One of the great legacies in surgery

The Michael E. DeBakey Department of Surgery was so named in 1999 to honor the great legacy of its iconic and longest-serving chairman, who led the department from 1948 to 1993. Dr. DeBakey and the surgeons he recruited and trained advanced the science of medicine, created innovative surgical instruments and techniques, and touched the lives of millions of people.

A prolific physician and teacher, Dr. DeBakey performed more than 60,000 cardiovascular procedures and trained more than 1,000 surgeons who now practice throughout the world.

Considered by many to be the father of cardiovascular surgery, Dr. DeBakey contributed trailblazing discoveries in surgical science and developed techniques that still serve as the basis of modern day surgery.

His contributions include, but are not limited to, his role in the performance of the first carotid endarterectomy (1953), excision and homograft replacement of an aneurysm of the abdominal aorta (1954), use of artificial graft material to replace the aorta (1954), aortocoronary artery bypass (1964), and left ventricular assist device implantation (1966).

The Michael E. DeBakey Department of Surgery salutes the ground breaking work of this great pioneer of surgery, biomedical research, and medical education who shaped the future of our department over the past six decades. We are inspired to advance the legacy of one of the great departments of surgery and chronicle our progress towards that goal in this report.
Message from the Chair

We are pleased to report that our department has continued its accelerated growth and development since the time of our last report, another exciting chapter in the annals of our history.

Our research program has expanded rapidly with funding levels that should take us to the top 40 in NIH ranking. Our new Research Core now manages over 30 ongoing clinical trials and more than $70 million in submitted grant applications. Our education programs have likewise advanced to attract the highest caliber of candidates to our residency programs. Our incoming board scores are in the top 15th percentile, and our new recruits are achieving the highest American Board of Surgery In-Training Examination (ABITE) scores in recent memory. Our undergraduate education programs, in turn, are inspiring many of our medical students – over 40 this year – to seek careers in surgery or surgical specialties.

No change in our department has, however, been more significant than that rendered by the joint venture completed by Baylor College of Medicine and Catholic Health Initiatives (CHI) in January 2014, which created the Baylor St. Luke’s Medical Center (BSLMC) as the academic healthcare center and critical care units at Baylor St. Luke’s Medical Center.

Amongst our other new faculty, we are pleased to welcome Dr. Joseph L. Mills Sr. as our new chief of the Division of Vascular Surgery & Endovascular Therapy and director of the Vascular Surgery Residency Program. An internationally renowned and accomplished expert in the area of limb salvage, Dr. Mills’ vast expertise and experience promises to boost our already highly successful vascular surgery programs and practices and further advance our standing in the field.

We are also very excited to welcome Dr. Steven A. Carley. Amongst our other new faculty, none can be considered more welcomed or more honored than Dr. Denton A. Cooley, who we were most pleased to greet back to the faculty of the Michael E. DeBakey Department of Surgery as Distinguished Emeritus Professor in a special ceremony marking the occasion held in summer, 2014. The event was attended by Baylor College of Medicine President Dr. Paul Klotman and many of Dr. Cooley’s colleagues from the Texas Heart Institute.

Dr. Cooley also joined us this past year for the 20th Congress of the DeBakey International Surgical Society, commemorating the 60th anniversary of our general surgery residency program. The two-day event was keynoted by Vice President Dick Cheney, a recipient of many of the medical advances innovated in the department by Dr. Cooley, Dr. DeBakey, honoree. As the new director of our surgical critical care residency program, Dr. Todd has overseen the recruitment of the largest critical care residency candidate pool in recent memory. Our outstanding recruit from Washington University, Dr. Robert E. Southard, shares responsibilities with Dr. Todd for developing our critical care programs, and has led our efforts establishing new surgical critical care units at Baylor St. Luke’s Medical Center.

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We also continue to cheer the great successes of many of our existing faculty members, including Dr. Joseph S. Coselli, who this past year assumed the presidency of the American Association for Thoracic Surgery, succeeding Dr. Sugarbaker a year after he too rose to this most prestigious office in the cardiothoracic field.

Among our many other faculty and resident recognitions and accomplishments of the past year, a singular achievement is that of Dr. Faisal G. Bakaeen, chief of cardiothoracic surgery at the Michael E. DeBakey VA Medical Center (MEDVAMC), who was appointed chair of the Veterans Affairs National Surgical Quality Data Use Group.

We also welcome our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn. Finally, this past year saw the launch of our Department of Surgery Incubator (DoSI), an innovation think tank led by Dr. William E. Cohn.
Department Leadership*

Todd K. Rosengart, MD
Chair, Department of Surgery

Bradford G. Scott, MD
Vice-Chair for Education

Scott A. LeMaire, MD
Vice-Chair for Research

Samer S. Awad, MD, MPH
Vice-Chair for Surgical Quality and Safety

John A. Goss, MD
Chief, Division of Abdominal Transplantation

Charles D. Fraser Jr., MD
Chief, Division of Congenital Heart Surgery

John A. Goss, MD
Chief, Division of Abdominal Transplantation

William E. Fisher, MD
Chief, Division of General Surgery

Joseph S. Coselli, MD
Chief, Division of Cardiothoracic Surgery

David J. Sugarbaker, MD
Chief, Division of General Thoracic Surgery

S. Rob Tood, MD
Director, Ginni and Richard Mithoff Trauma Center

Juliet Holder-Haynes, MD
Director, Surgery Core Clerkship

David E. Wesson, MD
Director, Faculty Education & Development

Samir S. Awad, MD, MPH
Vice-Chair for Surgical Quality and Safety

Larry H. Hollier, MD
Chief, Division of Plastic Surgery

Steven A. Curley, MD
Chief, Division of Surgical Oncology

Chongyi Chen, MD, PhD
Chief, Division of Surgical Research

Joseph L. Mills Jr., MD
Chief, Division of Vascular Surgery & Endovascular Therapy

