



STS MEETING BULLETIN

THE SOCIETY OF THORACIC SURGEONS 52ND ANNUAL MEETING | PHOENIX, ARIZONA | sts.org

MONDAY | JAN. 25, 2016

DAILY SCHEDULE

MONDAY

6:30 a.m.–5:00 p.m.

Registration: STS Annual Meeting
Lower Level Foyer

9:00 a.m.–4:30 p.m.

Exhibit Hall
Exhibit Halls 4-5

Scientific Posters
Room 120 Foyer

7:00 a.m.–7:15 a.m.

Opening Remarks
Exhibit Halls 2-3

7:15 a.m.–8:15 a.m.

J. Maxwell Chamberlain Memorial Papers
Exhibit Halls 2-3

8:15 a.m.–9:00 a.m.

Richard E. Clark Memorial Papers
Exhibit Halls 2-3

9:40 a.m.–9:50 a.m.

Introduction of the President:
Joseph E. Bavaria
Exhibit Halls 2-3

9:50 a.m.–10:50 a.m.

Presidential Address: Mark S. Allen
Exhibit Halls 2-3

11:30 a.m.–12:30 p.m.

Adult Cardiac Session: Arrhythmia
Room 120D

Basic Science Research: Adult Cardiac
Room 126ABC

Basic Science Research: General Thoracic
Room 125AB

Congenital Session: Adult Congenital
Room 122ABC

Critical Care
Room 128AB

General Thoracic Session: New Technology
Room 120A

Quality Improvement Initiatives in Thoracic
Surgery
Room 127ABC

STS/CATS/CSGS: Adding New Dimensions
to Your Surgical Practice—Optimizing Your
Internet Presence and Understanding the
Emerging Role of 3-Dimensional Printing in
Cardiothoracic Surgery
Room 123

1:15 p.m.–5:15 p.m.

Redefining Practice Through Quality and
Evidence: What's New?
Room 127ABC

1:30 p.m.–3:30 p.m.

Adult Cardiac Session: Aorta I
Room 120D

Adult Cardiac Session: Ischemic
Room 126ABC

Congenital Session: Pediatric Congenital I
Room 122ABC

General Thoracic Session: Lung Cancer I—
Diagnosis and Staging
Room 120A

see [SCHEDULE](#), page 6

Tech-Con's 'Shark Tank' Dives Deep

With video of an immense great white shark looming in waters as a stage backdrop, aspiring innovators posed their ideas before a panel of judges during Sunday morning's STS/AATS Tech-Con Joint Session: "Shark Tank"—Rapid-Fire Elevator Pitches of Revolutionary Technology.

Opening the Shark Tank program were moderators Gorav Ailawadi, MD, Chief of the Section of Adult Cardiac Surgery and Associate Professor of Surgery at the University of Virginia in Charlottesville, and Shanda H. Blackmon, MD, MPH, Associate Professor of Surgery at the Mayo Clinic, Rochester, Minn.

"Tech-Con is completely different from many past years with no CME, enabling us to talk about new devices and approaches that we were not able to discuss before at the STS meeting," Dr. Ailawadi said.

After presenters took 5 minutes each to state their cases, a panel of four judges queried the innovators about the usefulness, marketability, and cost of their cardiothoracic



Innovators pose their ideas before a panel of judges during Sunday morning's STS/AATS Tech-Con Joint Session, 'Shark Tank.'

inventions. The judges gave feedback as the audience was polled in three investment scenarios: Yes, definitely in; No, I'm out; and Possibly, but not as an early investor.

The panelists were Daniela Molena, MD, New York, Eric E. Roselli, MD, Cleveland,

Mark Slaughter, MD, Louisville, Ky., and Steven F. Bolling, MD, Ann Arbor, Mich.

After Miguel A. Maluf, MD, PhD, São Paulo, Brazil, described his prototype of an expandable, catheter-implantable, polyurethane

see [TECH-CON](#), page 17

Chamberlain Papers Highlight Impactful Research

Quality standards for lung cancer surgery, optimal timing between myocardial infarction (MI) and coronary artery bypass grafting (CABG) surgery, and initial results from the bifurcated Y-graft Fontan procedure are featured in three of the most important scientific abstracts accepted to the STS 52nd Annual Meeting program.

Each year, the J. Maxwell Chamberlain Memorial Papers kick off the meeting's scientific sessions and honor Dr. Chamberlain, who has been called "the most important influence in the formation of The Society of Thoracic Surgeons." Don't miss the 2016 presentations, which begin at 7:15 a.m. this morning in Exhibit Halls 2-3 as part of the General Session.

MOST CENTERS MISS KEY LUNG CANCER SURGERY QUALITY INDICATORS

Many lung cancer patients may not receive optimal surgical care. New research shows that the vast majority of institutions meet one or two quality standards for the surgical treatment of stage 1 non-small-cell lung cancer, but few institutions meet four key indicators.

"We found that meeting all four quality



Pamela P. Samson, MD



Elizabeth L. Nichols, MS



Kirk R. Kanter, MD

measures decreased a patient's risk of mortality by 60%," said lead author Pamela P. Samson, MD, General Surgery Resident at Washington University School of Medicine in St. Louis. "Many patients were meeting at least two quality measures during our study years of 2004 to 2013. However, when we looked at the number of patients meeting all four quality measures in the treatment of their stage 1 non-small-cell lung cancer (NSCLC), only 22.5%

received what could be called optimal care. The bar needs to be raised, especially when meeting it conveys such a significant survival advantage for patients."

On behalf of Dr. Samson, Varun Puri, MD, senior author of the study and Associate Professor of Surgery at Washington University, will present the 2016 J. Maxwell Chamberlain Memorial Paper for General Thoracic Surgery, "Quality Measures in Clinical

State 1 Non-Small-Cell Lung Cancer: Improved Performance in Associated With Improved Survival." The study was based on 146,908 surgeries for clinical stage I NSCLCs abstracted from the National Cancer Data Base (NCDB).

Surgeries were evaluated on four quality measures established by STS, the National

see [CHAMBERLAIN](#), page 4

Don't Miss Today's Presidential Address

Mark S. Allen, MD
9:50 a.m.–10:50 a.m.
Exhibit Halls 2-3



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Presentation by H. Edward Garrett, Jr. M.D.
Monday, Jan. 25 at 3:45pm • Booth #136



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CHAMBERLAIN

continued from page 1

Comprehensive Cancer Network, the American College of Surgeons Commission on Cancer, and American College of Chest Physician guidelines. The measures included performing an anatomical lung resection, surgery within 8 weeks of diagnosis, achieving an R0 resection, and pathologic evaluation of 10 or more lymph nodes. Socioeconomic factors were associated with a greater likelihood of receiving all four quality measures, as was receiving care at an academic medical center, Dr. Samson said.

“We hope that when attendees see these

results, they will think about their own institutions and practices and find ways to help more patients meet these quality measures,” Dr. Samson said. “For example, at our own institution, many patients received delayed surgery by this criteria, and we are actively working to improve that. Nationally, we also are concerned with increasing lymph node sampling and decreasing the significant number of patients who are still getting wedge resections, which are seen as oncologically inferior surgeries for

J. MAXWELL CHAMBERLAIN PAPERS

Monday

7:15 a.m.–8:15 a.m.

Exhibit Halls 2–3

lung cancer. These gaps are not evident until you probe national databases, like the NCDB, your own institutional database, and practice patterns. Therefore, we believe this study can be a starting point for the discussion both nationally and locally to improve surgical quality and patient survival.”

STUDY SUGGESTS REDUCING MI TO SURGERY TIMING

The second Chamberlain paper being presented this morning generally supports current trends

toward reducing the waiting time between MI and CABG surgery. An analysis of data from 3,060 CABG patients within the Northern New England Cardiovascular Disease Study Group Cardiac Surgery Registry found no difference in either crude or adjusted mortality rates in patients operated on 1–2 days, 3–7 days, or 8–21 days after MI. Patients operated on in <1 day had significantly higher mortality compared to those operated on 3–7 days after MI. Patients who received their CABG 8–21 days after MI had more comorbidities and slightly higher mortality.

“The timing between MI and CABG has been debated for a long time, but there are few data on outcomes with multiple discrete timing intervals of surgery,” said lead author Elizabeth L. Nichols, MS, a PhD candidate at The Dartmouth Institute in Lebanon, N.H. “These results help inform how to provide the best quality care for our patients, while not adding any unnecessary wait times between MI and surgery.”

The Chamberlain Paper for Adult Cardiac Surgery, “Optimal Timing Between Myocardial Infarction and Coronary Artery Bypass Grafting: Impact on In-Hospital Mortality,” compared in-hospital mortality rates. The study excluded emergency and shock patients, as well as patients operated on less than 6 hours following their MI, to create a more uniform cohort.

In-hospital mortality was highest in patients operated on less than 1 day after MI. There was no difference in mortality for surgeries performed 1–2 days and 3–7 days after MI, and a non-significant increase was seen in mortality for surgeries performed 8–21 days after MI.

“We would like to see more data, as always,” Nichols said, “and we would like clinicians to be mindful about how long they wait between MI and CABG. For patients who are stable, we may not have to wait 5 days but can consider operating earlier, while it may be worth waiting for high-risk patients.”

EARLY RESULTS ARE POSITIVE FOR BIFURCATED Y-GRAFT FONTAN PROCEDURE

Initial clinical results suggest that the latest revision of the Fontan procedure using a bifurcated Y-graft is safe and produces reasonable results. The new procedure is based on computer modeling that predicts improved flow dynamics by directing the inferior vena caval flow to the right and left pulmonary arteries using separate graft limbs.

