

Top Cardiothoracic Surgeons of **2021**

AND THE FUTURE OF
CARDIAC SURGERY



In 1896, it was widely believed that the heart was an organ upon which surgeons should not and could not operate. Ludwig Rehn challenged this belief when he operated on a cardiac stab wound.

Since then, advancements have been made in surgical techniques, knowledge and devices to assist surgeons and patients. Now, patients are living longer and surgeons are having better outcomes because of these advancements.

Advancements in cardiothoracic surgery are continuing today thanks to the work of innovative cardiothoracic surgeons everywhere.

In this eBook, we will take a look at some top surgeons making a difference in the field in 2021 and include some feedback on the future of cardiac surgery and how to stay on top of advances in the field.

Top Cardiothoracic Surgeons of 2021



Our Methodology

This report profiles practicing cardiothoracic surgeons who have made significant contributions in the field of cardiothoracic surgery. The selected surgeons are recognized specifically for their clinical research or involvement in landmark cardiothoracic studies and procedures. They are in no particular order.



Dr. James Hemp

SCRIPPS HEALTH

What he's known for:

Minimally invasive procedures like robotic-assisted mitral valve repair and coronary artery bypass grafts.

A veteran of the U.S. Navy, Dr. Hemp served more than 20 years, retiring as captain. During his military career, Dr. Hemp was chair of the Department of Cardiothoracic Surgery and the director of surgical services at the Naval Medical Center.

Now, Dr. Hemp practices minimally invasive robotic-assisted procedures for an array of cardiothoracic conditions, including procedures to help normalize the heart rhythm and reduce the risk of stroke related to rhythm abnormalities. A member of the Scripps Health team for over 15 years, Dr. Hemp has performed more robotic heart and lung surgeries than any other surgeon in the San Diego area.

"My thought process is always to think about how I can do something with less invasion to [the patient's] body if possible," [Dr. Hemp explained.](#)

Published in a number of peer-reviewed journals, Dr. Hemp conducts research to improve cardiovascular care and is board certified in vascular surgery, thoracic and cardiac surgery and general surgery.



Dr. Francis Sutter

LANKENAU MEDICAL CENTER

What he's known for:

*Robotic CABG procedures, HeartFlow®
FFRct Analysis, Maze Procedure*

Chief of Cardiac Surgery at Lankenau Medical Center, the majority of Dr. Francis Sutter's surgical cases involve robotic CABG procedures, a procedure he has championed since 2005.

"I think that this is a paradigm shift in cardiac surgery in the world," [Dr. Sutter said](#). "First we have the robotic coronary bypass surgery, but now we're doing aortic valves and we're doing mitral valves the same as a heart catheterization."

Dr. Sutter has performed more than 1,700 robotic CABG procedures — more than any other surgeon in the country. He has presented his surgical method to surgeons around the world.



Dr. Shanda Blackmon

MAYO CLINIC

What She's Known For:

Minimally invasive thoracic surgery

[Dr. Blackmon](#) primarily cares for cancer patients at the Mayo Clinic, performing cardiothoracic surgeries to remove cancer and repair organs in the thoracic cavity. Before joining the Mayo Clinic, Dr. Blackmon served as the chief of thoracic surgery at Houston Methodist Hospital where she developed a minimally invasive thoracic surgery program.

At Mayo Clinic, Dr. Blackmon is the principal investigator in thoracic topic clinical trials addressing mediastinal tumors, lung cancer, esophageal cancer and diseases of the esophagus. She is also a professor of thoracic surgery. Dr. Blackmon has received the STSA Mavroudis-Urschel Award from the Southern Thoracic Surgical Association, the Innovation Accelerator Prototype Testing and Advancement Award from the Surgery Research Center for Excellence and was honored as a Thoracic Champion Team Member of 3D Printing Lab at the Mayo Clinic.