Dana E. Wesson, MD
Director, Faculty Education & Development

William F. Cohen, MD
Director, Surgical Innovation

S. Rob Todd, MD
Director, Ginni and Richard Mithoff Trauma Center

Juliet Holder-Haynes, MD
Director, Surgery Core Clerkship

Barbara W. Trautner, MD, PhD
Director, Clinical Research

Joseph L. Mills Sr., MD
Chief, Division of Vascular Surgery & Endovascular Therapy

Changyi Chen, MD, PhD
Chief, Division of Surgical Research

Jed G. Nuchtern, MD
Chief, Division of Pediatric Surgery

Kenneth L. Mattox, MD
Chief of Staff and Surgeon-in-Chief, Ben Taub Hospital

Larry H. Hollier, MD
Chief, Division of Plastic Surgery

Steven A. Curley, MD
Chief, Division of Surgical Oncology

Chongyi Chen, MD, PhD
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Barbara W. Trautner, MD, PhD
Director, Clinical Research

Joseph L. Mills Sr., MD
Chief, Division of Vascular Surgery & Endovascular Therapy

*Highest departmental title or rank is indicated
Our mission is to provide healthcare services that are of the highest quality. We strive to deliver compassionate care for all our patients.

Since its beginning, our department has always been a place of innovation and excellence. In fact, the inscription on Dr. DeBakey’s Medal of Honor reads, “My goal in life has been the pursuit of excellence.” We are building on that rich heritage as our faculty continues to expand and attract world renowned surgeons with advanced subspecialty training and expertise. We use innovative techniques including advanced minimally invasive and robotic pancreatic, hepatobiliary, gastrointestinal, endocrine, vascular, and thoracic surgery, and offer innovative clinical trials including immunotherapy for cancer. We are serving our local population, including Harris County residents, and our veteran population. Our surgeons, who are leaders in their fields, are attracting patients who are willing to travel great distances to access truly expert care and our proven superior outcomes.

Our surgical team consists of leaders of a tertiary and quaternary referral center in part because of our reputation for being able to handle the most complex surgical problems, from thoracoabdominal aortic aneurysms to cancer with liver metastases or peritoneal disease. But we are doing more than just taking on these tough challenges in surgery and saving the lives of critically ill patients. We are committed to providing a patient-centered experience that is second to none. An important part of our strategy has been the creation of an innovative, integrated program for Acute Care Surgery Services (Trauma [Ben Taub Hospital only], Surgical Critical Care, and Emergency Surgery) spanning all of our hospitals. This program allows us to immediately respond to surgical emergencies while avoiding interruptions in the care of our patients in clinic, the hospital, or the operating room. We have recruited some of the most talented and experienced surgeons in the country to staff this program. As a team, they are available at all times to provide a new focus on acute surgical emergencies and surgical critical care.

With subspecialty training and American Board of Surgery special certification in Surgical Critical Care, this new surgical group is implementing the most contemporary, evidence-based ICU protocols shown to improve outcomes in critically ill patients.

Conjoined twins undergo successful separation at Texas Children’s Hospital

The department proudly joined the celebration for the successful separation of Knatalye Hope and Adeline Faith Mata, conjoined twin girls born at Texas Children’s Pavilion for Women in April 2014. The surgery, which took place on Feb. 17 at Texas Children’s Hospital, was an extraordinary team effort of 12 Baylor faculty surgeons, six anesthesiologists, and eight surgical nurses who worked for approximately 23 hours on Knatalye and 26 hours on Adeline, the official separation of the twin girls occurred approximately 18 hours into the surgery.

The team prepared for this surgery for months by working with our radiology experts to build a 3-D model of the twins’ organs, conducting simulations of the actual separation surgery, and participating in many multidisciplinary conferences. Knatalye went home by the end of April and Addy followed in June.
The mission of the department's research program is to conduct important research in surgical disease to improve treatment and quality of life for affected patients, and to train future leaders in academic surgery.

We are dedicated to creating an environment where surgical investigators discover new knowledge, develop innovations, and translate research advances into improvements in patient care. Our efforts to accomplish these goals coalesce into three distinct programs:

- **Division of Surgical Research (DSR)**, led by Dr. Changyi (Johnny) Chen, brings together our basic science researchers and PhDs in a unit that encourages collaboration and interaction with clinicians and physician scientists;
- **Surgical Research Core**, led by Dr. Barbara W. Trautner, is a team of nearly twenty professionals, including grants managers, clinical research coordinators, database managers, a biostatistician, a medical illustrator, and a medical editor and writer, who provide easily accessible, centralized expertise in clinical research;
- **Resident Research Training sabbaticals**, which offer to four of our eight general surgery residents two-year focused research sabbaticals during their general surgery residency training.

Surrounding these core programs are a matrix of faculty seed grants, DSR-sponsored weekly research symposia and grant review sessions, newly created resident research requirements that are coupled with research training sessions led by vice chair for research Dr. Scott LeMaire, and our departmental innovation incubator led by Dr. William Cohn, all designed to foster and support the research mission. A growing number of campus-wide databases offers the promise of clinical research evaluating patient care provided “The Baylor Way.”
NIH-NHLBI Grant for Cardiac Cellular Reprogramming

Dr. Todd Rosengart, professor and chair of Surgery, was awarded a four-year, $3 million NIH-National Heart, Lung, and Blood Institute R01 grant for his research proposal titled, “In situ cardiac infarct cellular reprogramming.” The goal of this research is to transdifferentiate scar fibroblast cells into new cardiomyocytes in situ through injection of reprogramming gene cocktails into areas of myocardial infarction, as an alternative to transplant or assist device implantation for patients with end-stage heart disease.

Dr. Rosengart, one of the pioneers in the field of gene therapy whose work began in the early 90s, now leads a team of scientists engaged in the study of cardiac cellular reprogramming. He holds twelve patents, including those for methods to induce angiogenesis.