The Chamberlain Paper for Congenital Heart Surgery, “Clinical Experience With the Bifurcated Y-Graft Fontan Procedure,” recounts the experience with a heterogeneous group of children operated on between August 2010 and May 2015. Early pleural effusions were common, but there were no long-term recurrences, said lead author Kirk R. Kanter, MD, Professor of Surgery at Emory University School of Medicine in Atlanta. There were two deaths in the group, one from ongoing liver failure in a patient with preoperative liver dysfunction and one relentless heart failure.

“Computer modeling predicts that a Y-graft is more energy efficient than the straight tube procedure that is usually used,” Kanter said. “We have followed 45 children for just over 2 years and have found that it is a safe procedure and not inferior to the standard Fontan. This is a slightly bigger operation and may not be necessary for everyone, but there are certainly patients for whom it is better.” ■

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How-To Session Offers Tips on CABG, Aortic Surgery

By nature, cardiothoracic surgeons do not rest on their laurels. They inherently look for ways to be more efficient in their surgeries and optimize outcomes.

This was clear when nearly two dozen private practice and academic surgeons helped attendees refine and improve their techniques in four common adult cardiac areas: coronary artery bypass grafting (CABG) surgery, mitral valve surgery, aortic valve surgery, and aortic surgery. They shared their expertise during Sunday's How To: Technical Tricks and Pitfalls to Simplify Cardiac Surgery Procedures, a new session this year.

Richard Lee, MD, MBA first saw surgeons perform skeletonized internal mammary artery harvests during his fellowship at the Cleveland Clinic Foundation 14 years ago. He now skeletonizes all his CABG patients.

"When you skeletonize the internal mammary artery, the blood supply to the chest is better preserved than when you take the artery with a pedicle of surrounding tissue. Some people worry about damaging the mammary more, but that is not my experience. I don't think the injury rate is any higher with skeletonized than with the pedicle," said Dr. Lee, Co-Director of the Center for Comprehensive Cardiovascular Care at St. Louis University Hospital and Vice Chair and Professor of Surgery at St. Louis University.

The real value is that a skeletonized internal mammary artery harvest better preserves blood

supply to the sternum.

"We think it may decrease the risk of sternal infection, which is useful for people who are diabetic because they have a higher risk of sternal infection," Dr. Lee said.

In videos, he showed attendees how the procedure extends the length of the internal mammary artery.

"When you skeletonize it, it tends to stretch more, and it's not confined by the surrounding tissue of a pedicle. I'd say you probably gain 25% more length," said Dr. Lee, adding that the extra length of a skeletonized bilateral mammary artery is ideal for obese patients undergoing CABG.

Wilson Y. Szeto, MD, Associate Professor of Surgery at the University of Pennsylvania School of Medicine and Chief of Cardiovascular Surgery at Penn Presbyterian Medical Center in Philadelphia, tackled complex valve-sparing surgery for aortic root aneurysms.

Demonstrating the procedure through videos, he noted that the risk of patients needing a permanent pacemaker is higher with aortic valve replacement than with repair. Beyond avoiding the need for lifelong anticoagulation measures after mechanical valve replacement or a second surgery to replace a degenerated bioprosthetic valve, both prosthetic valve types have a higher risk of endocarditis compared to a native repaired valve.

A patient with an aortic aneurysm and a relatively normal aortic valve may be a good candidate for valve-sparing root repair, said Dr.



Richard Lee, MD, MBA discusses skeletonized internal mammary artery harvests during Sunday's How To session on Technical Tricks and Pitfalls to Simplify Cardiac Surgery Procedures.

Szeto, although he cautioned against repairing severely damaged valves or ones with large perforations.

"The patient keeps his or her valve and the hemodynamics that go with that valve. That's much better than any valvular prosthesis," Dr. Szeto said.

In Aortic Centers of Excellence, valve-sparing operations have been shown to be associated with a greater than 90% freedom

from reoperation at 10 years after surgery.

"Valve-sparing root replacement is associated with a less than 3%–5% mortality in most centers. In our center, this operation is associated with a less than 1% mortality," Dr. Szeto said. "These are good results, and these repairs last. My recommendation for surgeons who are starting to do this complex procedure is to be conservative and only repair and spare valves that are almost near normal." ■

RVU Salary Model Sets Up Cardiothoracic Surgeons to Fail

Ask Michael G. Moront, MD if a Relative Value Unit-based productivity employment model is good for cardiothoracic surgeons, and he will tell you no.

For Dr. Moront, an RVU model spurs internal practice competition, discourages the addition of new partners, encourages patient

hoarding, and does not pay for services that do not fit a medical billing model, such as attending hospital meetings and spending nights sitting by a patient's bedside.

During Sunday's Practice Management Summit, he shared how he and his colleagues at Cardiothoracic Surgeons of Northwest Ohio, Promedica Health System, changed from

RVU- to salary-based employment contracts.

"Hospitals are very concerned about paying physicians fair market value. They need a number to hang their hats on, and they can calculate that number with RVUs," said Dr. Moront, Director of Cardiothoracic Surgical Research at Toledo Hospital.

"It was great when things were good. For the most part, we were pretty happy. At first, we got raises and bonuses," Dr. Moront said. "But then, hospital administrators made decisions that negatively affected 15%–18% of our cardiology referrals, and our salaries fell. The hospitals had no stake in our salaries. We as a group recognized internal group competition caused by the work RVU employment model and wanted to get off the 'wRVU treadmill.'"

The cardiothoracic surgery group had worked to grow the practice, performing more than 900 heart surgeries each year at two hospitals.

Wanting a new employment model that shared risks and addressed the problems with a wRVU-based agreement, the surgeons went to hospital administrators and were able to lock into a 5-year salary-based contract.

"We're 2 years into our new contract, and we're all happy with it," said Dr. Moront, adding that the new employment model has provided his group with a degree of security in a competitive medical environment, allowing the group to work more cohesively with the hospital. ■

“The hospitals had no stake in our salaries. We as a group recognized internal group competition caused by the work RVU employment model and wanted to get off the ‘wRVU treadmill.’”

MICHAEL G. MORONT, MD



STS MEETING BULLETIN

THE OFFICIAL NEWSPAPER OF THE STS 52ND ANNUAL MEETING

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Abstract Book Updates

The following speaker was changed from the *STS 52nd Annual Meeting Abstract Book* and the disclosure was not available at the time of publication:

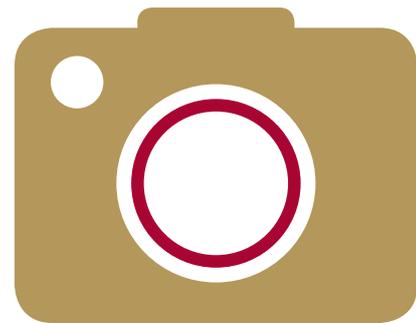
MONDAY

Basic Science Research: Adult Cardiac

Juan B. Grau, Ridgewood, NJ, will be moderating instead of T. Brett Reece. COMMERCIAL RELATIONSHIPS J. B. Grau: Consultant/Advisory Board, Cardiac Implants

Recording Policy

Recording of STS 52nd Annual Meeting sessions is strictly prohibited, except by authorized personnel. ■



WTS Celebrates 30th Anniversary

When Women in Thoracic Surgery (WTS) was formed in 1986, the American Board of Thoracic Surgery (ABTS) had certified only 37 women.

By 2015, that number was 274. This 740% increase certainly would cause the late Nina Starr Braunwald, MD, the first woman to be ABTS certified in 1961, to beam with pride.

An educational session celebrating the 30th anniversary of WTS, scheduled from 1:30 p.m. to 3:30 p.m. Monday in Room 123, will highlight the significant professional contributions by STS members who also are WTS members. Topics covered will include the untapped potential of women as leaders, significant contributions of female pioneers in congenital heart, adult cardiac, and general thoracic surgery, the changing demographics of ABTS diplomates since 1961, mentoring female and minority surgeons, and the future face of cardiothoracic surgery. A panel discussion will follow.

“With 2016 marking our organization’s 30th anniversary, we wanted to offer a special session at the STS Annual Meeting to highlight the accomplishments of women in our field,” said WTS Vice President and session co-moderator Jessica S. Donington, MD. “We want young women to recognize that a long

and successful group of women has preceded them and that women are thriving within cardiothoracic surgery. Both the WTS and the STS leadership believe that women represent an important group within cardiothoracic surgery and that young women should be encouraged to enter the field.”

Women account for nearly half of medical residents, but just 3% of all ABTS-certified surgeons are women. However, Dr. Donington noted that about 15% of those currently completing their cardiothoracic surgery fellowships are female.

Dr. Donington, who in 2004 was the 124th woman to be board-certified in cardiothoracic surgery, recently conducted a survey of the first 200 ABTS-certified female cardiothoracic surgeons. She found that beyond an increase in the number of women entering medical school, mentorship has contributed significantly to the growth of women entering the field of cardiothoracic surgery.

“I think mentors play a particularly important role when one chooses to enter a profession outside of their demographic norm. There are some really key male and female mentors who have influenced many of us. The WTS focuses a lot of effort on mentoring, and we hope we are doing as good a job as the amazing and pioneering women who



Jessica S. Donington, MD

“Both the WTS and the STS leadership believe that women represent an important group within cardiothoracic surgery and that young women should be encouraged to enter the field.”

JESSICA S. DONINGTON, MD

have gone before us,” said Dr. Donington, Associate Professor of Cardiothoracic Surgery at New York University School of Medicine and Director of Thoracic Surgery at Bellevue Hospital. ■

30TH ANNIVERSARY CELEBRATION OF WOMEN IN THORACIC SURGERY

Monday

1:30 p.m.–3:30 p.m.