Dr. Andrea Steely

BETH ISRAEL DEACONESS MEDICAL
CENTER

What She's Known For:

*Providing medical services to the people
of Rwanda*

In 2018, Dr. Steely received the International Medical Volunteer Scholarship from The Thoracic Surgery Foundation. There, she performed a variety of cardiothoracic procedures on patients to help save and improve their lives. Dr. Steely traveled to Rwanda with a team of nurses, pharmacists, intensivists, anesthesiologists and perfusionists. There are no cardiac surgeons in Rwanda, so Dr. Steely's services were much needed.

"Performing operations in a developing country is challenging, but doing open heart surgery in this setting, with no resources other than what we've brought, is incredible – it's amazing what a group of people with a shared mission can accomplish. While it is the routine and methodical nature of cardiac surgery that allowed us to be so successful in Rwanda, participating in trips like this, which are hardly routine, reminds me of why I wanted to go to medical school in the first place: to make a difference in the lives of my patients in a unique way," [Dr. Steely wrote](#).



Dr. Alan Speir

INOVA HEART AND VASCULAR
INSTITUTE

What He's Known For:

Minimally invasive cardiac surgery

Dr. Speir received the Society of Thoracic Surgeons 2021 Distinguished Service Award for contributions to the specialty and commitment to the Society of the Thoracic Surgeons. The chairman of cardiovascular surgery at Inova, Dr. Speir is the author of more than 130 peer-reviewed journal articles and abstracts.

He is a healthcare and public policy advocate, often representing the Society of Thoracic Surgeons on government advisory committees and technical expert panels. His work with the Virginia Cardiac Services Quality Initiative (VCSQI) used data combinations to save approximately \$90 million by reducing cardiac surgery mortality in Virginia.



Dr. G. Randall Green

UPSTATE UNIVERSITY HOSPITAL

What He's Known For:

Surgically treating atrial fibrillation

G. Randall Green, MD, chief of cardiac surgery at Upstate Medical University in Syracuse, NY, co-director of the Upstate Heart Institute, and associate professor of surgery at Syracuse exemplifies one of the hundreds of top cardiothoracic surgeons across the nation who bring top-notch cardiac care to regional centers. Dr. Green moved to Upstate in 2017 to lead Upstate's Heart Institute and usher in state-of-the-art cardiac intervention and surgical modalities. As one of six surgeons in the state and the only one in Central New York with a risk-adjusted mortality rate significantly lower than the state average, Dr. Green was chosen for the position from a nationwide search. He said his goal is to create a high quality, high volume, highly efficient academic cardiac surgical program that supports Upstate's education and research missions.

Board certified in general surgery and cardiothoracic surgery, Dr. Green came armed with an undergraduate degree from Syracuse's Le Moyne College, a medical degree from Northwestern University Medical School in Chicago, surgical internships, fellowships and residencies at Stanford University, Palo Alto, CA, and the University of Virginia in Charlottesville. A lifelong learner, Dr. Green also holds an MBA degree from Cornell University's prestigious Johnson School, and a juris doctorate from Syracuse University College of Law.

In addition to his service on several local boards, Dr. Green is a member of the Strategy Group at the Center for Healthcare Innovation, a Chicago-based nonprofit "think tank" for health care innovations, and is co-founder of Pharify, Inc., an organization created for physicians, by physicians to bring fairness, clarity, and confidence for measuring physician value.



Dr. Edward Bove

CS MOTT CHILDREN'S HOSPITAL

What He's Known For:

Innovation in the field of pediatric congenital heart surgery and the refinement of the Norwood procedure.

In 2021, Dr. Bove received the Earl Bakken Scientific Achievement Award by The Society of Thoracic Surgeons for his work in pediatric congenital heart surgery. Dr. Bove advanced staged surgical repair of complex single ventricle heart disease and hypoplastic left heart syndrome (HLHS).

HLHS was always a fatal birth defect until Dr. Bove refined the high-risk Norwood procedure. Thanks to his advancements, the Norwood procedure is now widely used in the treatment of HLHS, which allows patients to survive into adulthood.