NIH Grant for Pancreatic Cancer Research

Dr. Qizhi Cathy Yao, professor of surgery, received a five-year, $2 million NIH R01 grant for her study entitled, “A novel miR-198 replacement therapy for pancreatic cancer.” Dr. Yao and her team recently discovered a tumorigenic factor interactome connected through the tumor suppressor miR-198 in human pancreatic cancer patient samples and confirmed miR-198 was tumor suppressive. Dr. Yao is investigating the possibility that miR-198 and the interactome could serve as a potential prognostic marker and that miR-198 replacement therapy could be used as a therapeutic agent to treat pancreatic cancer.
Resident Research Day Symposium

Each year we celebrate our Resident Research Day Symposium, a half day “time out” from daily clinical activities that highlights the exciting research efforts of our residents, fellows, and students. In 2015, we opened this exciting day with an inspiring keynote address given on gender disparities in surgical research by Dr. Melina R. Kibbe, department of surgery professor and vice chair of research at Northwestern University. The submitted abstracts, representing nearly 100% resident participation, were delivered as podium and poster presentations before an audience of over 200.

The submissions by trainees and students interested in surgery were judged by a panel of guest physician-scientists. Presentation winners received a certificate of recognition and funding to attend a scientific conference of their choice.
Dr. Mattox Honored as Second Vice-President of the ACS

Kenneth L. Mattox, MD was this past year elected second vice-president of the American College of Surgeons (ACS), the world's largest surgical professional society. Coincident with this honor, the ACS also announced plans to create the Kenneth L. Mattox International Lectureship and Scholarship Program under the direction of the ACS Committee on Trauma—a singular honor afforded only the most esteemed members of our professional community.

Dr. Mattox has been a long-serving member of the ACS since becoming a fellow in 1975. He was on the Board of Governors from 1985 to 1991, and again from 1997 to 2004. He also participated on many of its committees and leadership councils; he was chairman of the Medical Device Committee (1983-1985) and senior member of the Committee on Trauma (1989-1995), among others.

“Do your work, ‘before’ you go to work.”
- Dr. Michael E. DeBakey

The true strength of our department is a gifted faculty led by a cadre of luminaries each of whom is world-class in their own right.

“A leader should have a powerful vision shared by others, and should have the ability to influence people to achieve their goals.” - Dr. Changyi Johnny Chen

“A leader takes his people, both those who are comfortable with the status quo and those who are resistant to change, through the entire process of growth and innovation.” - Dr. Joseph S. Coselli

“Leadership means being a positive example to the people who work with me and around me. It means being a mentor and serving the people that I work with.” - Dr. Steven A. Curley

“Being a leader means to serve. It’s about how can I help everybody in my division grow their practice and their program and achieve their goals and the goals of the division.” - Dr. William E. Fisher

“A leader has the ability to help others move ahead in their careers, supporting both established and developing faculty members. A leader leads by example and is patient because his job is never finished.” - Dr. John A. Goss

“I think that it is very important that a leader articulates a vision that everyone can sign on to and all row in the same direction.” - Dr. Larry H. Hollier

“A leader can be like a shepherd: he guides the flock to a destination he has clearly in his mind but can be flexible about how to get there. I follow the shepherd model.” - Dr. Joseph L. Mills, Sr.

“A leader must have a clear sense of what he wants to achieve. He must develop or assemble a team that is capable of realizing these goals and facilitate their attempts to achieve them.” – Dr. Jed G. Nuchtern

“A leader constantly clarifies the team’s purpose and keeps the team’s focus on its step by step attainments. A leader understands that clarity of purpose and focused attention are the essence of excellence.” - Dr. David J. Sugarbaker

“Leaders develop an inspired vision of where they want their group to be. When leaders are successful they can guide both colleagues who may be and those who may not be on their side to attain that goal.” - Dr. S. Rob Todd
Innovation Incubator

The Department of Surgery Incubator (DoSI) represents a new addition to our translational research efforts. Led by Dr. William E. Cohn, the DoSI brings together faculty, scientists, residents and students who meet monthly to exchange ideas and develop translational innovations that may have commercial potential. To date, the DoSI has produced half a dozen new patent applications, several of which we expect to go on to issuance as potential commercial licensing opportunities.

Projects currently underway include development of a new means of deploying fenestrated aortic grafts, an online patient compliance tool, a wireless lower extremity compression device, a TAVR and stent device, a self-cleaning videoscope, and even a new form of surgical glove application.

The exchange of ideas engendered by the DoSI represents academic medicine functioning at its highest level. We are pleased to sponsor and support this creative enterprise for the advancement of surgical science and the good of our patients.

We seek to improve health, education, and research by supporting our faculty members and staff to discover and achieve top results, and establish professional collaborations essential for scientific and surgical progress.

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It is our vision to promote healthy communities by working with local, regional, and global partners to develop public service initiatives that fulfill unmet needs associated with access to healthcare.

Our department faculty is widely engaged in community outreach regionally and worldwide to help disseminate safe and high quality health care to those in need. A few examples of these initiatives are:

- **PurpleStride Houston**, back this year, will include the Elkins Pancreas Center team participating in the 5K run and family-friendly walk which raises awareness and support for pancreatic cancer. Dr. George Van Buren II is honorary chairman of the event this year, a role held previously by Dr. William E. Fisher in 2012. The event is organized by the Pancreatic Cancer Action Network which has funded researchers in our group in the past.

- **Smile Train**, the largest organization in the world providing care for children with cleft lip and cleft palate problems, recently appointed Dr. Larry H. Hollier as chair of its Medical Advisory Board. Dr. Hollier and his colleagues have been on numerous trips to Haiti sponsored by Smile Train, and have travelled with other organizations to Southeast Asia, Central America and Africa to care for children with cleft deformities and serious burn injuries. Additionally, Dr. Laura A. Monson traveled to Egypt and Dr. Edward Buchanan traveled to Tanzania to treat these children as well.

