

STS MEETING BULLETIN

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

SATURDAY-SUNDAY | JAN. 23-24, 2016

DAILY SCHEDULE

SATURDAY

7:00 a.m.–6:00 p.m.

Registration: STS/AATS Tech-Con and STS Annual Meeting
Lower Level Foyer

8:00 a.m.–12:30 p.m.

STS/SCA: Integrating Perioperative Echocardiography Into Cardiac Surgical Clinical Decision Making
Room 122ABC

8:00 a.m.–3:00 p.m.

STS/CHEST: Primer on Advanced and Therapeutic Bronchoscopy—Theory and Hands-On Session
Room 129A

12:00 p.m.–6:30 p.m.

STS/AATS Tech-Con Exhibits
Lower Level Foyer

1:00 p.m.–2:30 p.m.

Cardiopulmonary Bypass Simulation Course
Room 126ABC

1:00 p.m.–3:00 p.m.

STS/AATS Tech-Con: Adult Cardiac Track I
Exhibit Halls 2-3
STS/AATS Tech-Con: General Thoracic Track I
Room 120D

3:30 p.m.–5:00 p.m.

STS/AATS Tech-Con: Adult Cardiac Track II
Exhibit Halls 2-3
STS/AATS Tech-Con: General Thoracic Track II
Room 120D

5:00 p.m.–6:30 p.m.

STS/AATS Tech-Con Reception
Lower Level Foyer

SUNDAY

7:00 a.m.–6:30 p.m.

Registration: STS/AATS Tech-Con and STS Annual Meeting
Lower Level Foyer

7:00 a.m.–1:15 p.m.

STS/AATS Tech-Con Exhibits
Lower Level Foyer

7:45 a.m.–9:30 a.m.

STS/AATS Tech-Con: Adult Cardiac Track III
Exhibit Halls 2-3
STS/AATS Tech-Con: General Thoracic Track III
Room 120D

see **SCHEDULE**, page 22

The STS 52nd Annual Meeting Finally Begins

Welcome to the STS 52nd Annual Meeting! I'm thrilled to welcome you to Phoenix for this preeminent educational event in cardiothoracic surgery.

The STS Workforce on Annual Meeting has put together an outstanding program that will provide you with knowledge and skills that you can take back home and put to use right away. Over the next 5 days, you'll experience thought-provoking lectures from renowned faculty and guests, exciting hands-on learning, an abundance of networking opportunities, and a chance to view the latest products and services in the specialty.

New offerings at the 52nd Annual Meeting include a how-to session featuring intraoperative videos of common cardiac surgical procedures and a session about the resuscitation of patients who arrest after cardiac surgery. Additionally, STS/AATS Tech-Con 2016 has sharpened its focus on new devices and procedures that have yet

to be approved by the US Food and Drug Administration, but could be available (with FDA approval) within 1-3 years from the time of presentation.

A number of sessions will feature perspectives from international experts. A Monday session from STS, the Canadian Association of Thoracic Surgeons, and the Canadian Society of Cardiac Surgeons will provide actionable information on the topics of online physician marketing, "physician review" websites, and the application of three-dimensional printing in cardiothoracic surgery. Also on Monday, the International Symposium & Reception will focus on the viability and ethics of employing new technologies to treat rheumatic heart disease, endocarditis, and mitral valve disease in various parts of the world.

STS and the European Association for Cardio-Thoracic Surgery will host a session on specialized aortic valve-sparing surgery and aortic valve repair on Tuesday. Another



Mark S. Allen, MD

Tuesday session, with the European Society of Thoracic Surgeons, will feature controversial
see **ANNUAL MEETING**, page 5

Critical Care Symposium to Examine Role of Tele-ICUs in Improving Quality, Value

Formal telemedicine ICU programs support 11% of critically ill adult patients in non-federal hospitals, according to a 2014 study.

This statistic speaks volumes in an era when 24/7 critical care units must meet quality improvement standards and continue to advance levels of care, while showing efficient use of ICU beds.

"Tele-ICUs allow critical care physicians to provide care for an exponentially larger volume of patients and at facilities that cannot afford or cannot obtain adequate critical care physician support," said Scott Lindblom, MD, Specialty Medical Director of Adult Pulmonary and Critical Care and Chief of Pulmonary and Critical Care Consultants at Carolinas HealthCare System in Charlotte, N.C.

Dr. Lindblom will be among the presenters at the STS/AATS Critical Care Symposium: Quality and Value in the CT ICU. The symposium, from 7:50 a.m. to 12:00 p.m. Sunday in Room 128AB, will focus on the role of postoperative quality and value improvement initiatives in reducing morbidity



Scott Lindblom, MD



Kevin W. Lobdell, MD



Emily Landon, MD

intensivists, and a method to obtain risk-adjusted data for quality reporting and process improvement.

"We have demonstrated improved clinical outcomes and clinical efficiency by implementing a virtual critical care physician evaluation on all patients within 1 hour of admission. We currently have 24/7 critical care RN support and 16-hour critical care

physician support," Dr. Lindblom said. "The daytime physicians have had a significant reduction in after-hours calls, and bedside RNs have a resource for clinical questions and bedside needs."

The program operates in conjunction with the Sanger Heart & Vascular Institute under the direction of Kevin W. Lobdell, MD, who is co-moderator of the symposium.

see **CRITICAL CARE**, page 6

and mortality, as well as leveraging expertise with telehealth solutions, hospital-acquired infections (HAIs), mechanical ventilation, and advanced life support.

Carolinas HealthCare System has operated a virtual critical care telemedicine program since May 2013 and currently covers 10 facilities with more than 250 ICU beds. The tele-ICU program provides after-hours coverage, daytime support for facilities without

Exhibit Hall Opening Reception Sunday!

4:30 p.m.–6:30 p.m.

Exhibit Halls 4-5

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Further, Together

STS Staff Welcomes You to Phoenix!

On behalf of the Society's staff, I join STS President Mark Allen in welcoming you to The Society of Thoracic Surgeons 52nd Annual Meeting and Exhibition in Phoenix, Arizona. As in the past, the Annual Meeting will provide you with a wide range of educational, networking, and social offerings.

Because there is so much to experience between Saturday and Wednesday, this *STS*

Meeting Bulletin will help you keep track of what's happening and provide up-to-date information about new sessions, meeting room locations, exhibitor descriptions, and much more.

Watch for the Monday and Tuesday/Wednesday editions of the *Bulletin*; the newspapers will be placed in bins throughout the Phoenix Convention Center during the Annual Meeting. Check the front-page

left-hand column in each issue for a quick summary and update of the day's activities.

The *Bulletin* also provides a handy reference to the Exhibit Hall, which is an important component of the meeting experience. The Exhibit Hall is a great place to learn about new and improved technology and products, and it offers the perfect opportunity to see and meet with colleagues and friends. Surveys from past meetings show



Rob Wynbrandt

that the majority of attendees make a point of visiting with the exhibitors at least three times over the course of the meeting. The STS Exhibit Hall opens its doors at 4:30 p.m. on Sunday, with a reception that runs

through 6:30 p.m. Snacks and refreshments will be served throughout the Exhibit Hall.

While you're there, take advantage of the free services offered at the Tech Bar. Experts can help you with both personal and professional tasks, such as downloading and using the STS Annual Meeting Mobile App, utilizing social media, improving your work productivity, troubleshooting issues with your smartphone or tablet, and more—all as a benefit of meeting registration.

I hope you also will stop by the STS booth (#523) in the Exhibit Hall. Staff members will be there, eager to talk with you about—and provide updates on—all things STS. Be sure to ask about the first outcomes report from the STS/ACC TVT Registry™, plans to upgrade and expand the STS National Database, our 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.