Room 123

SCHEDULE

continued from page 1

General Thoracic Session: Lung Transplantation
Room 125AB

SVS @ STS: Sharing Common Ground for Cardiovascular Problems
Room 128AB

30th Anniversary Celebration of Women in Thoracic Surgery: Innovations and Contributions of WTS and STS Members
Room 123

3:30 p.m.–5:30 p.m.

International Symposium & Reception: The Ethics and Practicality of Using New Technologies to Treat Cardiothoracic Diseases in Different Parts of the World
Room 129AB

4:15 p.m.–5:15 p.m.

Surgical Motion Picture Matinee: Adult Cardiac
Room 120D

Surgical Motion Picture Matinee: Congenital
Room 122ABC

Surgical Motion Picture Matinee: General Thoracic
Room 120A

5:00 p.m.–6:30 p.m.

Scientific Posters and Wine
Room 120D Foyer

5:30 p.m.–6:25 p.m.

Business Meeting (STS Members Only)
Room 125AB

6:30 p.m.–7:30 p.m.

STS-PAC Reception
Camelback B, Sheraton Grand Phoenix

7:00 p.m.–10:30 p.m.

STS Social Event: Corona Ranch
Buses depart from official hotels

TEE Simulator Helps Facilitate Decision Making in Cardiac Surgery

The advent of 3D transesophageal echocardiography (TEE) has given cardiac surgeons the means to better communicate with cardiac anesthesiologists as they reveal valvular and other heart diseases. Learning to use this 3D technology has recently gone beyond the echo room to simulation training.

The Saturday morning STS/SCA session on Integrating Perioperative Echocardiography Into Cardiac Surgical Clinical Decision Making featured a demonstration of the HeartWorks TEE simulator by Inventive Medical.

The virtual TEE probe generates simulated ultrasound images, which are derived directly and continuously from the 3D heart model. With the standard flexion, rotation, and angulation capabilities of a multi-plane probe, students can maneuver through the manikin’s esophagus and see the underlying anatomy of the 3D heart, along with an echocardiogram generated by the 3D heart on a split computer screen.

“One of the joys I have is working with surgeons, and one of the main tools we use is echocardiography to make sure the plane flies steady. This is a fully integrated TEE simulator that helps people understand how to get images,” said co-moderator Stanton K. Sherman, MD, Director of Cardiac Anesthesia Services at Brigham and Women’s Hospital and a Professor of Anesthesia at Harvard Medical School in Boston.



Douglas Shook, MD demonstrated how transesophageal echocardiography simulation visually enhances the educational experience for residents, fellows, faculty, and staff.

Douglas Shook, MD demonstrated how TEE simulation visually enhances the educational experience for residents, fellows, faculty, and staff.

“The beauty of the simulator is that it allows you to integrate the two images—your anatomy and what you see echocardiographically—in a way that helps you better understand what you’ll see in the operating room. That ability to move your probe is one of the most powerful things you have in the operating room to understand and get a feeling for a valve pathology,” said Dr. Shook, Assistant Professor of Anesthesia at

Harvard Medical School and Program Director of the Cardiothoracic Anesthesia Fellowship and Director of Cardiac Interventional Anesthesia at Brigham and Women’s Hospital.

An added benefit is how the TEE simulator facilitates communication.

“All of us will get lost in the image if we can’t anticipate what’s about to happen. A lot of times, your echocardiographer will quickly move the probe around and tell you what you’re looking at,” Dr. Shook said. “It allows you the opportunity to have that conversation about precisely what you’re doing.” ■



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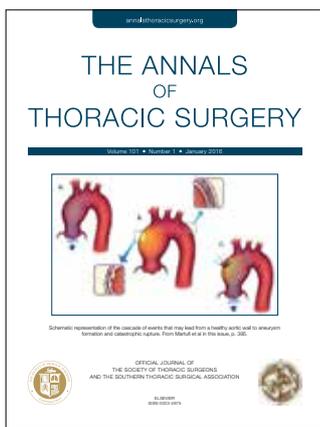
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1. Wallace DG, Cruise GM, Rhee WM, et al. A tissue sealant based on reactive multifunctional polyethylene glycol. *J Biomed.* 2001;58:545-555. 2. Hill A, Estridge TD, Maroney M, et al. Treatment of suture line bleeding with a novel synthetic surgical sealant in a canine iliac PTFE graft model. *J Biomed.* 2001;58:308-312. 3. COSEAL Surgical Sealant Instructions for Use, Hayward, CA: Baxter Healthcare Corporation. March 2009.

Opportunities Abound for *Annals* Education

Meeting attendees interested in improving their scholarly research abilities have a number of opportunities at the Annual Meeting to learn more about publishing in *The Annals of Thoracic Surgery*.

A Tuesday morning Early Riser session, *The Annals* Academy, will provide authors



with the necessary tools to turn their data into interesting and potentially practice-improving scholarly articles. The session will be held from 7:30 a.m. to 8:30 a.m. in Room 222A; unlike in previous years, you do not need to purchase a separate ticket to attend.

Annals editorial staff also will be available to assist attendees with new submissions, figure editing, journal CME, mailing address changes, and other questions in Room 121C from 8:00 a.m. to 5:00 p.m. on Monday,

9:00 a.m. to 5:00 p.m. on Tuesday, and 8:00 a.m. to 12:00 p.m. on Wednesday.

Finally, *Annals* editorial staff will host several tutorials in the Exhibit Hall. Visit Booth #938 to participate in any of the following sessions:

- **New Submissions**—Staff will help meeting presenters and other authors navigate the online process to submit their manuscripts.
- **Journal CME**—Learn how to access CME content on the *Annals* website and how these activities are developed.
- **Figure Clinic**—Authors can bring their figure files and learn how to optimally display images, including how to identify image resolution and font size, as well as how to submit files for *Annals* peer review. ■

MONDAY

10:50 a.m.–11:30 a.m.

Figure Clinic

12:30 p.m.–1:15 p.m.

Journal CME

3:30 p.m.–4:15 p.m.

New Submissions

TUESDAY

10:00 a.m.–10:45 a.m.

Figure Clinic

12:00 p.m.–1:00 p.m.

Journal CME

3:00 p.m.–3:30 p.m.

New Submissions

EACTS @ STS Delves Into Combined Aortic Valve Repair and Root Reconstruction

The nuances of various aortic valve repair procedures to treat tricuspid and bicuspid aortic valve diseases will take center stage at EACTS @ STS from 1:00 p.m. to 3:00 p.m. Tuesday in Room 126ABC.

“This session is about aortic valve repair and valve regurgitation together. It’s more complicated, more sophisticated, and more

at the University of Pennsylvania in Philadelphia.

Dr. Bavaria is co-moderator of the joint STS/European Association for Cardio-Thoracic Surgery session, along with Ruggero de Paulis, MD, Director of Cardiac Surgery at European Hospital and Associate Professor at Roma Tor Vergata University in Rome.

They called on international speakers to bring their perspectives to this emerging area of interest for cardiothoracic surgeons.

“Within the last 5 to 6 years, some of the concepts have coalesced. It is not ‘settled law’—to use Chief Justice Roberts’ words—but we’re trying to get to the point where we can use data to help figure out the best approach to an operation. That is why we’ll explore our options,” Dr. Bavaria said.

In the first of three invited talks, Dr. de Paulis will offer step-by-step methods for surgical reimplantation of a three-cusp aortic valve. The second talk, with Munir H.



Joseph E. Bavaria, MD

“It’s more complicated, more sophisticated, and more focused than either of the two alone.”

JOSEPH E. BAVARIA, MD

Boodhwani, MD, Ottawa, Canada, will provide an analysis of annulus and cusp management in valve-sparing root replacement in bicuspid valves. The third, with Himanshu J. Patel, MD, Ann Arbor, Mich., will highlight techniques and results for reimplantation for a type A dissection.

The program also will include four abstract presentations on suture annuloplasty, aortic insufficiency outcomes after elective root replacement, the long-term durability of cusp repair after a type A dissection with bicuspid and tricuspid aortic valve repairs, and the impact of preoperative aortic regurgitation on valve durability of aortic valve repair after type A valve-sparing aortic root replacement.

The session will conclude with a panel discussion. ■

Get Free Tech Support at the Tech Bar

An exciting amenity at the 2016 Annual Meeting is the Tech Bar, which is located at Booth #639 in the Exhibit Hall. Stop by for answers to all of your technical questions—experts can help you with personal and professional tasks, such as downloading and using the STS Annual Meeting Mobile App, troubleshooting issues with your smartphone or tablet, and more. A complimentary charging station also is available, and you can attend these free demos on various technology topics of interest:

- **Twitter 101** Want to share your thoughts and links with the world? Get on Twitter. The Tech Bar team will get you set up and Tweeting in minutes. (Hands-on tutorial with your device.)
- **Note Taking and Capturing Data: Let’s Go Paperless!** Are you still taking notes by hand with pen and paper? The Tech Bar experts will share options for note taking on your mobile devices with speech and handwriting recognition features.
- **5 Productivity Apps** How many days are you out of the office, yet you still need to function as if you are there?

Learn about apps that will help you with everything from productivity to travel.

- **5 Apps to Tame Your Inbox** Avoid an e-mail overload. These apps will help you deal with e-mail more effectively.
- **Wearables in the Medical World** You’ve seen the gadgets—Google Glass, smart watches, and many other devices that help track lifestyle improvements. Come hear how these technologies are changing the way health is monitored. ■

MONDAY

10:50 a.m.–11:30 a.m.

Twitter 101

12:30 p.m.–1:15 p.m.

5 Productivity Apps

3:30 p.m.–4:15 p.m.