- **Faith In Practice**, a non-profit, ecumenical Christian organization that seeks to improve the physical, spiritual, and economic conditions of the poor, recently welcomed Dr. Oluyinka O. Olutoye and Dr. Irving J. Zamora on their medical mission trip to Antigua, Guatemala. Dr. Olutoye is an active medical missionary who has participated in 20 trips to seven countries throughout Asia, Africa and Latin America in the past seven years.

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**Project ECHO: TeleConferencing Texas and Beyond**

Baylor St. Luke’s Medical Center launched an exciting telehealth program, Project ECHO (Extension for Community Healthcare Outcomes), led by Dr. Norman Sussman professor of surgery, Project ECHO medical director and hepatologist, and project coordinator, Lissette Escamilla. Project ECHO enables specialists like Dr. Sussman to coach primary care providers throughout the State of Texas in treating patients who have been diagnosed with chronic disease, using telecommunication. After remote primary care providers and specialists make their case presentations, the Project ECHO BSLMC team is able to recommend the appropriate course of action for treatment.

Project ECHO provides a great alternative healthcare option to Texas cities and rural communities that may otherwise lack access to specialized care that can be provided by our department faculty.
Celebrating our 500th Liver Transplant at Baylor St. Luke's Medical Center

Under the direction of Dr. John A. Goss, the 22 faculty members and the staff of the Liver, Kidney, and Pancreas Center support adult and pediatric transplant programs across the Texas Medical Center. Our surgeons and staff provide transplantation services at Baylor St. Luke's Abdominal Transplant & Liver Disease Clinic, Texas Children’s Hospital, and the Michael E. DeBakey VA Medical Center (MEDVAMC), which in the past year added kidney transplant to its existing liver transplant program and became one of only five VA centers to perform kidney transplants for veterans.

Our liver transplant program is one of the busiest in the nation. Since 1998, our surgeons have performed over 1,500 liver transplants, with outstanding results. In 2014, we celebrated the 500th liver transplant performed at Baylor St. Luke’s Medical Center. In the past year, over 100 liver transplants were performed by division surgeons, achieving one of the highest survival rates in the country. Pediatric cases counted for almost one-third of these transplants, making this program at Texas Children’s Hospital one of the largest in the United States.

Reflective of this astounding track record, this past year Dr. Goss was awarded the Baylor College of Medicine Master Clinician Lifetime Award in recognition of his 17 years of exemplary and consistent clinical service, commendable leadership skills, and continuous service to the community. Speaking of this recognition, Dr. Goss commented, “It’s a very nice feeling to know that we’ve led the way within the Texas Medical Center when it comes to liver transplantation, and helped so many patients.”

Dr. Christine A. O’Mahoney leads the division’s kidney transplant program alongside Dr. Goss. Under her leadership over the past two years, the kidney transplant group has made extraordinary advances. The kidney transplant program at the MEDVAMC was started in 2014 and is expanding this year with the initiation of a living donor program. At BSLMC, living donor transplants have increased by over 60%, and length of stay has decreased by over 50%. Kidney transplant patient and graft survival are the highest ever achieved – at or near 100% in both cases, with similar outstanding results at Texas Children’s.

In order to meet these growing clinical and academic responsibilities, assistant professors Dr. Abbas Rana and Dr. Saira A. Khaderi were recently recruited to the division as new faculty. Drs. Rana and Khaderi, together with fellowship graduate and now instructor Dr. Ronald Cotton, are actively involved in clinical outcomes and translational research in abdominal transplantation and collaborate with the NIH-funded Advanced Liver Therapeutics Research Center, which conducts over 40 clinical trials annually under the direction of hepatology chief Dr. John M. Vierling.

The Immune Evaluation Laboratory managed by the division has experienced a meteoric rise in its activities over the past two years, recently adding lab services for the VA Renal Transplant Program. In order to meet these new clinical demands, lab director Dr. Ronald H. Kerman recently welcomed Dr. Peter Jindra from UCLA as the new assistant laboratory director. Dr. Jindra's contributions have been critical to the successful growth of the HLA lab, now performing over 22,000 studies annually.
World Leaders in Heart Transplant and Circulatory Support

The Division of Cardiac Transplantation & Circulatory Support has been a leader in the world of transplant and circulatory support surgery. The first successful cardiac transplantation in the U.S. was performed at Baylor St. Luke’s Medical Center (BSLMC) by Dr. Denton Cooley in 1968. The cardiac transplant program was renewed at the Texas Heart Institute (THI) at St. Luke’s in 1982. Under the leadership of Dr. O.H. Frazier, a total of more than 1,300 heart transplants and over 1,200 VAD implants have been performed at THI/BSLMC, making it one of the world’s highest volume programs. Currently, with Stanford-trained assistant professor Dr. Steve K. Singh joining the faculty in 2013, the program remains a leader in the field of surgery for the failing heart.

Since the early 1960s when Dr. Michael E. DeBakey obtained the first federal grant to develop an artificial heart, Baylor has remained a world leader in the surgical treatment of heart failure. The expertise of Dr. Frazier, a professor of surgery at Baylor College of Medicine, and of previous division chief Dr. George P. Noon and colleagues, led to the development of continuous flow (non-pulsatile) LVADs, the most common in worldwide clinical use today. The pumps developed by Dr. Frazier at THI include the HeartMate, the first implantable LVAD approved by the FDA; the HeartMate II, the first continuous flow pump approved by the FDA; the HeartWare, the first centrifugal force continuous flow pump; and the Jarvik 2000, the first pump to demonstrate the feasibility of blood-washed bearings and the cornerstone of all subsequent continuous flow LVAD development. In addition, the MicroMed DeBakey pump developed by Dr. DeBakey and Dr. Noon was the first continuous flow pump implanted.

The development of the total artificial heart was initiated by Dr. DeBakey in the Baylor labs in the 1950s. The Syncardia pump, the most widely used total artificial heart replacement in use today, is a direct descendent of this technology. The first non-tethered implantable total artificial heart was the AbioCor, which was developed in the THI labs under Dr. Frazier’s direction.

