**

Chicago, IL  
The Thoracic Surgery Residents Association (TSRA) represents the interests of all residents training in cardiothoracic surgery. TSRA provides resources and programming for CT surgery residents, including clinical books and apps, speakers, mixers, and traveling fellowship opportunities.

**Thoramet Surgical 823**

Rutherford, NJ  
Thoramet Surgical Products sells the most complete line of VATS instruments available. Produced in the USA in their own facilities, they are the surgeon's choice. Visit to booth 823 to see their unique versatility. Thoramet has the feel you want, the actuation you need, and the patterns you demand.

**Thoratec Corporation 1020**

Pleasanton, CA  
Thoratec is the world leader in mechanical circulatory support with the broadest product

portfolio to treat the full range of clinical needs for patients suffering from advanced heart failure. Thoratec's products include the HeartMate LVAS, Thoratec VAD, CentriMag, and PediMag/PediVAS.

**Transonic 733**

Ithaca, NY  
You've carefully constructed several challenging anastomoses, and they all look good, but are they? Before you close your patient, take a few seconds and get precise blood measurements on each graft. Know if there is a problem now, before the patient lets you know later. Visit Transonic and see how its meters and flow probes can help you improve your outcomes.

**VAD Consulting Group, The 401**

Spokane, WA  
Whether your VAD program is just starting out or you are an established center looking to increase financial and operational efficiencies, the VAD Consulting Group has the experience and expertise to help you in today's challenging environment.

**Vikon Surgical 317**

Birmingham, AL  
Vikon® specializes in surgical headlights and devices that use proprietary technology and patented designs. Vikon Kerrisons are easier to use and clean, and stay sharper longer. The company's LED technology offers a cool, clean light that optimizes color rendering. These

innovations are part of Vikon's commitment to help you improve outcomes.

**Vitalcor, Inc./Applied Fiberoptics 718**

Westmont, IL  
Vitalcor, Inc. is a supplier of medical devices used primarily in cardiothoracic surgery. Since 1975, Vitalcor has provided products that take input from teaching and practicing surgeons to make their practice easier. The company prides itself on offering quality products and providing exceptional customer service.

**Vitalitec Geister 627**

Plymouth, MA  
Vitalitec Geister will be displaying all company products, highlighting the Enclose II Anastomosis Assist Device, Cygnet Flexible Clamps, Intrack Atraumatic Temporary Clamps and Inserts, and Geister ValveGate and ValveGate PRO line of MIS CV instrumentation.

**Wexler 1509**

Houston, TX  
Wexler Surgical designs and manufactures titanium and stainless steel specialty surgical instruments and products for cardiovascular, thoracic, and microsurgery. Visit Wexler online at [www.wexlersurgical.com](http://www.wexlersurgical.com).

**Worldwide Design 323**

Seattle, WA

## The STS Meeting Bulletin

*The Official Newspaper of the STS 51st Annual Meeting*

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What it feels like  
to be **100% sure.**

## TIGERPAW® System II

**MAQUET**  
GETINGE GROUP  
MAKE-A-WISH®

The TIGERPAW System II is a single-use, 100% occlusive left atrial appendage fastener device that allows the surgeon to achieve easy and effective placement in 60 seconds or less—resulting in zero blood loss.<sup>1</sup>

- 100% clinically proven occlusion<sup>1</sup>
- Conforms to the LAA with pliable silicon fastener
- Zero blood loss at device footprint<sup>1</sup>
- Simplified positioning with minimal manipulation of the LAA

1. Slater AD, Tatoes AJ, Coffey A, et al. Prospective clinical study of a novel left atrial appendage occlusion device. *Ann Thorac Surg.* 2012 Jun;93(6): 2035-8; discussion 2038-40.



MAQUET USA will donate \$250 to Make-A-Wish® for any single purchase order of \$50,000 or more (before tax, shipping and install) received between March 1, 2014 and February 28, 2015, with a minimum guaranteed contribution of \$50,000, up to a maximum of \$150,000. For more information about Make-A-Wish visit [wish.org](http://wish.org).

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⚠ CAUTION: Federal (US) law restricts this device to sale by or on the order of a physician. Refer to Instructions for Use for current indications, warnings, contraindications, and precautions. MC1/00025983 REVC

At STS 2015, Visit Maquet Booth #633

[www.maquetusa.com](http://www.maquetusa.com)