5 Apps to Tame Your Inbox

TUESDAY

10:00 a.m.–10:45 a.m.

Note Taking and Capturing Data: Let’s Go Paperless!

12:00 p.m.–1:00 p.m.

Wearables in the Medical World

3:00 p.m.–3:30 p.m.

5 Productivity Apps

STS-PAC Reception to be Held Tonight

Join your colleagues tonight for a special reception in support of STS-PAC, the only political action committee representing the interests of cardiothoracic surgery. The reception will be held from 6:30 p.m. to 7:30 p.m. in Camelback B at the Sheraton

Grand Phoenix. Come learn about how STS-PAC is helping to support STS advocacy in Washington, DC. This event is open to US members of STS who contribute to STS-PAC in 2016. Contributions will be accepted at the door.

EACTS @ STS: AORTIC VALVE REPAIR AND AORTIC ROOT RECONSTRUCTION FOR INSUFFICIENT TRICUSPID AND BICUSPID PATHOLOGY

Tuesday

1:00 p.m.–3:00 p.m.

Room 126ABC

focused than either of the two alone,” said STS First Vice President Joseph E. Bavaria, MD, Roberts-Measey Professor of Surgery, Vice Chair of Cardiovascular Surgery, and Director of the Thoracic Aortic Surgery Program

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Early Risers Offer Something for Everyone

Kick off your Tuesday morning with one of 16 Early Riser Sessions that will be held from 7:30 a.m. to 8:30 a.m. tomorrow. New this year, Early Risers no longer require separate tickets—anyone who is registered for the Annual Meeting can attend, free of charge. Sessions will be offered on a wide variety of topics. See a complete list of sessions below, along with room locations.

Session 1: Women in Thoracic Surgery: Patient-Centered Care and Research
Room 123

Session 2: Task Force on Military Affairs: Disaster Preparedness and Mass Casualty—The Role of a Cardiothoracic Surgeon
Room 221A

Session 3: Transitioning to Retirement
Room 221B

Session 4: How to Acquire and Use Data From the STS National Database for Research
Room 221C

Session 5: *The Annals Academy*
Room 222A

Session 6: New Technologies and Controversies in Esophageal Disease
Room 128AB

Session 7: Lung Cancer Screening: Policy, Program Development, and Patient Management
Room 126ABC

Session 8: Coding and Billing in the ICU
Room 224A

Session 9: LVAD Thrombosis: Diagnosis and Management
Room 122ABC

Session 10: Tough Calls in Mitral Valve Disease
Room 131ABC

Session 11: Safe Reoperative Surgery
Room 127ABC

Session 12: Three Cases I Wish I Could Get Back
Room 125AB

Session 13: Mechanical Circulatory Support of the Single Ventricle
Room 129A

Session 14: Clinical Trials in Thoracic Surgical Oncology
Room 226C

Session 15: Update on Maintenance of Certification for the American Board of Thoracic Surgery
Room 224B

Health Policy Forum: MIPS: The New Medicare Fee-for-Service and What It Means to You
Room 226A

Note: Breakfast will not be served at the Early Riser Sessions.

Session Provides In-Depth Look at Quality Measures, Public Reporting

STS is well known for its leadership in reporting surgical outcomes, primarily stemming from the STS National Database, which was established in 1989 as an initiative for quality improvement and patient safety among cardiothoracic surgeons.

The Database continues to expand, and a Monday afternoon session will review the latest updates. “Redefining Practice Through Quality and Evidence: What’s New?” will be from 1:15 p.m. to 5:15 p.m. in Room 127ABC.

“This forum will provide a focused look at the clinical practice guidelines, national risk model development, public reporting, and quality initiatives that currently and soon will shape how we’re assessed and judged in a rapidly changing health care marketplace,” said Vinay Badhwar, MD, Director of Cardiac Surgery at the University of Pittsburgh Heart and Vascular Institute, Chair of the STS Public Reporting Task Force, and member of the STS Quality Measurement Task Force. Dr. Badhwar will co-moderate the session with Jeffrey P. Jacobs, MD, Chair of the STS Workforce on National Databases.

For Dr. Jacobs, the science of analyzing outcomes to improve the quality of cardiothoracic surgical care is rapidly evolving.

“As cardiothoracic surgeons, it’s our professional responsibility to become experts in these topics so that we can take better care of our patients. With this session, we felt we had an opportunity to really improve cardiothoracic care throughout the country by providing data and information related to outcomes, quality, patient safety, and evidence-driven medicine,” said Dr. Jacobs, Professor of Surgery at Johns Hopkins University and Chief of the Division of Cardiovascular

Surgery, Director of the Andrews/Daicoff Cardiovascular Program, and Surgical Director of the Heart Transplantation and Extracorporeal Life Support Programs at Johns Hopkins All Children’s Heart Institute, All Children’s Hospital, and Florida Hospital for Children, St. Petersburg and Orlando.

The program will begin with John D. Mitchell, MD, Chair of the STS Workforce on Evidence-Based Surgery, providing an update on STS clinical practice guidelines for total arterial revascularization, temperature management during cardiopulmonary bypass, lobectomy for lung cancer, and surgical treatment of atrial fibrillation.

After a presentation on local and regional quality collaboratives, discussion of scientific abstracts, and a talk on quality measures, there will be two public reporting presentations, including one with Dr. Badhwar.

“It’s important for STS to transparently provide information about outcomes and activities, not only for physician and hospital consumption, but also for public consumption. We consider this a moral obligation for our professional society,” said Dr. Badhwar, adding that work in adult and congenital cardiac surgery is progressing now into excellence in general thoracic surgery public reporting.

After attendees take in a presentation on STS Congenital Heart Surgery Database risk models, Dr. Jacobs will share updates on three national quality initiatives—the National

Quality Forum (NQF), the American Medical Association-convened Physician Consortium for Performance Improvement, and the Centers for Medicare & Medicaid Services Physician Compare website.



Vinay Badhwar, MD



Jeffrey P. Jacobs, MD

“It is important that STS has a seat at the table as these national quality agendas evolve,” Dr. Jacobs said. For example, he noted that the Society’s commitment to quality is exemplified in the NQF’s endorsement of multiple STS performance measures.

“STS is the steward for more NQF-endorsed measures than any other specialty-based medical professional organization,” Dr. Jacobs said.

The Chair of the AMA/Specialty Society Relative Value Scale Update Committee, Peter K. Smith, MD, Durham, N.C., will conclude the session with an update on physician reimbursement, including CPT and the RUC.

“What Peter has accomplished in advocating for our profession to assure fair strategies for assessing the value of physician work is important and legendary in our field,” Dr. Jacobs said. ■

“It’s important for STS to transparently provide information about outcomes and activities, not only for physician and hospital consumption, but also for public consumption. We consider this a moral obligation for our professional society.”

VINAY BADHWAR, MD

REDEFINING PRACTICE THROUGH QUALITY AND EVIDENCE: WHAT’S NEW?

Monday

1:15 p.m.–5:15 p.m.

Room 127ABC

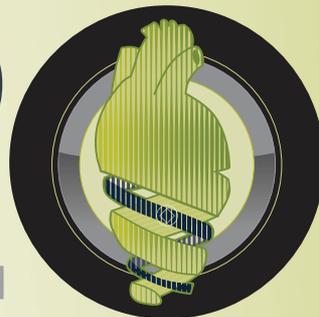


Visit STS in the Exhibit Hall

Make sure to stop by the STS booth (#523) in the Exhibit Hall to hear the latest updates from staff members. Ask about the first outcomes report from the STS/ACC TVT Registry™, plans to upgrade and expand the STS National Database, public reporting initiatives, exciting developments from the STS Research Center (now in its fifth year), and upcoming educational programs, such as the STS ECMO Symposium that will be held in March 2016.

Additionally, STS members can update their contact information and pay membership dues. Non-members can fill out an application to begin taking advantage of the many benefits of STS membership.

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Clark Papers Feature Important Outcomes Research

Since its inception in 1989, the STS National Database has generated hundreds of key clinical research papers. Three of the latest practice-changing studies—one each from the Congenital Heart Surgery Database (CHSD), the Adult Cardiac Surgery Database (ACSD), and the General Thoracic Surgery Database (GTSD)—will be presented as the 2016 Richard E. Clark Memorial Papers from 8:15 a.m. to 9:00 a.m. this morning during the General Session in Exhibit Halls 2-3.

Dr. Clark was a key leader behind the

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

As expected, the most obese patients were at significantly increased risk for surgical complications. The surprise finding was that patients who are underweight are at similarly increased risk for pulmonary and postoperative complications.

“We think that many patients who are underweight are frail, which is associated with impaired strength, reduced activity, and being easily fatigued. There also may be an association with immune system impairment. All of these factors adversely affect outcomes after lung surgery,” Dr. Williams said.

Researchers also found that patients who were

overweight or somewhat obese had fewer postoperative and pulmonary complications compared to patients of normal weight, although the reason is unclear.

NEW CLINICAL RISK FACTOR SCORE DEVELOPED FOR ISOLATED TRICUSPID VALVE SURGERY

The Clark Paper for Adult Cardiac Surgery showcases the development of a novel risk prediction score for tricuspid valve (TV) surgery. The literature shows consistently high mortality from TV surgery—about 8%–10%—but this is the first clinical risk score to successfully predict mortality and major morbidity using preoperative patient data.



Damien J. LaPar, MD, MSc

Lead author Damien J. LaPar, MD, MSc, Cardiothoracic Surgery Fellow at the University of Virginia in Charlottesville, will

present “Development of a Risk Prediction Model and Clinical Risk Score for Isolated Tricuspid Valve Surgery: Analysis of the STS

Adult Cardiac Surgery Database.”