You also will want to take a moment and talk with the STS Government Relations staff, who can bring you up to date on the Society's many efforts on Capitol Hill. From coding and reimbursement issues to the implications of health care reform to important legislation relevant to cardiothoracic surgeons, STS continues to champion the specialty in Washington. Stop by and learn more. There's a lot going on—and you'll want to understand the implications for your practice.

If you are not already an STS member, please stop by the STS booth and learn about the many membership benefits we have to offer, including a complimentary subscription to *The Annals of Thoracic Surgery*. Those attendees who are not cardiothoracic surgeons—i.e., other physicians, CT surgery and general surgery residents, medical students, and all allied health care professionals—should especially note that our rolling admission process for Candidate, Pre-Candidate, and Associate Membership allows for the prompt disposition of their STS membership applications, typically within a week or two, so that they can start enjoying the benefits of STS membership almost immediately. And if you are an STS member, please pick up a membership packet to take home to a colleague; you will be helping both your colleague and your Society.

All the scientific sessions at this 52nd Annual Meeting, including the symposia, early riser sessions, breakout sessions, hands-on sessions, and invited talks, create a vast

see **WELCOME**, next page

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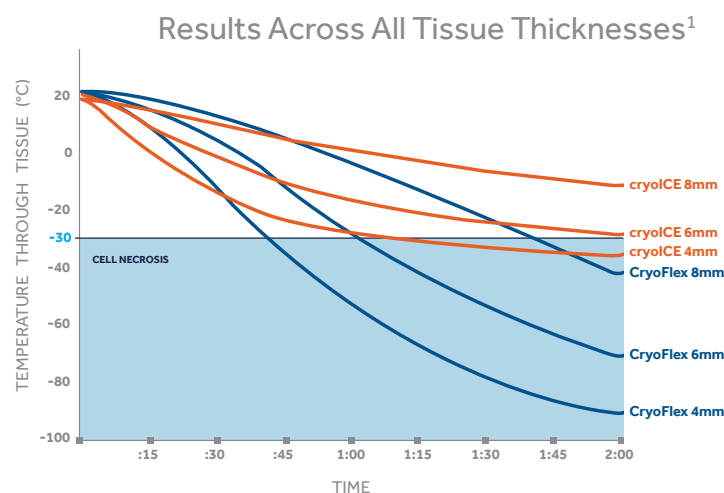
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Medtronic
Further, Together

STS/ACC Session to Delve Into TAVR for Low-Risk Patients

The potential for transcatheter aortic valve replacement (TAVR) in low-risk patients is quickly becoming a hot topic for cardiothoracic surgeons and cardiologists. The issue will be debated during a joint STS and American College of Cardiology session from 1:15 p.m. to 4:30 p.m. Sunday in Room 120D. STS Past President Michael J. Mack, MD will go head-to-head with ACC Past President David R. Holmes Jr., MD on this timely topic.

“Right now, TAVR can be performed safely and effectively on medium- and high-

efforts of a cardiovascular team—a true heart team approach—instead of with a surgeon or cardiologist alone,” said Dr. Thourani, Professor of Surgery and Medicine at Emory University School of Medicine, Co-Director of the Structural Heart and Valve Center at the Emory Heart and Vascular Center, and Chief of Cardiothoracic Surgery at Emory University Hospital Midtown in Atlanta.

Throughout the session, some of the world’s most well-known and thoughtful cardiothoracic surgeons and cardiologists will share their insights, technical videos, literature reviews, data-driven guidelines, and case examples.

In one presentation, STS Past President Robert A. Guyton, MD will discuss “My Worst Case: Why Did I Ever Take This ST Elevation Myocardial Infarction to Surgery?”

Percutaneous coronary intervention (PCI) usually is the first-line treatment for emergencies involving myocardial ischemia.

“Cardiac surgeons are called upon to treat patients with unusual situations, especially those not easily amenable to primary PCI. It is sometimes difficult, especially in emergency situations in the middle of the night, to determine which of these patients should be emergently taken to the operating room and which should be treated medically,” said Dr. Guyton, Charles Ross Hatcher, Jr., Professor of Surgery and Chief of the Division of Cardiothoracic Surgery at Emory University School of Medicine, Atlanta.

He noted patients who should be treated medically include those with extreme comorbidities and frailty, elderly patients, and patients with only a small amount of myocardium at risk.

Another controversial group includes

patients with suspected or actual acute neurologic injury, related perhaps to hemodynamic compromise caused by the acute coronary syndrome.

“If there is a neurologic deficit, then placing the patient on cardiopulmonary bypass is likely to extend the neurologic injury and perhaps make it permanent. This risk must be balanced against the likelihood of hemodynamic deterioration and death, which might be reversed by myocardial revascularization,” Dr. Guyton said. “I will present such a patient and discuss the risk-benefit analysis. This is a difficult situation both for the interventional cardiologist and the surgeon.”

An update on research from the STS/ACC Transcatheter Valve Therapy (TVT) Registry™ also will be provided. The TVT Registry is releasing its baseline outcomes report in the February 2016 issue of *The Annals of Thoracic Surgery*.

A follow-up report on the National Institutes of Health Cardiothoracic Surgical Trials Network Moderate and Severe Ischemic Mitral Regurgitation Trials also will be featured. Michael A. Acker, MD will explain how to best manage these patients, based on the results of these highly contested and controversial trials.

“Surgeons continue to struggle with the appropriate therapy for replacement in patients with severe ischemic mitral regurgitation or coronary bypass alone for those with moderate ischemic mitral regurgitation,” Dr. Thourani said. “The entire ACC @ STS session is unique in that attendees will learn about some of the most perplexing, yet commonly encountered patient situations from world-class cardiologists and surgeons alike.” ■



Vinod H. Thourani, MD



Robert A. Guyton, MD

risk patients. Some are now questioning the use of TAVR for low-risk patients,” said Vinod H. Thourani, MD, co-moderator of ACC @ STS. “Quite honestly, some surgeons are concerned that the management of aortic stenosis may leave the decision-making of surgeons in the hands of cardiologists. The question remains: What role will surgeons have? The role of valve thrombosis going into younger patients also has been discussed recently. This debate, by two icons in our specialty, is not to be missed.”

The session also will illustrate the importance of the heart team in the management of patients with aortic valve disease, coronary artery disease, and mitral regurgitation.

“We see these patients on a daily basis, and they can do well through the coordinated

ANNUAL MEETING

continued from page 1

issues in general thoracic surgery, including the management of high-risk patients diagnosed with early stage lung cancer, solitary pulmonary nodules/ground glass opacities, achalasia, and paraesophageal hernias.



I am very pleased to welcome two outstanding guest speakers at the General Session on Tuesday morning. The Thomas B. Ferguson Lecture will be given by former NASA astronaut and emergency medicine physician Scott Parazynski, MD, who—in addition to logging a total of 8 weeks in space—has summited Mount Everest and invented a number of medical devices and other technologies for life in extreme environments. The C. Walton Lillehei lecturer will be Gary Taubes*, an award-winning science journalist who has challenged conventional wisdom regarding diet, weight gain, and heart disease with his *New York Times*-bestselling books *Good Calories, Bad Calories* and *Why We Get Fat*.

You can read about these presentations and more in your *Program Guide* and *Abstract Book*—two publications that you will find invaluable for planning your schedule in Phoenix and also for reference when you’re back home.

On behalf of the Society’s leadership and the 52nd Annual Meeting Program Planning Committee, thank you for joining us here in Phoenix. Welcome to the meeting!