Patients from around the country and world have traveled to CS Mott Children's Hospital for Dr. Bove and his team's expertise with the procedure. In fact, he has performed more than 1,500 Norwood procedures. Dr. Bove has authored more than 300 peer-reviewed articles and dozens of book chapters.

The Future of Cardiothoracic Surgery



By 2035 — less than 15 years — the average caseload for cardiothoracic surgeons could increase by 121%. While that certainly means you'll be in demand, it also brings to mind the question: What will the cardiothoracic field look like in 2035? Will surgeons be using ultra modern technologies to diagnose and treat patients? Will patients be using technology to help diagnose and treat themselves? What will the world of surgery look like?

In his letter to residents shared with the American Association for Thoracic Surgery, Dr. Edward D. Verrier points out that to succeed in the future, cardiothoracic surgeons must:

- Partner with industry and embrace new technology
- Have better control of imaging
- Participate in solid scientific prospective clinical trials
- Maintain a basic scientific foundation
- Face change head-on
- Constructively adapt to disruptive challenges

Social Media Groups for Cardiothoracic Surgeons



The Society of Thoracic Surgeons



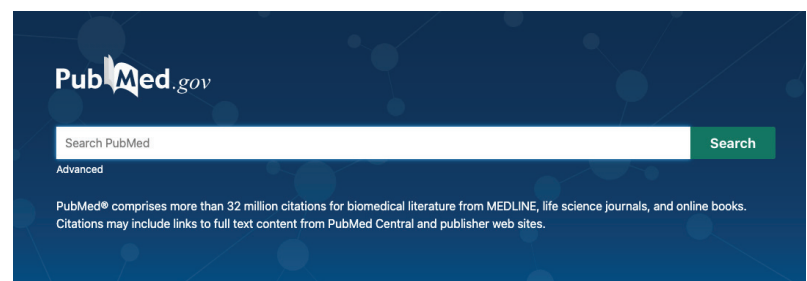
Thoracic Surgery Social Media Network



CTSNet

Stay Up to Date on the Latest Studies and Advances in Your Field

New studies come out frequently from all over the world and it can be hard to balance your busy work life while keeping abreast of the latest advancements and studies in the field. Joining social media groups is an effective way to keep up with your peers and stay informed on the latest studies. Social media applications like Twitter can also help keep you current with what's happening live at industry conferences.



The [NIH Pub Med database](https://pubmed.ncbi.nlm.nih.gov/31455868) is a key location to keep on top of the newest publications that are coming out. Simply set up a monthly time to go to the site, and create a date range and keywords in the search field to see what your peers are doing and keep abreast of the latest studies in your field. A synopsis from an important recent publication found on PubMed regarding SVG graft patency in CABG surgeries is included below:

pubmed.ncbi.nlm.nih.gov/31455868

Social Media Groups for Cardiothoracic Surgeons



[American College of Surgeons](#)



[AATS Journals](#)



[Open Heart Cardiology Journal](#)

Intraoperative Graft Assessment during CABG Cited As Key to Saphenous Vein Graft Patency

Coronary artery bypass grafting (CABG) remains the gold standard treatment for treating coronary artery disease, the leading cause of death in developed countries. Despite strong evidence that arterial grafts are longer lasting and have additional survival benefits, saphenous vein grafts (SVG) harvested from a patient's leg, are still the most commonly used conduit because of their abundance, and ease of harvest.

However, the common use of SVGs does not come without associated costs. SVG's main disadvantage is their relatively poor long-term patency when compared to internal mammary artery grafts. As many as 20% of saphenous vein grafts fail within the first year after CABG surgery, and up to 50% fail by 10 years post-op. Significant disease also is seen in half of the remaining grafts. SVG failure can result in major adverse events including myocardial infarction, re-interventions, and death.

In a 2020 publication, preeminent surgeons across the globe collaborated to produce a comprehensive review about the use of SVGs during CABG surgery. Their report underscored the importance of intraoperative graft assessment to identify grafts that might fail early so that they could be revised early, thereby improving graft patency. Other best practices cited to improve long-term SVG patency rates included: meticulous SVG harvesting technique, good intraoperative preservation and storage strategy to minimize SVG endothelium ischemia and reperfusion injury, meticulous anastomosis technique, careful anatomical considerations, and optimal postoperative pharmacological treatment.