Today, Dr. Frazier and Dr. William E. Cohn, professor of surgery at Baylor and director of the Center for Technology Innovations at THI, are working through funding from the NIH and other supporters to develop a total artificial heart that will deliver blood by means of continuous flow rather than pulsation. This device is smaller, more reliable, and importantly, more durable than previous generations of artificial hearts. Continued NIH funding is also directed to the ongoing pulmonary hypertension studies of Dr. Noon and colleagues.

Innovation clearly remains the hallmark of the division and its visionary leaders. Fellowships in Transplant & Mechanical Circulatory Support, as well as in the TMC Bodesign program, represent important opportunities for trainees drawn from around the world to learn from these true giants of their specialty.
Over 10,000 Aortic Procedures and Counting

The Division of Cardiothoracic Surgery, led by Dr. Joseph S. Coselli, builds on the rich legacy of surgical innovators—Drs. Michael E. DeBakey, Denton A. Cooley, E. Stanley Crawford, and George P. Noon among others—who originated many of the 20th Century’s groundbreaking aortic and cardiac surgical procedures. Today, Dr. Coselli, the world’s most experienced aortic surgeon with more than 7,500 aortic and over 3,300 thoracoabdominal aneurysm repairs to his credit, leads a world-renowned team of over 15 surgeons and researchers innovating strategies for the evaluation and treatment of diseases of the aorta and cardiovascular system. The 1500-plus annual cardiac surgery case volume at Baylor St. Luke’s Medical Center and our Texas Heart Institute research and education affiliate—founded in 1962 by distinguished emeritus professor Dr. Denton Cooley—together with the more than 600 adult cardiac cases performed at our Michael E. DeBakey VA Medical Center (MEDVAMC) and Ben Taub Hospital surgery sites, makes our program one of the largest in the nation. The 350 cases performed at MEDVAMC are the most performed in the VA system, and our site is one of only five VA transcatheter aortic valve replacement programs—and the only one performing trans-apical procedures. Outcomes at the VA, as across the clinical program, are best in class, with morbidity and mortality rates that are amongst the lowest reported results nationally.

A growing portfolio of clinical and translational research efforts in the division, led by our (NIH-funded) vice-chair for research Dr. Scott A. LeMaire, includes more than 20 clinical studies in areas ranging from the genetics and molecular biology of aortic disease to applications of new heart valves and aortic grafts. Laboratory studies include the NIH-funded investigations of department chairman Dr. Todd K. Rosengart, whose research group is developing a means to use cellular reprogramming to convert cardiac scar tissue into new heart muscle (see page 13).

Our three-year cardiothoracic surgery residency program, accepting four residents per year, is the largest in the US. Buoyed by the addition of Division of General Thoracic Surgery chief Dr. David J. Sugarbaker and a new general thoracic track program, the application pool for our residency program under the direction of Dr. Coselli and Dr. Ross M. Reul, on behalf of Dr. Cooley, has been the strongest in recent memory.
From its inception at Texas Children’s Hospital in 1954 as one of the first of its kind, the Division of Congenital Heart Surgery has become a world leader in pediatric congenital heart surgery. Under the direction of Dr. Charles D. Fraser Jr., who is surgeon-in-chief of Texas Children’s, the division pursues its mission to provide the very best possible surgical care for children and adults with congenital and acquired cardiovascular disease in an environment that fosters cutting-edge research and educates tomorrow’s leaders in children’s cardiac surgery.

The six surgeons of the division perform over 900 operations annually, making it one of the largest congenital heart programs in the country. The division is part of Texas Children’s Heart Center, which is ranked number two nationally by U.S. News & World Report. The surgeons team with dedicated cardiologists, cardiovascular anesthesiologists, critical care doctors, perfusionists, mid-level providers, nurses, and pharmacists who are all trained to work specifically with pediatric heart patients.

In 2014, Texas Children’s Hospital celebrated the 30th anniversary of its heart transplant program. Thirty years earlier, Dr. Denton Cooley and Dr. Bud Frazier successfully completed the first heart transplant on an infant in the United States. This past year, the program also achieved a national record for the most transplantations in a single year: 32 heart and 16 lung transplant procedures.

The division’s Pediatric Cardiac Bioengineering Laboratory, a collaboration between Texas Children’s, Baylor, and Rice University, is developing innovative translational therapies for pediatric patients with cardiac disease. Research focuses on investigating the influences of biophysical cues and electrical stimulation on the development and maturation of heart cells and tissues. Significant progress is being made in growing heart tissue that can be used to repair congenital heart defects, replacing heart muscle that is absent or damaged.

The division offers one of only 11 national fellowships in congenital cardiac surgery recognized by the Accreditation Council for Graduate Medical Education. Participants in the fellowship program receive intense training in pediatric congenital heart disease, including heart and lung transplantation, in one of the world’s largest pediatric heart failure/ventricular assist device (VAD) programs. The programs at Texas Children’s, which are among the largest and most successful programs in the nation, also offer training in fetal surgery and adult congenital heart disease. This fellowship program has produced graduates that have taken leadership positions at prestigious institutions all over the world.

For more information on Congenital Heart Surgery education and collaboration opportunities, call 832-826-1929 or email Lesa Porterfield at lporter@texaschildrens.org.
The Division of General Surgery, under the leadership of Dr. William E. Fisher, is bringing a new array of specialty care to Baylor St. Luke’s Medical Center (BSLMC) at the same time it is introducing closed-unit critical care and acute care surgery services campus-wide. Equally important are the tremendous strides the division has made in the past 18 months integrating its clinical services and research programs across our campus, with cross-institutional faculty appointments, universal clinical care protocols, and campus-wide research databases. These unprecedented efforts set the stage for optimized patient care and a research powerhouse representing Baylor surgical care.