Mark S. Allen, MD
STS President

*For more information on this speaker, please visit www.prhsspeakers.com. ■

WELCOME

continued from previous page

array of educational opportunities—more than any one person could ever attend onsite. Fortunately, the STS 52nd Annual Meeting Online now is included free with your Annual Meeting registration. This online product will allow you to catch those sessions you weren’t able to attend—and review all the sessions you did attend—in the comfort of your home or office throughout the year ahead.

In closing, please know that all of us on the staff are here to serve you. Look for the distinctive green STAFF ribbon on our name badges, and please don’t hesitate to let us know if there’s anything we can do to help.

Thank you for attending, and enjoy the meeting!

Rob Wynbrandt

STS Executive Director & General Counsel ■

Apply Today to Become an STS Member

As an attendee of the STS 52nd Annual Meeting, you are participating in the most exciting specialty in medicine. But if you are not yet an STS member, you may not be experiencing the profession to its fullest.

STS membership comes with a wide range of benefits, including subscriptions to *The Annals of Thoracic Surgery*, *STS News*, and personalized e-mail communications. Additionally, you’ll receive reduced registration rates at future Annual Meetings and many other educational events throughout the year, as well as the potential for discounted participation fees in the STS National Database.

Several categories of membership are



offered to include anyone with an interest in cardiothoracic surgery. If you are not already a member, please stop by the STS booth (#523) in the Exhibit Hall to talk with staff and pick up an application. If you are a member and know someone who has not yet joined, pick up an application for them! By encouraging membership in STS, you’ll help your colleagues, the Society, and the specialty.



STS MEETING BULLETIN

THE OFFICIAL NEWSPAPER OF THE STS 52ND ANNUAL MEETING

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The STS 52nd Annual Meeting utilizes an entirely electronic evaluation and CME/Perfusion CEU credit claim process. Both physicians and perfusionists can use this system to claim credit, complete evaluations, and print CME/Perfusion CEU certificates.

Certificates of Attendance also are available for other attendees and international physicians not wishing to claim CME credit. Attendees will not be able to evaluate and claim CME/Perfusion CEU credit for ticketed sessions unless they have registered for those sessions. *Please note that CME credit is not available for the Residents Symposium, Residents Luncheon, or STS/AATS Tech-Con 2016.*

Attendees can complete the overall meeting evaluations and all individual session evaluations onsite at CME Stations located near Room 120D, Room 121A, and Registration on the Lower Level. Certificate printing is available.

Attendees also can access evaluations and CME/Perfusion CEU credit by visiting the online evaluation site through personal computers or handheld devices at www.sts.org/2016evaluation. You also can access the site through the STS Mobile App. In order to make this process more convenient for attendees, the meeting evaluations will be available online through Thursday, February 11, 2016.

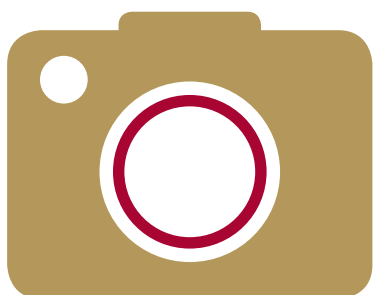
Attendees can log in to the website with the following information:

Username: 6-digit member ID number located at the lower left-hand side of the meeting badge

Password: First initial and last name

Photography and Recording Policy

Photography and recording of STS/AATS Tech-Con 2016 sessions are strictly prohibited, except by authorized personnel. Recording of STS 52nd Annual Meeting sessions is strictly prohibited, except by authorized personnel. ■



General Thoracic Symposium Emphasizes Audience Participation

Participants in the Parallel Surgical Symposium: General Thoracic will play a vital role in the educational direction of the program, which will be presented from 1:15 p.m. to 4:30 p.m. Sunday in Room 122ABC.

“We’ve incorporated clinical vignettes and audience polling to highlight the immediate clinical relevance of the topics we’ll discuss. This format not only will engage our audience, but it also will allow the speakers to tailor their talks to the knowledge base of the participants,” said co-moderator Leah M. Backhus, MD, MPH.

Speakers will discuss minimally invasive approaches to thymectomy, with and without myasthenia gravis, advanced surgical techniques for lung resection, including bronchoplastic procedures, and localization strategies for small, non-palpable lung nodules. They also will describe barriers to participation in national databases and provide advice for incorporating quality improvement initiatives into cardiothoracic surgical practice.

“There is not a single standard approach to thymectomy, so this is an opportunity to see three surgical approaches highlighted alongside each other. The format also will allow for back-and-forth discussion among the panelists and with audience members to debate their options regarding the best approach to the thymus,” said Dr. Backhus, Associate Professor of Cardiothoracic Surgery at Stanford University and the Palo Alto Veterans Affairs Health Care System in California.

STRATEGIES FOR LUNG RESECTION

The next portion of the symposium will focus on advanced techniques in lung resection, highlighting limits and frontiers for complex minimally invasive lung resection.

“Many surgeons are pushing their limits and exploring surgical treatment options for patients who may have traditionally been considered as unresectable.

Experience in advanced bronchoplastic thoracoscopic techniques can help define whether someone receives a potentially curative resection or not,” Dr. Backhus said.

Videos will be used to show the technical aspects of procedures so participants can leave with tools that they immediately can apply to their clinical practices.

INCORPORATING QUALITY IMPROVEMENT INITIATIVES

The final portion of the symposium centers on the importance of database participation, public reporting, and quality improvement initiatives. It will conclude with an update on Maintenance of Certification (MOC) Part IV for the American Board of Thoracic Surgery.

PARALLEL SURGICAL SYMPOSIUM: GENERAL THORACIC
Sunday
1:15 p.m.–4:30 p.m.
Room 122ABC
Weekend Pass required

“MOC Part IV is not an onerous challenge,” Dr. Backhus said. “We will show how to minimize some of the perceived barriers for meeting the new MOC requirements by providing guidance on implementing quality improvement programs.



Leah M. Backhus, MD, MPH

“I encourage people to attend this symposium. We’ve built on the great feedback from last year and put together an exciting program with high-profile speakers. It will be a lot of fun, and participants

will leave with a tremendous amount of knowledge.”

LEARN MORE ABOUT MOC

The recently changed requirements for ABTS Diplomates to remain compliant with MOC activities also will be discussed during Early Riser Session 15 from 7:30 a.m. to 8:30 a.m. Tuesday in Room 224B. The program will include a review of MOC goals, changes in specific MOC practices and requirements in surgery and cardiothoracic surgery, and the responsibilities for board-certified cardiothoracic surgeons. All cardiothoracic surgeons are welcome, but those approaching the 5th or 10th year of their ABTS cycle will find the session valuable. ■

CRITICAL CARE

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“We approached the symposium through the phases of care, along with risk assessment and mitigation, and then we considered each body system through these same phases of care,” said Dr. Lobdell, Director of Quality for the Sanger Heart & Vascular Institute at Carolinas HealthCare System. “Our comprehensive and systematic planning included historic registration data and feedback to ascertain that our offering would be current and respectful of what’s been done in the past, but also one that would allow us to learn and improve on how we presented these topics.”

THE IMPORTANCE OF HAI PREVENTION

Emily Landon, MD will discuss infection prevention, HAIs, and antibiotic stewardship, including the Hospital Microbiome Project, which aims to collect microbial samples from surfaces, air, staff, and patients at The University of Chicago’s new Center for Care and Discovery. Dr. Landon, Medical Director of Infection Control at The University of Chicago, is the hospital investigator for the project.

“We’re conducting an ecological survey of the hospital environment as patients, antibiotics, and health care providers are introduced into the hospital space. We’re sequencing millions of samples, and the data are still coming in,” said Dr. Landon.