Reference:

Caliskan E, de Souza DR, Böning A, Liakopoulos OJ, Choi YH, Pepper J, Gibson CM, Perrault LP, Wolf RK, Kim KB, Emmert MY. Saphenous vein grafts in contemporary coronary artery bypass graft surgery. *Nat Rev Cardiol.* 2020 Mar;17(3):155-169. (Transonic Reference # 118902AHR)

Adding More Tools to Your Treatment Toolbox

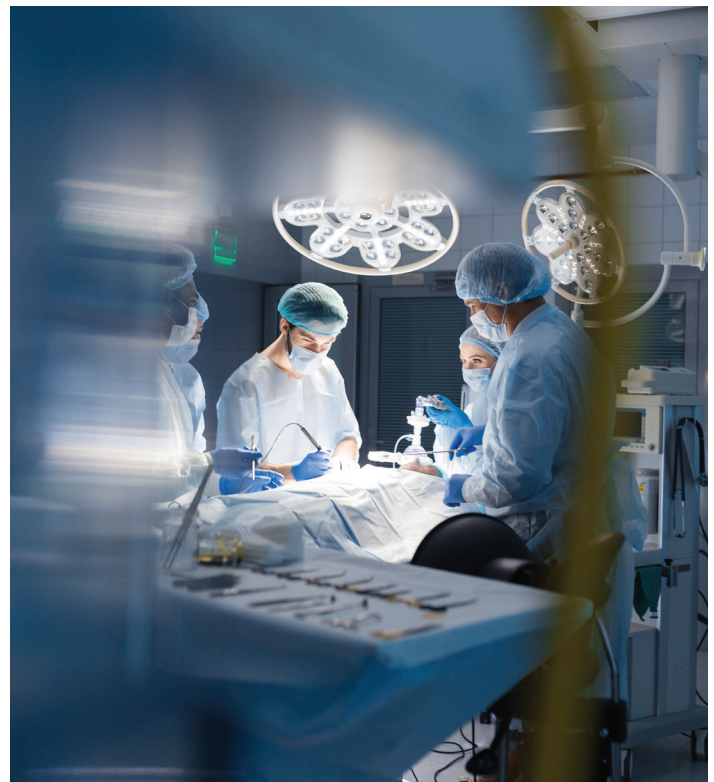
The right technology can provide the assistance you need to improve outcomes and prepare for the future. Many new technologies are being studied and some longer-term technologies are becoming the standard of care. For example, The European Society of Cardiology and European Association for Cardiothoracic Surgery have included [flow measurement in their myocardial revascularization guidelines](#).

“Besides continuous ECG monitoring and transoesophageal echocardiography immediately after revascularization, intraoperative quality control may also include graft flow measurement to confirm or exclude a technical graft problem. Transit-time flow measurement is the most frequently used technique for graft assessment and has been able to detect the 2% – 4% of grafts that require revision. In observational studies, the use of intraoperative graft assessment has been shown to reduce the rate of adverse events and graft failure, although interpretation can be challenging in sequential and T-graft configurations,” the authors write.

A recent article by Drs. David Taggart, Rony-Reuven Nir and Gil Bolotin entitled “New Technologies in Coronary Artery Surgery” lists the following technology reviews and keys to successful grafting:

Multiple Arterial Grafts

Graft patency is key to successful CABG. For longer graft survival, the use of multiple arterial conduits, left and right internal mammary arteries (LIMA/RIMA), radial artery (RA), or gastroepiploic artery as bypass conduits is important. IMA grafts have have a high proportion of elastic rather than muscle or adventitia in their structure causing them to exhibit potent anti-atherosclerotic effects. More than 90% of IMA grafts remain patent 10 years after CABG surgery. In contrast, up to 75% of saphenous vein grafts are occluded or severely diseased 10 years post CABG. Currently, multiple arterial grafting (MultArt) is currently performed in < 13% of CABG operations. Use of bilateral mammary arteries (BIMA) is used in only about 5% of CABG surgeries in the U.S., and fewer than 10% in Europe.