Specialty services brought to BSLMC by Baylor surgeons include a new endocrine surgery section led by Dr. James W. Suliburk, and new colorectal and bariatric surgery programs led by Dr. Avo Artinyan, and Dr. Juliet Holder-Haynes, respectively. The latter are deploying advanced upper and lower abdominal robotic procedures, all newly offered at BSLMC. Closed-unit critical care, introduced to BSLMC by Dr. Robert E. Southard, represents another major advancement of the BSLMC surgical program spearheaded by the division.

Major reorganization of our surgical programs is also underway at Ben Taub Hospital, the cornerstone of our training program and outreach to our community. Led by Dr. Kenneth L. Mattox, chief-of-staff, and Dr. S. Rob Todd, chief of general surgery and director of the Ginni and Richard Mithoff Trauma Center, Ben Taub continues to extend its decades-long status as one of the busiest level I trauma centers in the US—over 13,000 trauma patients and 3,000 acute care admissions annually. This iconic center, which serves approximately one million of the underserved in Houston, nearly a quarter of the entire population of Harris County, is undergoing a unprecedented expansion of its faculty and acute care surgery programs, and is leading efforts for coordinated trauma services across the CHI Houston Network.

Surgery services at the Michael E. DeBakey VA Medical Center (MEDVAMC), the primary healthcare provider for almost 130,000 veterans in Southeast Texas, continue to denote leadership across the VA system – both in volume and quality. Under the supervision of Dr. Samir S. Awad, operative care line executive and chief of surgery, the division’s seven surgeons have led the MEDVAMC to its ranking as the most advanced of the VA’s 141 medical centers. Emblematic of these efforts, the program recently received a national Chief Resident in Quality and Patient Safety Initiative Grant, funding fellowship training in Lean Management.
Division of General Thoracic Surgery

Lung Institute and Mesothelioma Treatment Center Founded

World-renowned surgeon Dr. David J. Sugarbaker arrived at the Texas Medical Center (TMC) last summer and promptly founded our new Division of General Thoracic Surgery, the Lung Institute, which integrates medical and surgical treatments for benign and malignant non-cardiac thoracic diseases, and the Mesothelioma Treatment Center (MTC), focused on the evaluation and treatment of patients with mesothelioma. Astoundingly, within its first year of operation, the division recorded over 1,100 clinic visits and 400 surgical cases cared for by a multidisciplinary team of experts ranging from surgeons to medical oncologists, radiologist, and social workers.

Associate division chief Dr. Bryan M. Burt and Dr. Shawn S. Groth, director of Esophageal Surgical Services—former trainees of Dr. Sugarbaker—recruited from Stanford University and UPMC, respectively, help lead a team that is quickly making its mark in the TMC.

Advanced techniques pioneered by Dr. Sugarbaker and colleagues that are now offered at BSLMC include extrapleural pneumonectomy and inter-operative heated chemotherapy for the treatment of mesothelioma. The Center for Dysphagia and Swallowing Disorders, co-founded and co-directed by Dr. Groth, likewise provides a comprehensive, multidisciplinary approach to benign esophageal disease, supported by a team of otolaryngologists, gastroenterologists, radiologists, speech therapists, and nutritionists to evaluate and treat swallowing difficulties.

Research within the division is also up and running. The General Thoracic Surgery Laboratory established by Dr. Burt, a recent recipient of the Franklin H. Martin MD, FACS Faculty Research Fellowship from the American College of Surgeons, is engaged in the study of the biology of mesothelioma. A number of clinical trials are already underway, and a thoracic tissue bank has already been established in partnership with faculty in the Division of General Surgery and other departmental research leaders.

Under the leadership of Dr. Sugarbaker, a new general thoracic track residency and a fellowship program are being added to our portfolio of post graduate training programs, and our cardiothoracic program this past year enjoyed its largest and strongest recruitment class in recent years.
A Key Contributor to a National Top Four Hospital

The Division of Pediatric Surgery, headed by Dr. Jed G. Nuchtern, includes 16 full-time faculty members and staff physicians at Texas Children's Hospital who combine dedication to patient care with exceptional education and training, advanced research, and development of a broad range of better treatments and individualized surgical procedures that range from the routine to the highly complex.

U.S. News & World Report in its 2015-2016 edition once again ranked Texas Children’s as one of the top four children’s hospitals nationally—the only hospital in Texas awarded an honor roll distinction. The pioneering efforts of previous division chief Dr. David E. Wesson to deploy the Pediatric National Surgical Quality Improvement Program, the first multispecialty outcomes-based program to measure the quality of children's surgical care, has been a critical tool to Texas Children’s achieving exemplary surgical outcomes. Dr. Allen L. Milewicz’s recent appointment as chief surgical officer of the Texas Children’s Hospital West Campus promises to further extend these outstanding clinical outcomes across the greater Houston region.

The many unique programs offered by division faculty include the pediatric bariatric surgery program led by Dr. Mary L. Brandt and the fetal surgery service led by Dr. Darrell L. Cass and Dr. Oluyinka O. Olutoye. The fetal surgery service leads the nation in both performing and developing techniques to diagnose and treat congenital abnormalities including cardiac conditions, twin-twin transfusion syndrome, spina bifida, and congenital diaphragmatic hernia in the unborn child.

Research is a priority in the division and its pediatric oncology studies have contributed to making Texas Children’s the U.S. News and World Report #1 hospital in Texas for treating pediatric cancer. Texas Children’s likewise recently earned top honors from Healthcare Informatics magazine for its program to identify best practices and improve outcomes for children with appendicitis. The recent recruitment of NIH-funded physician-scientist Dr. Sundeep Keswani, whose research focuses on wound healing, will add another facet to these innovations born at Texas Children’s.