The 700-bed hospital also uses automated electronic technology to monitor hand hygiene 24 hours a day, collecting millions of hand hygiene events every month. Fewer staff miss work due to illness, and hospital-acquired infections have decreased in hospital units with better hand hygiene compliance, Dr. Landon said.

“The focus of my talk will be about advancing the science of health care-associated infection prevention and understanding the steps we need to take to prevent infections,” Dr. Landon said. “Our goal is to provide scientifically sound methods of determining

“Tele-ICUs allow critical care physicians to provide care for an exponentially larger volume of patients.”

SCOTT LINDBLOM, MD

policy and helping health care workers change behavior to improve compliance.”

The rest of the symposium will focus on the effect of HAIs on quality and value, cardiac surgery unit-advanced life support (*see related article on page 14*), and prolonged ventilation, including the ventilator bundle, prevention of prolonged ventilation, timing of tracheostomy, and extracorporeal membrane oxygenation.

Dr. Lobdell encouraged those who have roles in the evolving multidisciplinary cardiothoracic critical care team to attend the Critical Care Symposium, noting that they will leave with important information on quality and value. ■

Sanger’s Tele-ICU Program: By the Numbers

After implementing a tele-ICU program, Carolinas HealthCare System has seen a 7.3% increase in patient acuity and 1.7% more patients.

Despite these rises in patient acuity and volume, the organization has provided more efficient and effective care:

Overall risk-adjusted mortality	Reduced 5.2%
ICU length of stay	Reduced 7.4%
Hospital length of stay	Reduced 2.3%



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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.

Symposium Looks at Options for Common Congenital Problems

Some of the most common congenital cardiac conditions do not have a single specific treatment of choice. During the Parallel Surgical Symposium: Congenital, from 1:15 p.m. to 4:30 p.m. Sunday in Room 126ABC, speakers will discuss alternative surgical techniques for treating neonates, infants, children, and young adults with commonly encountered congenital cardiac conditions.

The talks will focus on three atrioventricular septal defect (AVSD) repair

options, the closed versus open arterial switch technique, three repairs for tetralogy of Fallot, management of hypoplastic left heart syndrome, medical or surgical treatment of the borderline ventricular septal defect (VSD), and valve repair or replacement for aortic valve disease.

“These are common problems that congenital heart surgeons deal with on a regular basis,” said co-moderator Andrew C. Fiore, MD, adding that he hopes the program will appeal to surgeons at all stages of their careers.

The two-part program will kick off with video-based presentations for AVSD treatment, the switch technique for transposition of the great arteries, and treatment of tetralogy of Fallot.

“These well-respected surgeons are experienced at doing their chosen operation. Each technique is effective, but there are pros and cons to each one,” said

PARALLEL SURGICAL SYMPOSIUM: CONGENITAL

Sunday

1:15 p.m.–4:30 p.m.

Room 126ABC

Weekend Pass required

Dr. Fiore, Professor of Surgery at St. Louis University.

The second part of the symposium will examine whether new data should spur surgeons to change the way they manage common congenital cardiac pathologies. For example, most surgeons initially perform reconstructive operations for patients with

hypoplastic left heart syndrome, but some surgeons believe these patients initially should undergo transplantation.

“We tend to favor reconstructive techniques as the first operation, but there may be a role for transplantation in the treatment of certain high-risk patient subgroups at various stages of their palliation for hypoplastic left heart syndrome,” said Dr. Fiore, adding that attendees will hear data on the pros and cons of reconstruction versus transplantation.

Next up, a cardiologist and a cardiothoracic surgeon will look at indications for closure of the restrictive VSD. Controversy surrounds the low but potential risk associated with surgical VSD closure versus the potential complications of continued observations, such as aortic valve incompetence, endocarditis at the VSD site, and the potential difficulty of obtaining health insurance in adulthood.

The third area, aortic valve disease, brings its own controversy with respect to valve repair or replacement. “Aortic valve repair is technically more challenging, but has become more refined, more popular, and with acceptable early durability,” Dr. Fiore said. “On the other hand, mechanical aortic valve replacement adds the important burden of lifelong anticoagulation, but greater long-term structural integrity.”

The Ross procedure, usually recommended for the growing child, avoids anticoagulation, but late complications of autograft dilatation, aortic insufficiency, and pulmonary homograft structural failure can emerge with now two valves, aortic and pulmonary, placed at continued lifelong risk.

“While we will not completely resolve these complex controversial issues, we hope that with an open exchange of new ideas and knowledge between surgeons and cardiologists at all levels of experience, we can better serve the neonates, infants, children, and adults with congenital heart disease that we are so privileged to care for every day,” Dr. Fiore said. ■

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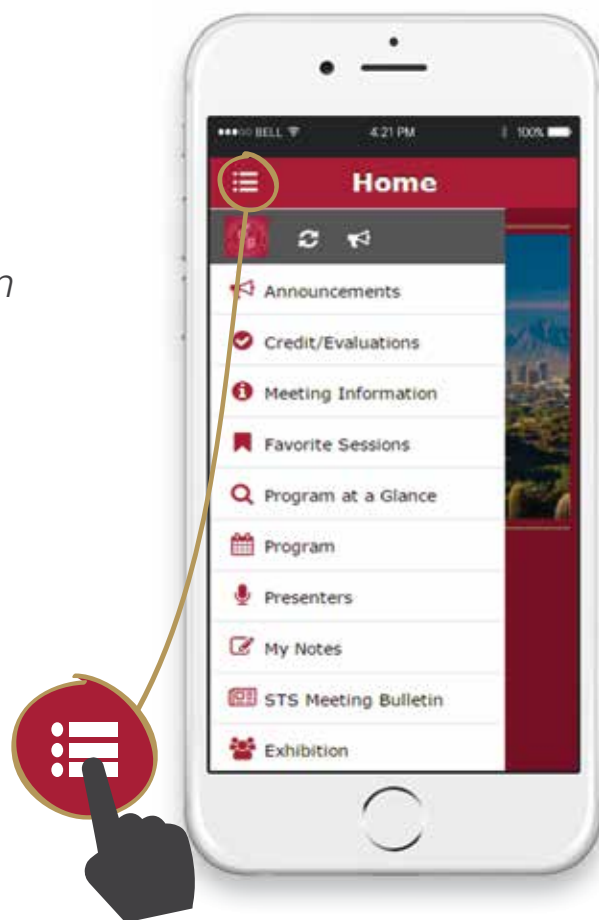
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After the Annual Meeting is over, the STS Facebook and Twitter pages will continue to deliver news on future STS events and CME credit opportunities. ■

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Symposium Preps Residents for Practice

Making the move from completing medical training to starting a practice can seem like a road with endless choices.

“From when cardiothoracic surgery residents first apply to medical school to completing their residencies, they move from one job to the next without a lot of input. They go through clear processes for getting into medical school, residency, and fellowship. It’s all orchestrated for them,” said Ara A. Vaporciyan, MD, Professor and Chair of

Thoracic and Cardiovascular Surgery at The University of Texas MD Anderson Cancer Center in Houston.

Dr. Vaporciyan is a co-moderator of the Residents Symposium, which will provide residents with practical information to help them transition from residency to a successful practice. The symposium will be from 1:00 p.m. to 4:00 p.m. Sunday in Room 231ABC. All residents, no matter their year, are encouraged to attend the program.

“The first time they have a choice and

have to make deep decisions is when they complete their residency. The ones who don’t think about it and only focus on superficial issues, such as location and salary, have the worst outcomes with the jobs they choose,” said Dr. Vaporciyan.