Off-Pump CABG (OPCAB)

Off-pump CABG was popularized because it seemed to show more potential in mitigating the adverse effects of extracorporeal circulation in an increasingly elderly population undergoing CABG. Yet, various trials reported no significant differences in the primary outcome composites of death, stroke, myocardial infarction, repeat revascularization, or new renal replacement therapy at 30 days and at one year after surgery. Thus, the anticipated benefits of off-pump surgery have not yet materialized in clinical practice for most patients, possibly due to the fact that advances in extracorporeal perfusion have made cardiopulmonary bypass much safer. For most patients undergoing CABG today, the use of bilateral internal mammary arteries is far more important than whether surgery is performed on- or off-pump.

Hybrid CABG

A hybrid approach combines minimally invasive LIMA-LAD bypass procedures with catheter-based interventions on the circumflex or right coronary arteries. Hybrid procedures theoretically provide complete revascularization while keeping the survival benefit and angina relief of a LIMA-LAD graft and avoiding the morbidity of sternotomy. Hybrid CABG is more laborious and cost-intensive compared to traditional CABG or stenting, but a designated hybrid operating room would allow performing a single-session procedure at one place without the need to transfer the patient from the operating room to the catheterization laboratory.

Minimally Invasive Direct CABG (MIDCAB)

The reported results for MIDCAB, during which only a small incision is made via a small thoracotomy on a beating heart, are excellent. Procedural success is estimated at 98%; operative mortality is <1%; reoperation rates for bleeding vary from 1% to 3%; chest wound complications occur in 2%-3%; pulmonary complications are seen in 1%-3% of patients; angiographic patency in the early postoperative period and at 6 months is outstanding; and re-intervention for ischemic events is atypical. In the U.S., and fewer than 10% in Europe.

Robot-assisted CABG

Robotic-assisted CABG is associated with a shorter hospital stay, less time on mechanical ventilation, fewer transfusions, and a more rapid return to full activity. However, operative times are considerably longer than for open procedures. Because of the added expense, difficulty of the procedure, and its steep learning curve, the routine use of surgical robotics in CABG surgery is reserved for select group of cardiothoracic surgeons who are willing to master both the techniques required and the technology.

Reference:

1. Taggart D, Nir RR, Bolotin G, "New technologies in coronary artery surgery," Rambam Maimonides Med J. 2013 Jul 25;4(3):e0018.)

Transonic's Flowprobes

With Transonic's Flowprobes, each instrument undergoes a rigorous quality check before it leaves the factory to assure that, with proper care, it lasts to its guaranteed use date. Standard Flowprobes are guaranteed to last 50 uses or one year, whichever comes first. Our Warranty Return Rate on 50-use probes is less than 0.1%

Each Transonic perivascular Flowprobe is tailored to the specific application in which it will be used to measure volume flow. Coronary Flowprobes feature a long extended neck so that the surgeon can easily access vessels on the back of the heart. The high quality and workmanship in each Transonic Flowprobe coupled with our responsive customer support translate into superior product performance, fewer interruptions in the OR, improved outcomes, and lower cost per use.

Intraoperative Flow Measurement Technology

Graft patency is key in both short-term and long-term positive CABG outcomes. With surgical and technological advances, any early graft failure is unacceptable, yet it still occurs in up to 3% of CABG procedures. Today, intraoperative graft flow assessment is being used routinely to improve CABG outcomes and reduce costs. Its importance to identify grafts that might fail early so that they could be revised early is underscored in a 2020 publication* by a group of preeminent cardiothoracic surgeons from around the world and is called for in the 2018 European Myocardial Guidelines.

See How Our Flow Measurement Technology Can Help You



Schedule a 10-Minute Call