In addition to its traditional residency training programs, the division also offers clinical and research fellowships in clinical surgery, oncologic cell biology, fetal therapy, and wound healing. In short, the Division of Pediatric Surgery exhibits excellence in all dimensions.
Top Press Ganey Scores Reflect Remarkable Dedication to Patient Service

Surgeons in the Division of Plastic Surgery combine the science of medicine with the art of plastic surgery at the Center for Aesthetic Surgery, Ben Taub Hospital, Houston Methodist Hospital, M.D. Anderson Cancer Center, the Michael E. DeBakey Veterans Affairs Medical Center, and Texas Children’s Hospital. Dr. Larry H. Hollier leads a team of 10 surgeons who perform a wide variety of reconstructive and other plastic surgery procedures on patients of all ages.

At Texas Children’s, a multidisciplinary team of otolaryngologists, dermatologists, radiologists, neurosurgeons, speech therapists, and genetic counselors provide specialized care in the treatment and surgical correction of craniofacial abnormalities, cleft lip and palate, and other complex and common congenital abnormalities.

At the Center for Aesthetic Surgery, an ultra-modern facility fully equipped to support state-of-the-art surgical techniques and surgical care, faculty surgeons led by Dr. Shayan Izaddoost address the cosmetic and reconstructive surgery needs of hundreds of adult patients each year.

The division has repeatedly earned top honors in Press Ganey scoring for patient service, reflective of a true commitment to patient care.

Research in the division focuses on improving the care of patients with tissue injuries and congenital deficiencies, including studies evaluating the biologic response to resorbable plate and screw fixation. The division is currently leading a large-scale study of outcomes in pediatric craniofacial surgery. Another large, multicenter trial led by assistant professor Dr. Rodger H. Brown seeks to determine the proper role of peri-operative antibiotics in breast surgery.

The six-year, multi-institutional Plastic Surgery Integrated Residency Program is one of the highest ranked programs in the country, and one of the oldest in the US. An associated Pediatric Plastic Surgery Fellowship Program offers advanced training in craniofacial surgery and other procedures specific to this population.
Achieving NCI Designation as a Comprehensive Cancer Center

Comprehensive Cancer Center designation is a rare honor – earned by only 45 centers nationally. The Division of Surgical Oncology under the leadership of Dr. Steven A. Curley, in collaboration with partners across Baylor at the Dan L. Duncan Cancer Center, joined these esteemed ranks for the first time in 2015. This designation recognizes, in part, the broad array of expertise in surgical oncology now offered by division faculty, including treatments for soft tissue, gastrointestinal, breast, skin, and endocrine cancers.

In addition to having extremely busy, highly specialized programs in liver, pancreatic, and colorectal cancer, led respectively by Drs. Steven Curley, William E. Fisher, and Avo Artinyan, the division this past year saw the launch of new sarcoma and melanoma programs under the supervision of associate professor Dr. Eugene A. Choi, a former trainee of Dr. Curley, who was recently recruited from the University of Chicago. Dr. Choi is partnering with UPMC graduate Dr. George Van Buren II to expand our Hyperthermic Intraperitoneal Chemoperfusion (HIPEC) program, now being applied also by oncologists in the Division of General Thoracic Surgery. Robotic and transanal endoscopic microsurgery procedures pioneered at Baylor by Drs. Fisher, Artinyan and Van Buren are likewise being advanced in a growing list of advanced oncologic applications.

To meet the needs of a growing program, our surgical oncology team was joined this year by assistant professors Dr. Hop S. Tran Cao and Dr. Cary Hsu, who add greater depth to very busy oncology teams led by Dr. Christy Chai and Dr. Nader Massarweh at the MEDVAMC and Dr. Eric J. Silberfein at Ben Taub Hospital. Whether new or existing, all faculty members are extensively engaged in clinical research aided by a growing list of cross-campus clinical databases.

Translation research in the division is highlighted by innovations in the Electromagnetic Field & Nanomaterials Research Laboratory of Dr. Steven Curley, which is led by PhDs Dr. Stuart Corr and Dr. Rita Serda. Supported by a $9 million grant to Dr. Curley from NeoTherma Oncology, Inc., these investigators are identifying new ways of treating liver and other cancers with novel radiofrequency ablation techniques augmented by nanoparticle delivery strategies—truly the exemplar of cutting edge research (see page 12).
The Division of Surgical Research (DSR), led by division chief Dr. Changyi Johnny Chen and vice-chair for research Dr. Scott A. LeMaire, includes 14 primary (PhD) and 14 joint faculty members primarily focused on basic and translational research. The mission of the division is to promote the development and growth of highly successful research programs by providing a supportive environment for investigators. Division PhD scientists work together with surgeons to investigate molecular mechanisms of surgical diseases and to develop new strategies for the diagnosis and treatment of these diseases, such as pancreatic cancer, breast cancer, aortic aneurysms and dissection, heart failure, mesothelioma, and neuroblastoma.

The division benefits from resources that include well-established human tissue banks, a wide variety of clinically relevant animal models, molecular biology and nanotechnology expertise, and integrative imaging. The DSR promotes scientific discussions and extensive collaborations through regular seminar series and grant review sessions, provides advice and technical assistance in conducting experimental studies, supports core utilization of equipment and resources, and sponsors the development of joint research projects, grants, and publications.

Joining its many other highly productive researchers, the division recently welcomed associate professor Dr. Rita Serda, assistant professor Dr. Stuart Corr, and assistant professor Dr. Jian-Ming Lu. Dr. Serda and Dr. Corr work together in using nanotechnology and radio waves to drive the accumulation of therapeutics at sites of pathology with the major goal of stimulating anticancer immune responses. Dr. Lu’s research focuses on the delivery of nanoparticle-gene/drug complexes targeted to cancer and vascular cells with antibodies or other specific proteins conjugated to PLGA-based nanoparticles.