His co-moderators will be Sidharta P. Gangadharan, MD, Associate



Ara A. Vaporciyan, PhD



Sandra L. Starnes, MD



Sidharta P. Gangadharan, MD

Professor of Surgery at Harvard Medical School and Chief of the Division of Thoracic Surgery at Beth Israel Deaconess Medical Center, Boston, and Sandra L. Starnes, MD, the Dr. John B. Flege, Jr. Chair in Cardiothoracic Surgery, Associate Professor of Surgery, and Director of the Division of Thoracic Surgery at the University of Cincinnati. All are members of the Society’s Workforce on Thoracic Surgery Resident Issues, with Dr. Vaporciyan as Chair.

RESIDENTS SYMPOSIUM: TRANSITIONING FROM RESIDENCY TO A SUCCESSFUL PRACTICE

Sunday

1:00 p.m.–4:00 p.m.

Room 231ABC

Weekend Pass required

The program will feature five 15-minute talks on how to find the right position, interviewing tips, contract negotiation, how to be successful in developing a clinical practice, and early career development, which will be followed by group breakout sessions and discussions with experienced surgeons.

“To make the discussions more useful, they will not concentrate on broad concepts, but rather, specifics about the best way to find your first job, key points of a successful interview, the nuts and bolts of your contract, and so on,” Dr. Starnes said. “Most residents have never seen a contract, so they’ll learn how to break down the specifics of what is a typical contract and what things to avoid.”

Feedback from last year’s participants has brought a new format to the group discussions. Previously, each table discussion was dedicated to a specific topic from the symposium; this year, the format allows residents to pose questions related to any of the symposium topics at any table.

“Each table will have three faculty members from a variety of academic and private practices,” Dr. Starnes said. “Over the years, they have done a great job and have been committed to helping engage the residents.”

Beyond attending the symposium, Dr. Vaporciyan recommends that residents become STS members and get involved with the Society’s leadership opportunities.

“Getting involved in the STS Workforces is a great way to give back, network, and meet mentors,” he said. “Yes, it’s a little work, but it’s rewarding. I’ve met many people, and I clearly get more out of it than I think I put into it.” ■



Looking for a new opportunity?

Visit the STS/CTSNet Career Fair in the 100 aisle of the Exhibit Hall!

Sunday, January 24 4:30 p.m. – 6:30 p.m.

Monday, January 25 9:00 a.m. – 4:30 p.m.

Tuesday, January 26 9:00 a.m. – 3:30 p.m.

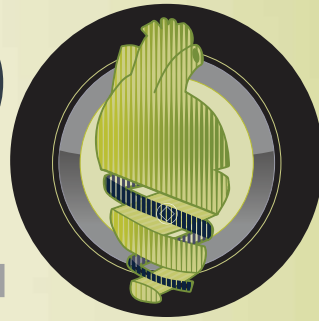
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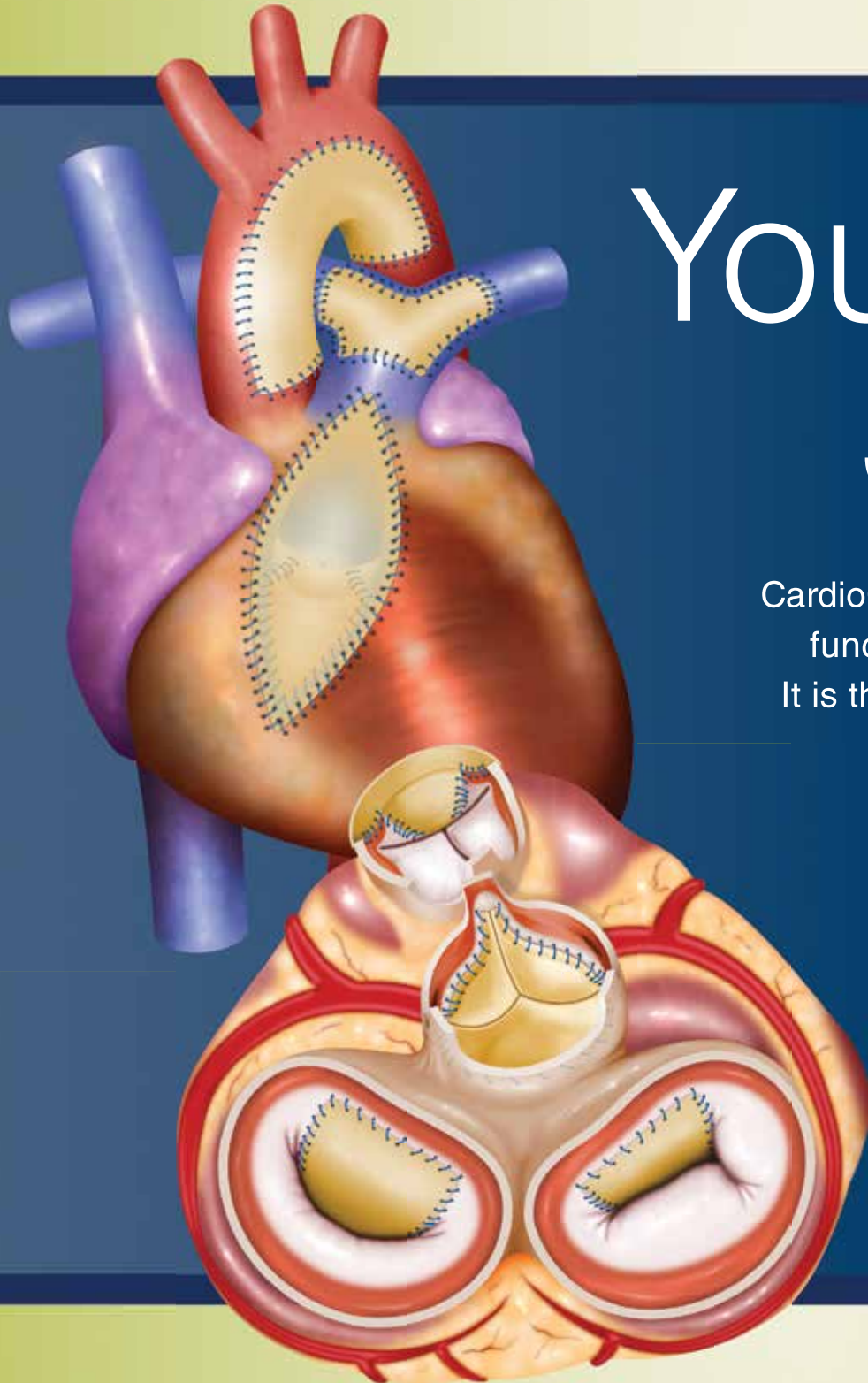
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Hear from Experts at Industry-Sponsored Satellite Activities

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. *This list is accurate as of December 22, 2015.*

SATURDAY

Abbott Vascular

The New Mitral Valve Surgeon

7:00 p.m.-8:30 p.m.

Phoenix Ballroom A, Sheraton Grand Phoenix, 340 N. Third Street

CMEology/Baxter Healthcare Corporation

Advanced Strategies for Preventing Bleeding-Related Complications: Patient-Centered Approaches

7:00 p.m.-9:15 p.m.

Valley of the Sun Ballroom D, Sheraton Grand Phoenix, 340 N. Third Street

SUNDAY

Atricure & MediaSphere Medical, LLC

Why the LAA Matters: The Role of LAA Occlusion for Stroke Management

7:00 p.m.-9:00 p.m.

Regency Ballroom A, Hyatt Regency Phoenix, 122 N. Second Street

Baxter Healthcare Corporation

Guideline Based Approach to Blood Management

7:00 p.m.-10:00 p.m.

Curtis B, Hyatt Regency Phoenix, 122 N. Second Street

CorMatrix Cardiovascular

CorMatrix Conversation & Comedy

7:00 p.m.-10:00 p.m.