Researchers analyzed data within the ACSD on more than 2,000 isolated TV repair and replacement surgeries performed for any reason across 49 hospitals. More than 90% of US programs that perform adult cardiac surgery participate in the ACSD. To date, the ACSD has more than 5.8 million surgical records.

This research identified risk scores for both mortality and major morbidity associated with 13 patient factors, such as age, sex, specific comorbidities, New York Heart Association Functional Classification, reoperation, and urgent or emergency status. A simple clinical risk score of 0–10 based on the sum of numerical scores for each factor was strongly associated with incremental increases in predicted morbidity and mortality. The predicted mortality risk ranged from 2% to 34% and predicted major morbidity risk ranged from 3% to 71%.

This is the first successful clinical risk score to be developed for TV surgery. Surgeons may be able to use this score to better identify candidates for TV surgery, as well as to counsel patients and guide perioperative management.

PRESENCE OF NON-CARDIAC AND GENETIC ABNORMALITIES VARIES DRAMATICALLY IN CHD

The Clark Paper for Congenital Heart Disease will explore the prevalence of genetic abnormalities across various types of congenital heart disease.

“Neonates and infants with congenital heart disease have had improved outcomes with regard to morbidity and mortality over the past half century,” said Angira Patel, MD, MPH, Pediatric Cardiologist and Assistant Professor at the Northwestern University Feinberg School of Medicine in Chicago. “We know that when you have a congenital heart disease, the coexistence of another abnormality—whether it is a noncardiac congenital anatomic abnormality, a chromosomal abnormality, or a syndrome—can affect clinical outcomes.

Understanding the prevalence of coexisting conditions across congenital heart disease diagnostic groups has been a challenging area of research.”

Dr. Patel is the lead author of “Prevalence of Noncardiac and Genetic Abnormalities in Neonates Undergoing Cardiac Surgery: Analysis of the STS Congenital Heart Surgery Database.”

Researchers analyzed

the CHSD for presence of an associated abnormality in neonates who underwent index cardiac operations between January 2010 and December 2013 at centers across North

America. The cohort of more than 15,000 neonates was divided into 10 diagnostic groups based on each infant’s most complex cardiac anomaly or condition.



Angira Patel, MD, MPH

Researchers then queried the CHSD to determine the prevalence and

distribution of non-cardiac anomalies, genetic anomalies, and syndromes across each of the diagnostic groups. The CHSD is the largest database in North America dealing with cardiac malformations. Since its launch in 2002, the CHSD has collected more than 373,000 congenital heart surgery procedure records. The prevalence of these anomalies varied dramatically across different diagnostic groups, ranging from 4% to 59%.

“This is the first large database study in the contemporary era across multiple centers that evaluates the distribution of these anomalies across different cardiac malformations,” Dr. Patel said. “We know that the association of these anomalies has an impact on cardiac outcomes. Understanding the prevalence across diagnostic groups may be useful for patient counseling, recommendations for screening for anomalies and genetic disorders, and perioperative management.” ■

RICHARD E. CLARK MEMORIAL PAPERS

Monday

8:15 a.m.–9:00 a.m.

Exhibit Halls 2-3

The surprise finding was that patients who are underweight are at similarly increased risk for pulmonary and postoperative complications.

creation of the Database, serving as Chair of the STS Ad Hoc Committee to Develop a National Database for Thoracic Surgery.

UNDERWEIGHT AND SEVERE OBESITY SIMILARLY DANGEROUS FOR LUNG RESECTION

Body mass index (BMI) has long been used to evaluate risk and stratify patients for lung resection due to lung cancer. And while obesity is commonly recognized as a risk factor, being underweight is emerging as a largely underappreciated source of surgical risk.

Researchers queried the GTSD to find more than 41,000 patients who underwent anatomic lung resection for cancer between 2009 and 2014. The patients were grouped by BMI: underweight, less than 18.5 kg/m²; normal, 18.5–24.9; overweight, 25.0–29.9; obese I, 30.0–34.9; obese II, 35.0–39.9; and obese III, 40.0 and higher. With more than 435,000 thoracic surgery procedure records and more than 800 participating surgeons, the GTSD is particularly useful for identifying under-recognized associations.

Lead author Trevor Williams, MD, Cardiothoracic Surgery Resident at The University of Chicago, will present the 2016

LOOKING TO THE FUTURE



The Society awarded 60 Looking to the Future scholarships to medical students and general surgery residents interested in a career in cardiothoracic surgery. The scholarship program is celebrating its 10th anniversary this year.

Attend the STS/CTSNet Career Fair

Recruiters will be available to talk with you about career opportunities. The Career Fair will be held in the Exhibit Hall.

MONDAY, JANUARY 25

9:00 a.m.–4:30 p.m.

TUESDAY, JANUARY 26

9:00 a.m.–3:30 p.m.

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Hear from Experts at Industry-Sponsored Satellite Activities

Satellite activities are programs offered by industry and held in conjunction with the STS 52nd Annual Meeting. They are not developed or sponsored by STS.

TUESDAY

Medtronic

Electromagnetic Navigation Bronchoscopy: Expanding Options in Thoracic Oncology

6:00 p.m.–8:00 p.m.

Paradise Valley, Sheraton Grand Phoenix, 340 N. Third Street

Medtronic

Complex Endovascular Aortic Repair: The Role of the CT Surgeon Today and Tomorrow

6:00 p.m.–9:00 p.m.

North Mountain, Sheraton Grand Phoenix, 340 N. Third Street

Question of the Day

What did you learn today that you will take home with you?



“I think there is a lot of innovation and new thinking among my colleagues and companies, and I’m looking forward to a great year of adopting new practices.”

I-Wen Wang, MD, PhD
Indiana University
Indianapolis



“I learned how to reduce pulmonary hypertension in patients whose hemodynamic values don’t allow them to have a heart transplant.”

Lissette Aliaga Sanchez, MD
Rebagliati Hospital
Lima, Peru



“I think the most important lesson I’ve learned is that in order for us to continue to succeed with new technologies, we have to make sure we form collaborative teams with our cardiology colleagues. That’s imperative.”

Raymond Singer, MD
Lehigh Valley Health Network
Allentown, Penn.



“Work ethic and old-fashioned values are probably one of the most important things about training.”

Caitlin Brown
Medical student
Oregon Health and Science University
Portland



“I was in a session on reoperation, and I learned a lot of interesting techniques to get back into the chest safely. I was one of the speakers, but I learned a lot from the other talks.”

Duke Cameron, MD
Johns Hopkins Medicine
Baltimore



“I’ve learned the value of the heart team approach to treat valvular heart disease.”

Tamim Antaki, MD
Union Hospital
Terre Haute, Ind.

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The Patient Guide to Heart, Lung, and Esophageal Surgery

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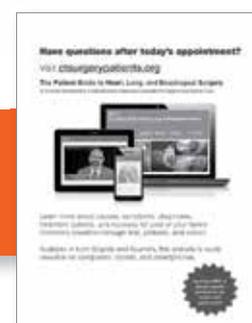


Available in both English and Spanish, this website is easily viewable on computers, tablets, and smartphones.

All information has been reviewed by STS members and is divided into the following sections:

- Adult Heart Disease
- Pediatric and Congenital Heart Disease
- Lung, Esophageal, and Other Chest Diseases
- Heart and Lung Transplantation
- Before, During, and After Surgery

Visit www.sts.org/patient-information to download a printable PDF for referring your patients to this website.



The Society of Thoracic Surgeons

TECH-CON

continued from page 1

stent valve for pediatric patients, Dr. Bolling noted that the stent would have a higher potential for thrombosis “because you have a lot of polyurethane touching polyurethane,” but Dr. Molena was intrigued.

“It’s really early stage, but I could buy the idea. I’m a mother. I love the idea of my kid not having to redo surgery. The concept is a good concept. We’re in a very early stage of development. We’re going need a lot of technology involved with this to really make it work, but I think I’m in it,” she said.

Then Dr. Roselli joked with Dr. Molena, “You’re in the coral reef. I’m in the deep waters.”

John A. Eleftheriades, MD, New Haven, Conn., pitched a cooling catheter for spinal cord protection. He said that experiments to date, carried out in a sheep model, have shown the catheter accomplishes substantial cooling of the spinal cord (up to 7°C) at systemic normothermia with no evidence of histologic injury to the spinal cord and no physical injury or limitation in 1-week survival experiments. Also, in survival investigations, 19 of 19 sheep were neurologically intact in the long term. Future goals include performing a first-in-man safety trial in Europe and continuing to develop a brain cooling catheter.

Dr. Eleftheriades’s presentation brought across-the-panel interest, and 73% of the

audience responded with yes, definitely in.

Tech-Con, which kicked off on Saturday, also featured numerous talks in adult cardiac and general thoracic tracks, exhibits where companies showcased their products and services, and a Saturday evening reception.

“Tech-Con is completely different from many past years with no CME, enabling us to talk about new devices and approaches.”

GORAV AILAWADI, MD

Among the Saturday Adult Cardiac Track I mitral valve technology discussions were ones on NeoChord and Valtech, and the transcatheter mitral valve replacement presentations included the CardiAQ Valve, Neovasc Tiara Valve, and Tendyne. Saturday afternoon’s General Thoracic Track II: Advances in Robotic Tools and Technology gave attendees insights on robotic technology in development, emerging robotic tools, new robotic platforms, and new haptic technology for robotic surgery. Sunday’s General Thoracic Track III focused on the operating room of the future in several discussions, including apps in practice, thoracic hybrid operating room of the future, and holographic projection. ■

Bid on an NCAA® Final Four® Trip of a Lifetime!