Copper Blues, 50 W. Jefferson Street #200

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

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. ■

New Protocol Increases Postoperative Survival Rates After Cardiac Arrest

Jill Ley, RN, MS set out to increase survival for cardiac surgery patients who experience a cardiac arrest while in an ICU. By implementing a new protocol, she helped reduce mortality rates from cardiac arrest by nearly half at California Pacific Medical Center in San Francisco.

Ley, Clinical Nurse Specialist in Surgical Services at California Pacific Medical Center,

RESUSCITATION OF PATIENTS WHO ARREST AFTER CARDIAC SURGERY

Sunday

1:15 p.m.-4:30 p.m.

Room 129AB

This course has limited attendance. Weekend Pass required.

had witnessed how Advanced Cardiac Life Support (ACLS)—while the gold standard for emergency responders—has significant shortcomings after cardiac surgery, including a

greater risk of mortality and morbidity. To combat this issue, she learned about Cardiac Surgery Unit-Advanced Life Support (CSU-ALS), a European protocol that provides an evidence-based approach for the management of cardiac arrest after cardiac surgery.

“Jill came over and saw our course on CSU-ALS. After she implemented the protocol, mortality rates from arrest fell from 65% to 35% at her institution,” said Joel Dunning, PhD, FRCS, Consultant Cardiothoracic Surgeon at James Cook University Hospital in Middlesbrough, United Kingdom, who developed CSU-ALS with his colleagues. Their protocol was adopted by the European Resuscitation Council in 2010 after several years of in-depth review.

LEARN ABOUT CSU-ALS

Dr. Dunning will be the moderator and Ley will be among several speakers at a new hands-on session, Resuscitation of Patients Who Arrest After Cardiac Surgery, which will be held from 1:15 p.m. to 4:30 p.m. on Sunday in Room 129AB. Attendees will learn how this method of resuscitating postoperative cardiac surgery patients can rapidly reverse the causes of arrest.

Faculty members, including cardiothoracic surgeons, an anesthesiologist, and a physician’s assistant, will cover how to perform an emergency re sternotomy using a team-based approach, internal massage, emergency pacing, standardized equipment, and medication strategies, which are targeted to achieve optimal survival in this population. Attendees will have the opportunity to participate in simulated arrest scenarios using re sternotomy manikins. The session will conclude with information on how to implement the resuscitation protocols and how to become an instructor.

PROTOCOL GOES BEYOND ACLS

ACLS has a number of limitations when responding to patients who experience

postoperative cardiac arrest after a major cardiac operation.

“For two of the three most common causes of arrest—tamponade and hypovolemia—the use of external cardiac massage as done with ACLS is ineffective. For both of these causes, the only treatment is to reopen the chest so you can fix the problem in about 5 minutes. Otherwise, the patient is going to have irreversible brain damage,” said Dr. Dunning, adding that ACLS also doesn’t address individuals with temporary pacing wires, endotracheal tubes, ventricular assist devices, and infusions.

Also, what may appear to be pulseless electrical activity may rather be a function of the patient’s pacemaker responding to an



Joel Dunning, PhD, FRCS

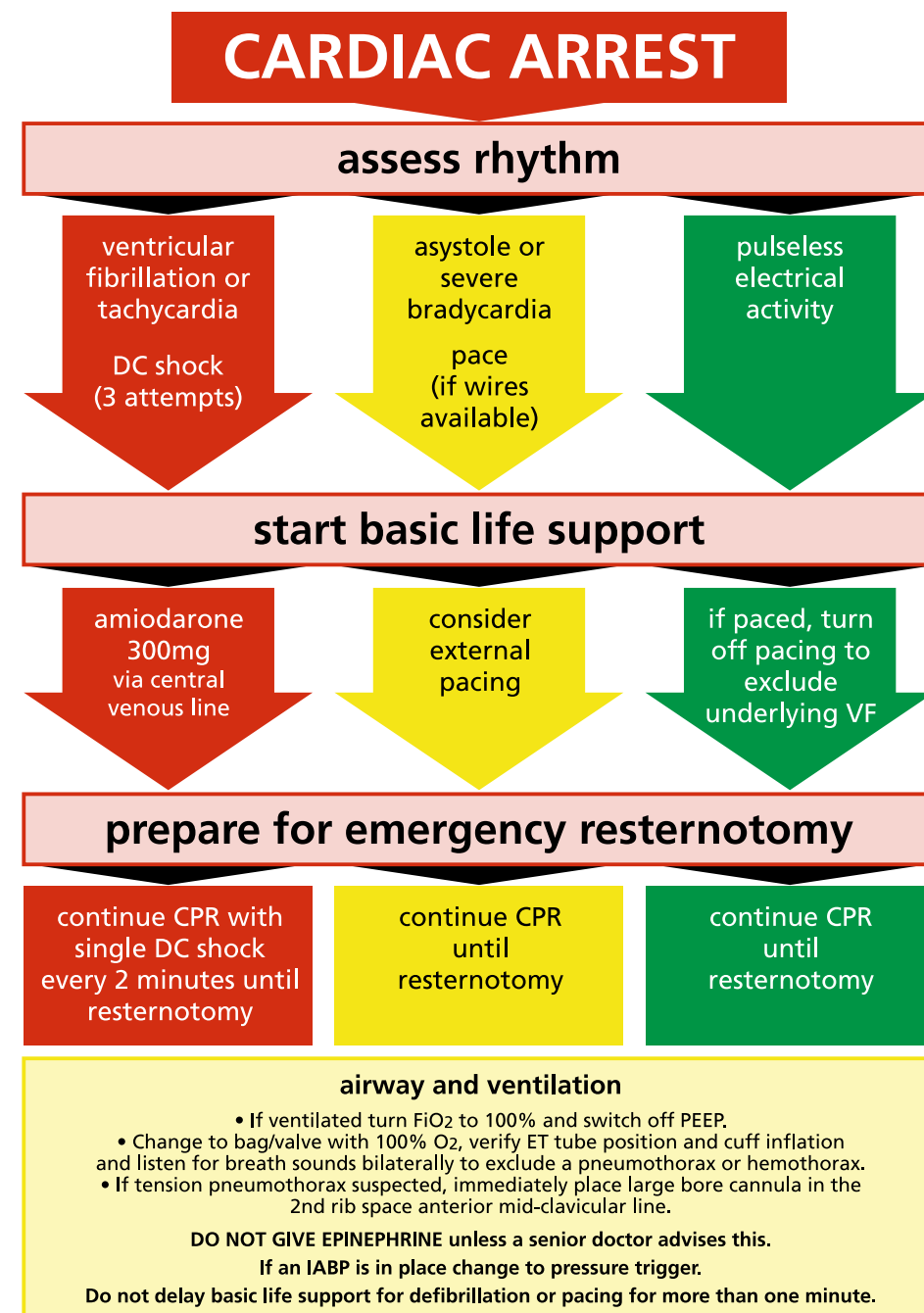


Jill Ley, RN, MS

underlying ventricular fibrillation, which is not addressed in ACLS, but is in CSU-ALS. The protocol also includes information on how to gown and glove quickly, as well as how to mobilize and work as a team.

The protocol calls for a person trained in CSU-ALS, who could be a physician’s assistant or a nurse practitioner, to be available 24 hours a day.

“The first steps of reopening the chest are straightforward, and, if practiced on a manikin simulation, can be performed safely,” said Dr. Dunning, adding that manikins like the ones session attendees will practice on have been sent to about 50 institutions throughout the United States. ■



This image illustrates a proposed protocol for Cardiac Surgery Unit-Advanced Life Support for the management of patients who arrest after cardiac surgery.

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LDCT Screening Detects High Lung Cancer Rates in Underserved Area

A free program to screen high-risk individuals for lung cancer showed triple the number of overall cancer incidence than reported in the National Lung Screening Trial (NLST).

Carsten Schroeder, MD, PhD, Director of the Cancer Center Thoracic Surgery Service and Associate Professor of Surgery, and resident Erika Simmerman, MD, both at the Medical College of Georgia at Augusta University, will report on the findings during Monday's General Thoracic Session: Lung Cancer I—Diagnosis and Staging, which will be held from 1:30 p.m. to 3:30 p.m. in Room 120A.

"In the NLST, they found 1 in 100 cancers. We found 1 in 32 cancers," said Dr. Schroeder, adding that the NLST was done throughout the United States, while the Augusta trial was conducted in an underserved area in the Southeast.

The NLST randomly assigned participants to undergo three annual screenings with either low-dose computed tomography

(LDCT) (26,722 participants) or single-view chest X-ray (26,732).

The men and women were ages 55 to 74 with at least 30 pack-years of smoking and were either current smokers or had quit within the past 15 years.

Results from the NLST, which were published in 2011, found a 20% reduction in lung cancer mortality among patients screened with LDCT, compared to patients screened with plain chest radiography.

As a result of the NLST findings, the National Comprehensive Cancer Network recommended that high-risk individuals undergo

annual LDCT screenings.

In February 2015, the Centers for Medicare & Medicaid Services released a final National Coverage Determination that provides coverage of LDCT lung cancer screening in certain high-risk patients.

GEORGIA SCREENING

The researchers conducted their thoracic surgery-driven 1-year LDCT trial beginning in June 2014 at the major academic hospital

in Augusta, Georgia. The trial had two screening groups of people ages 55 to 80. (See modified screening criteria at right.)

Augusta, a 2-hour drive from Atlanta, has about 200,000 residents, with the metro area totaling about 545,000. A 2014 Brookings Institution report found that between 2008 and 2012, 63.9% of Augusta's poor lived in the suburbs.



Carsten Schroeder, MD, PhD

Of the 255 patients screened, four had pathologically proven malignancies, four had a clinical diagnosis of cancer, seven had equivocal findings for workups, four were false positives, and four chose to avoid intervention and instead underwent serial imaging surveillance.

"Early detection of lung cancer is important because if we don't detect it early, it is not operable," Dr. Schroeder said. "Once an individual starts coughing up blood or has pain, it's normally too late because you are already in stage 3 or 4. If we can detect lung cancer early, we can offer patients longer survival, if not a cure." ■

Screening Criteria

GROUP 1

- 55–80 years old
- Currently a smoker or have quit within the past 15 years
- Smoked at least a pack of cigarettes a day for 30-plus years

GROUP 2

- 50–80 years old
- Smoked at least a pack of cigarettes a day for 20-plus years
- Have at least one of the following additional lung cancer risks:
 - Personal cancer history (lung, head and neck, and/or lymphoma)
 - Family history of lung cancer (parent, sibling, or child)
 - Emphysema or chronic bronchitis
 - Chronic obstructive pulmonary disease
 - Long-term exposure to asbestos
 - Asbestos-related lung disease or pulmonary asbestosis
 - Long-term exposure to silica, cadmium, arsenic, beryllium, chromium, diesel fumes, nickel, radon, uranium, or coal smoke and soot

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The Patient Guide to Heart, Lung, and Esophageal Surgery

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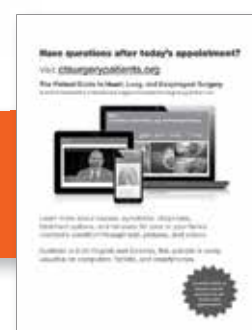


Available in both English and Spanish, this website is easily viewable on computers, tablets, and smartphones.

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

Study Examines Impact of Specialty and Trainee Involvement on Esophagectomy Outcomes

A study being presented Tuesday has found that allowing trainees to participate in esophagectomies does not influence patient outcomes. And while the specialty of the surgeon performing the procedure doesn't affect mortality, it may have an impact on other outcomes.

Senior author Daniela Molena, MD and her colleagues conducted a retrospective



Zeyad Khoushhal, MD, MPH



Daniela Molena, MD

analysis using the American College of Surgeons National Surgical Quality Improvement Program databases (2005–2013). Zeyad Khoushhal, MD, MPH will report on the findings during Tuesday's General Thoracic Session:

Esophageal, which will be held from 1:00 p.m. to 3:00 p.m. in Room 125AB.

More than 15,000 esophagectomy patients, who were 18 years and older, were divided into two groups, those with surgeries performed by general surgeons (69.8%) and those with surgeries performed by cardiothoracic surgeons (30.2%). Dr. Khoushhal and his colleagues compared intraoperative and postoperative outcomes.

They found that while patients treated by cardiothoracic surgeons had significantly higher comorbidities, cancer rates, and trainee involvement with their surgeries, there was no significant difference in mortality.

However, they found that in those procedures performed by general surgeons, patients experienced an increase in serious morbidity, longer hospital stay, and decreased odds for home discharge.

When researchers evaluated trainee involvement as an independent factor, no significant differences were seen in patient outcomes.

Dr. Khoushhal conducted the study while working on his master's degree in public health at Johns Hopkins Bloomberg School of Public Health in Baltimore. He is now a Postdoctoral Research Fellow at St. Michael's Hospital in Toronto. Dr. Molena was his mentor.

"As academic surgeons, it's our responsibility to train residents and students. I am happy to see there was really no difference in the outcomes when there was trainee involvement," Dr. Molena said. "At the end of the day, the responsibility of the case is on the attending. It is important that the operation is done in a way that is safe for the patient and provides an optimal outcome, but, at the same time, it allows trainees to learn how to become good

surgeons. These data are important because they show that the outcome doesn't change whether the trainee is involved or not."

She noted that patients who seek treatment from cardiothoracic surgeons

typically are sicker.

"I'm not surprised to see more cancer, more COPD, and more congestive heart failure. Patients who are sicker are going to see specialists for care," said Dr. Molena, who is now an Associate Attending and Director of the Esophageal Surgery Program at Memorial Sloan Kettering Cancer Center and an Associate Professor at Weill Cornell Medical College, New York. ■

GENERAL THORACIC SESSION: ESOPHAGEAL

Tuesday

1:00 p.m.–3:00 p.m.

Room 125AB

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- **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. ■

SUNDAY

4:30 p.m.–5:10 p.m.

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

5:15 p.m.–5:55 p.m.

Twitter 101

6:00 p.m.–6:30 p.m.

5 Apps to Tame Your Inbox

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.

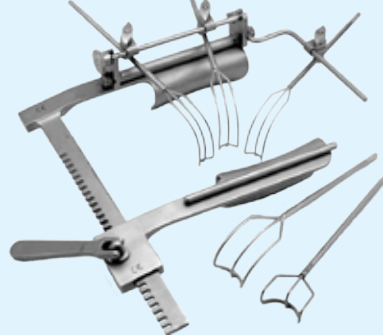
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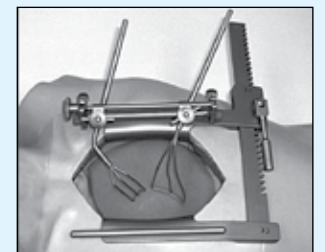
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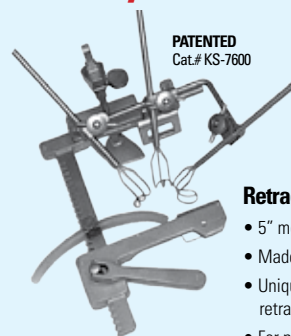
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Berlin Heart Inc 1039
The Woodlands, TX
Berlin Heart is the only company worldwide that develops, manufactures, and distributes ventricular assist devices for patients of every age and body size. EXCOR® Pediatric provides medium- to long-term circulatory 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 recent-

ly 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

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.