The Thoracic Surgery Foundation for Research and Education (TSFRE) is auctioning two NCAA Final Four packages for this spring in Houston.

Each package includes:

- Two tickets to the NCAA Final Four games on Saturday, April 2, 2016
- Two tickets to the championship game on Monday, April 4, 2016
- Two airline tickets and a 4-night hotel stay

The estimated retail value of each package is \$4,800, and bidding starts at \$5,000. Any amount you pay above the retail



value is tax-deductible to the extent permitted by law. All proceeds will support TSFRE’s cardiothoracic research and



education initiatives.

Place your bid at www.bit.ly/1mLA36P or by visiting the TSFRE Booth #731 in the Exhibit Hall. Winners will be announced on Wednesday, January 27 (you do not need to be present to win).

NCAA and FINAL FOUR are registered trademarks of the National Collegiate Athletic Association.

Attend the STS Social Event Tonight



Photo credit: Corona Ranch

Join your colleagues tonight from 7:00 p.m. to 10:30 p.m. for an evening of mariachi music, delicious food, and ice-cold margaritas at Corona Ranch, nestled in the shadows of nearby mountains. You can compete against fellow attendees in “cowboy games” and get a front-row seat for an exciting rodeo that will incorporate bronco and bull riding, high-speed horse maneuvers, and trick roping. Don’t miss this opportunity to relax and have fun in an Old Mexico environment. (Please note that this is an outdoor event and the desert can get chilly at night, so please dress accordingly.) You can purchase a ticket for the social event at Registration on the lower level of the convention center. ■

THANK YOU!

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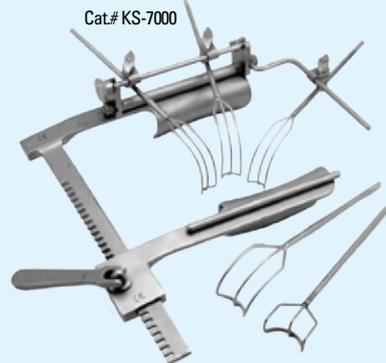
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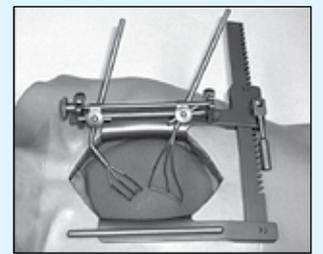
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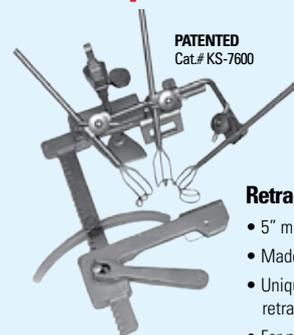
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STS Annual Meeting

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The Weekend in Photos

The STS 52nd Annual Meeting got off to an exciting start this past weekend, with STS/AATS Tech-Con sessions revealing the newest technology coming down the pipeline and a number of symposia in adult cardiac, general thoracic, and congenital heart surgery. Monday's highlights include the Presidential Address and the top scientific abstracts.



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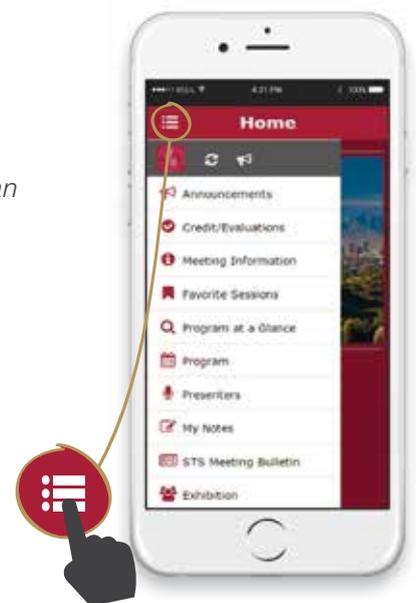
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A&E Medical Corporation 211
Durham, NC

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 231
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.

Abiomed Inc. 844
Danvers, MA
 **Acelity (KCI, LifeCell, Systagenix)** 646
San Antonio, TX
ACUTE Innovations 1023
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 1023 to learn about ACUTE's cutting-edge products: RibLoc® U Plus Chest Wall Plating System and AcuTie® II Sternum Closure System.

 **Admedus** 320
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.

Advanced Cardiothoracic Consultants, LLC 932
Indianapolis, IN

Utilizing over 40 years of clinical expertise in cardiothoracic, thoracic transplant/organ replacement, and advanced heart failure, ACTC can evaluate financial and clinical aspects for programs to increase efficiencies. Whether a new or well-established program, hospital, or insurer, let ACTC assist in maintaining financial viability and sustaining growth in today's challenging health care market.

Aesculap 314
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 1121
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 1,325 of the world's foremost cardiothoracic surgeons. www.aats.org

AtriCure Inc 915
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.

 **Baxter Healthcare** 210
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.

 **Baylis Medical** 551
Mississauga, Canada
Baylor Scott & White 100
Tempe, AZ
BD (formerly CareFusion) 1035
San Diego, CA

BD is a global corporation helping clinicians and hospitals measurably improve patient care. The PleurX® Catheter System allows patients to manage symptoms associated with recurrent pleural effusions and malignant ascites at home, reducing length of stay and cost of care while improving quality of life. Visit BD at Booth 1035 to learn more.

Berlin Heart Inc 1039
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® 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 Food and Drug Administration.

BFW Inc 438
Louisville, KY

BFW is known as a worldwide technological leader in surgical illumination and headlight video imaging. Visit Booth 438 to experience the foremost innovations in portable LED headlights offering intense, clean, bright white light and the new Hatteras™ LED light source—unmatched intense fiberoptic illumination for headlights and instrumentation.

 **Biodesix, Inc.** 650
Boulder, CO
 **Bolton Medical** 1032
Sunrise, FL

Bolton Medical is a subsidiary of the WerfenLife Company, a global company that manufactures and distributes medical diagnostic solutions and medical devices worldwide. Bolton's vision is to become the leading provider of endovascular solutions for aortic disease. Bolton develops, manufactures, and distributes innovative, high-quality products solely focused on the aorta.

 **Bovie Medical Corporation** 540
Clearwater, FL

Bovie® Medical will be featuring J-Plasma®—the helium-based gas plasma technology that is transforming the way surgeries are performed. J-Plasma works with precision and versatility across open and laparoscopic procedures. Bovie also will exhibit its complete line of electrosurgical products.

 **C Change Surgical** 450
Winston-Salem, NC

The SurgiSLUSH™ System creates sterile slush inside secure, reusable, sterile containers with no exposure to costly, vulnerable slush drapes that can tear or perforate, unintentionally contaminating your sterile slush. Users eliminate long exposure to open basins and the ambient, non-sterile environment prior to use.

 **Cancer Treatment Centers of America** 443
Goodyear, AZ

Cancer Treatment Centers of America®, Inc (CTCA) is a national network of five hospitals focusing on the treatment of complex and advanced stage cancer. CTCA offers a comprehensive, fully integrative approach to cancer treatment and serves patients from all 50 states at facilities located in Atlanta, Chicago, Philadelphia, Phoenix, and Tulsa.

CardiacAssist, Inc 449
Pittsburgh, PA

CardiacAssist, inventor of the TandemHeart®

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™ veno-venous dual lumen cannula. Stop by the booth to learn more.

Cardica Inc 630
Redwood City, CA
 **Christus Health** 1040
Irving, TX
Cook Medical 130
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 539
Roswell, GA

CorMatrix® Cardiovascular markets its ECM® Bioscaffold devices for vascular repair, pericardial repair and reconstruction, cardiac tissue repair, and CanGaroo ECM Envelope and is currently conducting preclinical studies to evaluate future applications in other cardiac and vascular applications.

CryoLife 321
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 341
Philippi, WV

CT Assist is a managed service provider of cost-effective cardiothoracic surgery advanced practitioners that deliver quality care. CT Assist provides workforce management solutions from long-term to locum tenens and vacation coverage. The company is a physician assistant-owned nationwide employer of talented and experienced cardiothoracic physician assistants and nurse practitioners.

CTSNet 531
Chicago, IL

CTSNet (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, a BARD Company 831
Warwick, RI

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

 **De Soutter Medical** 1101
Mooreville, NC
Designs for Vision 1001
Ronkonkoma, NY

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

DGMR/Global Intercepts 1102
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 and test product development directions, device concepts, product positioning,

messaging, and brand identity. Research studies are initiated before, during, and after any US/international conference.

Domain Surgical 350
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.

Eastern Maine Medical Center 106
Bangor, ME
EBM 131
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 grafting and vascular anastomosis worldwide. Skill assessment is based on rapid CFD technology and validated silicone vascular model.

 **Edwards Lifesciences** 503
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.

Elsevier 938
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.elsevier.com

 **EndoEvolution, LLC** 124
Raynham, MA

EndoEvolution, LLC is the leading innovator in advanced automated suturing device technology. The Endo360 MIS suturing device is the only reusable automated device with wristed articulation, using a curved needle that precisely replicates the traditional method of suturing used by surgeons to place stitches and tie intracorporeal knots.

Enova Illumination 125
St. Paul, MN

NEW from Enova Illumination: Cyclops XLT-225 LED surgical headlight system. The world's brightest LED surgical headlight designed for deep cavity surgery HD Camera system with edit-free operation, cloud storage, and instant sharing.

Essential Pharmaceuticals 206
Ewing, NJ

Supporting the preservation and growth of human systems. From the cell to the entire organ, Essential Pharmaceuticals looks to advance medical treatments and the research that creates new medical treatments. Originally developed for cardiac surgery, Custodiol®HTK offers superior convenience, water-like viscosity, and no need for additives or filters, which makes it a preferred solution for many transplant centers.