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 prospective.

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 surgi-

cal 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
EMB, 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 Cardio-Thoracic 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 cardiovascular 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

2016 ANNUAL MEETING EXHIBITORS cont.

NEW EXHIBITORS MEETING BULLETIN ADVERTISERS

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!

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.

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

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 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.

2016 EXHIBITOR MAP

STS Exhibit Hall Hours

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

Sunday
4:30 p.m.-6:30 p.m.
Opening Reception
Monday
9:00 a.m.-4:30 p.m.
Tuesday
9:00 a.m.-3:30 p.m.

LEARNING LAB
LARGE THEATER
028



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.

SUNDAY

Medistim

A Practical Introduction to Graft Assessment and Intraoperative Guidance
4:30 p.m.–5:00 p.m.
 Small Theater

Joint Council on Thoracic Surgery Education, Inc.

Jeopardy Championship—Round 1
5:10 p.m.–5:40 p.m.
 Large Theater

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

2016 ANNUAL MEETING EXHIBITORS cont. NEW EXHIBITORS MEETING BULLETIN ADVERTISERS

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.

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 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, IL4
 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.

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

STS/AATS TECH-CON 2016

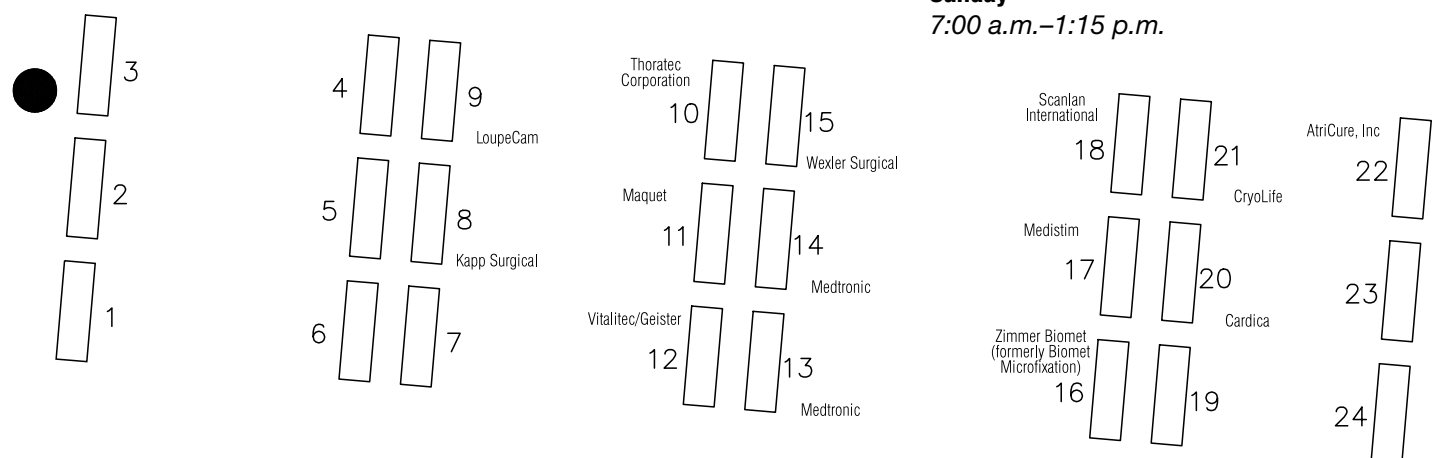
LOWER LEVEL FOYER

Saturday

12:00 p.m.–6:30 p.m.

Sunday

7:00 a.m.–1:15 p.m.



STS/AATS Tech-Con 2016 Exhibitors

Exhibitor	Booth Number
Lower Level Foyer	
AtriCure, Inc.	22
Cardica	20
CryoLife	21
Kapp Surgical	8
LoupeCam	9
MAQUET	11
Medistim	17
Medtronic	13-14
Scanlan International	18
Thoratec Corporation	10
Vitalitec/Geister	12
Wexler Surgical	15
Zimmer Biomet (formerly Biomet Microfixation)	16

As of December 8, 2015

2016 ANNUAL MEETING EXHIBITORS cont.

NEW EXHIBITORS

MEETING BULLETIN ADVERTISERS

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.

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. 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. PD T 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, unipolar 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 7,200 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 headlights, loupes, and the most comprehensive selection of exceptional handheld surgical instruments available to the discriminating surgeon. There is no substitute for quality, expertise, and individualized service. Sontec's vast array awaits your consideration at Booth 310.

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 headlights 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

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.

2016 ANNUAL MEETING EXHIBITORS cont.

- 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 email 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

Opportunities Abound for *Annals* Education

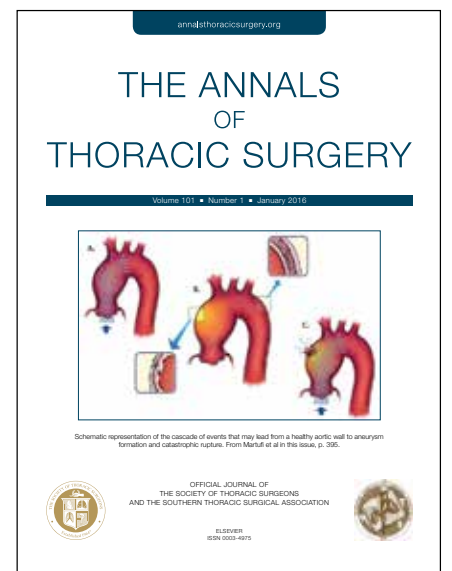
Meeting attendees interested in improving their scholarly research abilities have a number of opportunities at the Annual Meeting to learn more about publishing in *The Annals of Thoracic Surgery*.

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 1:00 p.m. to 4:00 p.m. on Sunday, 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. ■



SUNDAY

4:30 p.m.–6:30 p.m.
 Figure Clinic, Journal CME, New Submissions

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

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SCHEDULE

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7:50 a.m.–12:00 p.m.
 Acquired and Congenital Heart Surgery Symposium: Challenges in Adult Congenital Heart Disease
 Room 122ABC
 Practice Management Summit
 Room 126ABC
 STS/AATS Critical Care Symposium: Quality and Value in the CT ICU
 Room 128AB

10:15 a.m.–12:00 p.m.
 STS/AATS Tech-Con: Joint Session
 Exhibit Halls 2-3

1:00 p.m.–4:00 p.m.
 Residents Symposium: Transitioning From Residency to a Successful Practice
 Room 231ABC

1:15 p.m.–4:30 p.m.
 ACC @ STS
 Room 120D

How To: Technical Tricks and Pitfalls to Simplify Cardiac Surgery Procedures
 Room 131ABC
 Parallel Surgical Symposium: Congenital
 Room 126ABC
 Parallel Surgical Symposium: General Thoracic
 Room 122ABC
 Resuscitation of Patients Who Arrest After Cardiac Surgery
 Room 129AB

2:00 p.m.–6:30 p.m.
 Scientific Posters
 Room 120 Foyer

2:30 p.m.–4:30 p.m.
 CT Surgery Interprofessional Education Symposium: Multidisciplinary Team Approach to Patient Safety, Quality, Outcomes, and Reimbursement
 Room 128AB

4:30 p.m.–6:30 p.m.
 Opening Reception in STS Exhibit Hall
 Exhibit Halls 4-5



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At STS 2016, visit Maquet Booth #901

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