ETHICON/ DePuy Synthes CMF 401
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, or follow Ethicon on Twitter @Ethicon.

European Association for Cardiothoracic Surgery (EACTS) 830
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 car-

ANNUAL MEETING EXHIBITORS continued on next page

2016 ANNUAL MEETING EXHIBITORS cont.

NEW EXHIBITORS

MEETING BULLETIN ADVERTISERS

diovascular and thoracic physiology and therapy and to correlate and disseminate the useful results thereof. Visit Booth 830 for more information.

European Society of Thoracic Surgeons **834**
Exeter, United Kingdom

ESTS is the largest international general thoracic surgery organization with more than 1,500 members from all continents. The society's mission is to improve quality in our specialty: from clinical and surgical management of patients to education, training, and credentialing of thoracic surgeons worldwide. The 24th European Conference on General Thoracic Surgery will be held on 29 May-1 June 2016, in Istanbul, Turkey.

Fehling Surgical **610**
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. **BREAKING NEWS:** See the Reusable Papillary Muscle Exposure Device and Atrial Lift System!

FUJIFILM Medical Systems U.S.A., Inc. **1042**
Wayne, NJ

The Endoscopy Division of FUJIFILM Medical Systems U.S.A., Inc. supplies high-quality, technologically advanced FUJIFILM brand endoscopes to the medical market. For more information, please visit www.fujifilmendoscopy.com

G+N Medical Inc. **550**
Middletown, NJ

General Cardiac Tech/Heart Hugger **1019**
San Jose, CA

The 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 open heart surgery, thoracotomy, fractured rib, and other chest trauma patients.

Genesee BioMedical **214**
Denver, CO

Design Beyond Standard. Genesee BioMedical, Inc provides unique devices for cardiothoracic surgery, including a bovine pericardium tissue patch, sternal/thoracic valve retractors, instruments for minimally invasive aortic, transcatheter aortic valve implantation, and robotic surgeries, coronary graft markers, suture guards, retraction clips, and myocardial needles. www.geneseebiomedical.com

Gore & Associates **631**
Flagstaff, AZ

The Gore Medical Products Division has provided creative solutions to medical problems for three decades. More than 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.

Grifols **943**
Tustin, CA

HeartWare **331**
Framingham, MA

HeartWare is dedicated to delivering safe, high-performing, and 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.

Heart Hospital Baylor Plano, The **647**
Plano, TX

Heart Valve Society, The (HVS) **843**
Beverly, MA

The HVS held its inaugural meeting in May 2015 at the Grimaldi Forum in Monte Carlo, Monaco, with more than 430 medical professionals and 80 industry partners in attendance. Whether you are a cardiologist, surgeon, researcher, or another member of the crucial valve disease treatment team, the HVS welcomes you to become a part of something very unique. Membership is available online.

Hospital Corporation of America **107**
Ft Lauderdale, FL

HCA-affiliated facilities 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.

INFINITE TRADING INC. **447**
Las Vegas, NV

Inion Inc. **941**
Weston, FL

Intermountain Healthcare **248**
Salt Lake City, UT

The Cardiovascular and Thoracic Surgery Core Curriculum Review is a series of intensive lectures in cardiovascular and thoracic surgery. This course is intended for surgeons preparing for the American Board of Thoracic Surgery certification examination. Please visit corereview.org for more information.

International Biophysics Corp **1038**
Austin, TX

SternaSafe is an active, adjustable-stability sternum support brace that gives patients hands-free mobility, enhancing patient recovery after sternotomy, coronary artery bypass graft surgery, thoracotomy, lung operations, and rib fractures. SternaSafe provides sternotomy support while coughing, standing/sitting, and straining by supporting the chest and sternum.

International Society for Minimally Invasive Cardiothoracic Surgery (ISMICS) **832**
Beverly, MA

ISMICS: Innovation, technologies, and techniques in cardiothoracic and cardiovascular/vascular surgery. 2016 ISMICS Annual Scientific Meeting, 15-18 June 2016, Fairmont The Queen Elizabeth, Montreal, Canada. www.ismics.org.

Intuitive Surgical **311**
Sunnyvale, CA

Intuitive Surgical, Inc. designs, manufactures, and

2016 EXHIBITOR MAP

STS Exhibit Hall Hours

The STS Exhibit Hall is located in Exhibit Halls 4-5.

Monday
9:00 a.m.-4:30 p.m.
Tuesday
9:00 a.m.-3:30 p.m.

LEARNING LAB
LARGE THEATER
028



2016 ANNUAL MEETING EXHIBITORS cont. NEW EXHIBITORS MEETING BULLETIN ADVERTISERS

distributes the da Vinci® Surgical System, technology designed to allow surgeons to perform many complex procedures minimally invasively.

IsoRay Medical 934
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 based 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 121
Winona Lake, IN
 JACE Medical pioneered the world's first rigid sternal closure system applied presternotomy: the Grand Pre®. JACE Medical is a company and culture committed to creating innovative, transformational technologies that facilitate optimal patient treatment, recovery, and future wellness. Visit Booth 121 and see how the company thinks outside the paradox. Get more information at JACEMED.com.

Just Co, Ltd 742
Torrance, CA
 Only a dedicated plating company can provide "the strongest diamond plating" technology. The company can designate the plated layer, which anchors the diamond base on purpose. Its technology is very unique and popular to those in the medical field in need of microsurgery instruments and endoscope tips.

Kadlec Regional Medical Center 104
Richland, WA

Kapp Surgical 616
Cleveland, OH
 Kapp Surgical is a custom design shop that designs surgical instruments and implants, manufactures them, and sells them, as well as distributes domestically and internationally. Kapp's exclusive products include the Cosgrove Heart Retractor, Strip T's surgical organizer, and countless surgical devices, all FDA-approved with several pending approval.

Karl Storz 546
El Segundo, CA
 Karl Storz, a leader in endoscopic equipment and instruments, offers solutions for video-assisted thoracic surgery. Its EndoCAMEleon® Laparoscope enables surgeons to adjust the viewing direction from 0° to 120° throughout procedures. And its Video Mediastinoscope with DCI®-D1 Camera allows video recording while working under direct vision for documentation and teaching.

Kinamed Inc. 549
Camarillo, CA

KLS Martin 739
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. 243
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.

Lexion Medical 247
Macon, GA

LifeNet Health 1031
Virginia Beach, VA
 LifeNet Health helps save lives, restore health, and give hope to 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.

LivaNova (formerly Sorin Group) 201
Arvada, CO
 LivaNova 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 minimally invasive cardiac surgery instruments. For more information, visit www.livanova.com.

LoupeCam 643
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 that allows for hands-free control of the camera.

LSI Solutions 101
Victor, NY
 COR-KNOT® delivers superior titanium suture fastening technology worldwide. COR-KNOT reduces cardiopulmonary bypass time and cross clamp time, reducing overall OR time. Find out how COR-KNOT can benefit your OR by visiting Booth 101.

MAQUET 901
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.

Mayo Clinic 108 & 440
Rochester, MN
 Mayo Clinic surgeons are on the leading edge of treating cardiovascular and thoracic conditions using the latest innovations and techniques. They are part of an integrated, multidisciplinary team of doctors and health care professionals who provide individualized care for each patient.

Med Alliance Solutions 611
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 and operational partner to Michigan-based Surge Cardiovascular for open heart surgical products.

Medela 923
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 909
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 713
Minneapolis, MN
 As a global leader in medical technology, services, and solutions, Medtronic improves the lives and health of millions of people each year. The company uses its deep clinical, therapeutic, and economic expertise to address the complex challenges faced by health care systems today. Let's take health care Further, Together. Learn more at [Medtronic.com](http://www.Medtronic.com).

Microsurgery Instruments, Inc. 122
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.

Myriad Genetic Laboratories, Inc. 239
Salt Lake City, UT
 Myriad Genetics is a leading molecular diagnostic company dedicated to making a difference in patients' 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 614
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 7,500 surgeons in 77 countries collect his fine works of art. His works are on display at the Smithsonian Institute and many medical universities throughout the world. Introducing MIRACLE OF LIFE II at the 2016 meeting.

nContact 217
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. 1104
Eden Prairie, MN
 NeoChord, a U.S.A. 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.

Neu Wave Medical 446
Madison, WI
 Neu Wave Medical Inc. has the first and only Intelligent Ablation System for microwave ablation of soft tissue lesions with a total solution for ablating lesions of all shapes and sizes for consistency and control. The computer-controlled platform with Ablation Confirmation software, an integrated in-procedure confirmation, assists physicians with proper probe placement and confirms success of procedures.

Northeast Provider Solutions 112
Valhalla, NY

Northwestern Medicine 102
Winfield, IL

Olympus America Inc 1130
Center Valley, PA
 Olympus is a precision technology leader in designing and delivering imaging solutions in health care, life science, and photography. Through its health care solutions, Olympus aims to improve procedural techniques and outcomes and enhance the quality of life for patients.

On-X Life Technologies, Inc. 617
Austin, TX
 On-X Life Technologies is proud to announce FDA approval to reduce INR to 1.5-2.0 for On-X® Aortic Heart Valve patients starting 3 months after surgery. Chord-X® ePTFE suture for mitral repair is now available in an innovative Pre-Measured Loops system.

Ornim 343
Foxboro, MA
 Ornim specializes in research, development, and distribution of noninvasive patient monitors specializing in the field of tissue and cerebral blood flow. Its bedside product, c-FLOW™, is based on the patented UTLight™ technology designed to provide physicians with unique monitoring solutions that are imperative to individualized and personalized patient care.

OSF HealthCare System 110
Peoria, IL

Oxford University Press 213
New York, NY
 Visit the Oxford University Press stand to browse the company's prestigious surgery books and journals, including the publications of the European Association for Cardio-Thoracic Surgery.

ANNUAL MEETING EXHIBITORS continued on next page

Learning Opportunities Available in the Exhibit Hall

Exhibiting companies and others will present talks and demonstrations in the new Learning Labs in the Exhibit Hall. The Large Theater is located to the far left of the 100 Aisle and the Small Theater is located toward the back of the 900 Aisle.

MONDAY

MAQUET
 Preventing POAF by Reducing Retained Blood
10:50 a.m.–11:20 a.m.
Small Theater

Cook Medical
 Lunch & Learn: Hands-On and Didactics of the New Low-Profile Zenith Alpha Thoracic Device
12:30 p.m.–1:00 p.m.
Small Theater

Ethicon
 Practical Skills in Cardiothoracic Surgery
3:30 p.m.–4:00 p.m.
Small Theater

Joint Council on Thoracic Surgery Education, Inc.
 Jeopardy Championship – Round 2
3:30 p.m.–4:00 p.m.
Large Theater

Review STS University Lecture Material Online

In order to maximize the hands-on learning time during STS University, attendees are strongly encouraged to access the corresponding online video lectures prior to Wednesday morning. You can access the lectures at the computer stations located near the entrance to the Exhibit Hall and near Registration on the Lower Level of the Convention Center. You also can access them from your own computer or handheld device by visiting www.sts.org/annualmeeting or by using the STS Annual Meeting Mobile App. ■

Join the Conversation

Like the STS Facebook page at www.facebook.com/societyofthoracicsurgeons and follow STS on Twitter at @STS_CTSurgery for information about Phoenix and the Annual Meeting. If you tweet about the Annual Meeting, be sure to use the hashtag #STS2016.

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.



2016 ANNUAL MEETING EXHIBITORS cont.

NEW EXHIBITORS

MEETING BULLETIN ADVERTISERS

Collect your free sample copies of the *European Journal of Cardio-Thoracic Surgery* and *Interactive Cardiovascular and Thoracic Surgery*, and discover procedures from the *Multimedia Manual of Cardio-Thoracic Surgery*.

Pinnacle Biologics 648

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

Providence Health & Services 347

Portland, OR
Providence Health & Services is affiliated with Swedish Health Services, Pacific Medical Centers, and Kadlec. Together, its organizations include more than 5,000 employed providers, 35 medical centers, and more than 600 clinics in Alaska, California, Montana, Oregon, and Washington. The company is currently recruiting providers in nearly all medical specialties throughout the West. providence.org/providerjobs

QED Medical 342

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

Quest Medical Inc. 931

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® 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 735

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. Come learn about regional activities and initiatives!

rEVO Biologics 747

Framingham, MA
rEVO Biologics, Inc. is a commercial-stage biopharmaceutical company focused on the development and commercialization of specialty therapeutics to address unmet medical needs in patients with rare, life-threatening conditions. The company's lead product, ATryn, is the first and only plasma-free antithrombin concentrate.

Rose Micro Solutions 930

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 930, visit www.rosemicrosolutions.com, or call (716) 608-0009.

RTI Surgical 849

Alachua, FL
RTI Surgical™ is a leading global surgical implant company providing surgeons with safe biologic, metal, and synthetic implants. RTI provides surgeons with metal, cable, and plating systems, as well as biologic options for cardiothoracic

and trauma surgical procedures. Cardiothoracic implants offer increased stability and flexibility for anterior chest wall fixation for all types of closures.

Rultract/Pemco Inc. 839

Cleveland, OH
Pemco has designed and manufactured precision surgical instruments for the cardiovascular field. The company has documented that 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.

Scanlan International 511

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 Medias-tinoscopy Biopsy Forceps, new shorter VATS instruments, uniportal VATS instruments, MEMORY Dilators/Vessel Probes, LEGACY Needle Holders and Forceps, and single-use products.

SheerVision 242

Rolling Hills Estates, CA
SheerVision designs, develops, and manufactures loupe and headlight systems that enhance vision through exceptional visual acuity and powerful illumination. SheerVision also is the exclusive provider of Under Armour Performance Eyewear. Also on display is the new loupe-mounted, hands-free HD video camera allowing you to "Shoot. Store. Share." with state-of-the-art technology.

Society of Thoracic Surgeons, The 523

Chicago, IL
The Society of Thoracic Surgeons represents more than 7,100 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 renowned STS National Database™, 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 Booth 523 or visit www.sts.org to learn more.

Sontec Instruments 310

Centennial, CO
Sontec offers headlamps, 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 Booth 310.

Spectranetics 349

Colorado Springs, CO
SPNC develops, manufactures, markets, and distributes single-use medical devices used in minimally invasive procedures within the cardiovascular system. The Lead Management (LM) product line includes excimer laser sheaths, dilator sheaths, mechanical sheaths, and accessories for the removal of pacemaker and defibrillator cardiac leads.

Spiration, Inc. 632

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 701

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 by creating cost-effective medical technologies that save and improve lives of patients globally. Clinical focus areas include cardiac rhythm management, atrial fibrillation, cardiovascular, and neuromodulation. Visit sjm.com.

STS/CTSNet Career Fair 100 Aisle

Make sure to stop by the STS/CTSNet Career Fair, which will give you the chance to meet face-to-face with top employers. Recruiters will be available to talk with you about career opportunities. The Career Fair will be open during all Exhibit Hall hours.

Surgical PA Consultants 339

Lynchburg, VA
Since 1991, Surgical PA Consultants has provided professional recruiting and advertising services for cardiac surgical programs seeking physician assistants at a reasonable fee. The company has been clinically active in cardiac surgery and related PA professional societies for 40 years, developing the resources that result in successfully finding qualified PA candidates for cardiothoracic surgical practices.

SurgiPrice 123

Rockville, MD

SurgiTel/General Scientific Corp 1030

Ann Arbor, MI
SurgiTel is the manufacturer of premium loupes and headlamps sold around the world. Holding a variety of patents, SurgiTel is always on the forefront of vision and ergonomics.

SynCardia Systems, Inc. 1003

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, 50 cc TAH-t, and destination therapy.

Tech Bar 639

Get free technical assistance from the Tech Bar, which is similar to Apple's Genius Bar and will provide assistance from three subject matter experts, live demos on technology topics of interest, and a charging station. You can get help with personal and professional issues related to your tablets, mobile devices, apps, e-mail, and more—throughout the entire exhibition.

Terumo 801

Ann Arbor, MI
Vascutek, a Terumo company, will display an extensive range of sealed woven and knitted polyester grafts for peripheral, abdominal, and cardiothoracic surgery. Terumo will display the VirtuoSaph® Plus Endoscopic Vessel Harvesting System, Beating Heart, and Surgical Stabilization products, and Terumo® Perfusion Products.

Thompson Surgical 441

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) 731

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 thoracic surgery in the United States, and its research and educational initiatives support the broad spectrum of thoracic surgery.

Thoramet Surgical 935

Rutherford, NJ
Thoramet Surgical Products sells the most complete line of VATS instruments available. Produced in the USA in the company's own facilities, they are the surgeon's choice. Come to Booth 935 to see their unique versatility. Thoramet has the feel you want, the actuation you need, and the patterns you demand.

Thoratec Corporation 730

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 745

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 flowprobes can help improve your outcomes.

University of Pittsburgh Medical Center (UPMC) 348

Pittsburgh, PA

VasoPrep 132

Morristown, NJ

Veran Medical Technologies 1100

St. Louis, MO

Virtual Pediatric Systems, LLC 246

Los Angeles, CA
With more than 100,000 ICU cases, VPS Cardiac bridges the critical care continuum by providing data collection, analysis, and interpretation to improve critical care. Benchmarking takes place among cardiac, pediatric, and mixed units and includes the Pediatric Index of Cardiac Surgical Intensive Care Mortality (PICSIM), a novel risk-adjusted score for the pediatric cardiac surgical population. Please visit VPS at Booth 246 to learn more about the impact the company is making.

VitaHEAT Medical 215

Rolling Meadows, IL
Visit VitaHEAT Medical (Booth 215) to see the next generation in patient warming: an underbody mattress that is safe, effective, easy to use, and cost efficient. It is battery operated for portability with an AC power option. Finally, one versatile system that meets all your patient warming needs.

Vitalcor, Inc./Applied Fiberoptics 533

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 431

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

Wexler Surgical, Inc. 1009

Houston, TX
Wexler Surgical designs and manufactures a variety of titanium and stainless steel specialty surgical instruments and products for cardiac, vascular, thoracic, and microsurgery. Come see their VATS/MICS instruments and ask about the Optimus Series. Visit www.wexlersurgical.com for more information about products and services, or e-mail sales@wexlersurgical.com.

Wolters Kluwer 939

Phoenix, AZ

Z Health Publishing, LLC 547

Brentwood, TN

Zimmer Biomet Thoracic (formerly Biomet Microfixation) 136

Jacksonville, FL
Founded in 1927 and headquartered in Jacksonville, Florida, Zimmer Biomet is a global leader in musculoskeletal health care. The company designs, manufactures, and markets a comprehensive portfolio of innovative thoracic products and treatment solutions for surgeons and patients, including the RibFix™ Blu Thoracic Fixation System and the SternaLock® Blu Primary Closure System.

Zipper Belt 346

Dallas, TX

Business Meeting Tonight

5:30 p.m.–6:25 p.m.

Room 125AB

STS Members Only



A O R T I C

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At STS 2016, visit Maquet Booth #901

www.maquetusa.com