Exemplifying the success of DSR scientists, special kudos go to longstanding DSR member Dr. Qizhi Cathy Yao, who received a 5-year NIH R01 grant award for her studies of pancreatic cancer (see page 13), and who also received the Barry Stephen Smith Memorial Pancreatic Cancer Award from the Dan L. Duncan Cancer Center for her pre-clinical study of pancreatic cancer immunotherapy.
Building a Limb Salvage Program for Texas and Beyond

The Division of Vascular Surgery & Endovascular Therapy this past year welcomed world-renowned vascular surgeon Dr. Joseph L. Mills Sr. as its new chief. Among his many achievements, Dr. Mills has served as president of the Association of Program Directors in Vascular Surgery, director and immediate past chair of the Vascular Surgery Board of the American Board of Surgery, and is currently a member of the Residency Review Committee (RRC) for Surgery. He is co-editor of the prestigious “Rutherford’s Vascular Surgery” (7th and 8th editions), the “go-to” textbook for vascular surgery.

Before coming to Baylor, Dr. Mills served as chief of the vascular surgery program at the University of Arizona (1994-2015), where he founded and co-directed the widely acclaimed Southern Arizona Limb Salvage Alliance (SALSA). Based upon this experience, Dr. Mills is building at Baylor a state-of-the-art Limb Salvage Service that will seamlessly integrate vascular surgery and podiatry in both outpatient and inpatient settings, with the goal of reducing amputations in patients with peripheral artery disease and diabetes.

With eight full-time faculty surgeons working across the Texas Medical Center, the division offers a full array of minimally invasive endovascular interventions as well as traditional open surgical procedures ranging from a new fenestrated aortic graft program to treatment for complex vascular trauma. As a foundation for its new programs, the division’s peripheral vascular lab was recently accredited by the Intersocietal Accreditation Commission (IAC). IAC accreditation is a “seal of approval” that patients can rely on as an indication that the facility has been carefully critiqued on all aspects of its operations considered relevant by medical experts in the field.

To support its robust existing clinical and research programs, the division looks forward to welcoming Dr. Bijan Najafi to its research team. With multiple NIH and SBIR research grants, Dr. Najafi will bring new expertise in diagnosing and treating gait and motor dysfunction, delivered to patients through highly innovative and entrepreneurial development efforts.

The two-year, ACGME-accredited Vascular Surgery Residency Program at Baylor has remained one of the premier vascular surgery training programs in the country since its establishment by Drs. Michael E. DeBakey and Dr. E. Stanley Crawford in 1970. To better meet the training needs of modern-day vascular surgery, a new “0-5” track has been submitted for approval to RRC with an anticipated start date of July 2016.
A core mission of the department is to inspire and train the next generation of surgeons by providing medical students with broad exposure and experience that meets core surgical competencies in both surgical knowledge and skills. Under the direction of clerkship director Dr. Juliet Holder-Haynes, associate program director Dr. Bindi Naik-Mathuria, assistant program director Dr. Stephanie Gordy and academic coordinator Ashley Crummedyo, our faculty are actively involved in all educational aspects of our medical student programs, including an eight-week core surgery clerkship rotation for third-year medical students and surgery electives for fourth-year medical students from Baylor and other schools. New additions to our curriculum include small group didactic sessions, sim lab training sessions, end-of-rotation oral exams to enhance eligibility for honors grades, weekly bedside Chairman’s Rounds, and an informal monthly “coffee club” meeting with the chairman.

In addition, we have recently expanded our medical student surgical electives to include cardiovascular surgery, vascular surgery, adult cardiac surgery, general thoracic surgery, and surgical oncology at Baylor St. Luke’s Medical Center; congenital cardiac surgery at Texas Children’s Hospital; adult cardiac surgery at Ben Taub Hospital; and Surgical Intensive Care Unit at the Michael E. DeBakey Veterans Affairs Medical Center (MEDVAMC).

Michael E. DeBakey Summer Surgery Program

The Michael E. DeBakey Summer Surgery Program encourages highly accomplished undergraduate students chosen from a national pool of candidates to pursue a medical career by allowing them to work side by side with medical students, residents, faculty, and healthcare staff in a hospital environment. Program director Dr. Shayan Izaddoost and academic coordinator Ashley Crummedyo have taken this venerated program to even greater heights. This past summer, the program committee selected 15 of 170 applicants from across the nation to participate in an eight-week program of “hands-on” clinical activities, faculty mentorship, and lectures. The program culminated with a memorable “Last Swan Song” event in which students presented their experiences to a departmental audience.
Our department is privileged to train over 100 residents and fellows annually in seven residency programs approved by the Accreditation Council for Graduate Medical Education: general surgery, thoracic surgery, vascular surgery, congenital cardiac surgery, plastic surgery, pediatric surgery, and surgical critical care. Our department also offers nearly half a dozen non-ACGME fellowships approved by the Texas State Board of Medical Examiners and provides additional training in specific areas of surgical interest such as aortic surgery, pediatric plastic surgery, and liver and kidney transplantation.

The number and qualifications of the over 4,000 applicants to our programs increase every year, a positive reflection of the strength of our training. This past year, the board scores of our incoming residents were in the top 15% nationally, and the in-service exam scores of our junior residents were the highest ever recorded for our program.

In addition to the outstanding commitment and qualifications of our trainees, much of the credit for the educational successes goes to our outstanding vice chair for education and general surgery program director Dr. Bradford G. Scott, general surgery associate program director Dr. Eric J. Silberfein, and lead academic coordinator Sydney Webster, who work together with our tremendous faculty, faculty education leadership, and administrative team leader Holly Church Shilstone. New programs instituted by this team and other department leaders include a sim lab, research training curriculum, and a global health initiative.

In collaboration with the College, we have also developed an ombudsman program to aid trainee feedback to program leadership. Our new wellness program coordinated by residents and faculty representatives featured our first faculty-resident kickball game, led by Dr. George Van Buren II and Dr. R. Mario Vera. This past year, we held our Second Annual Surgical Jeopardy competition for faculty and residents, and our Second Annual Sim Lab Skills Olympics.

Our specialty residency training programs are also thriving. This year, the number of applications to the thoracic surgery residency program increased by 75% and the number of applicants interviewed from top medical schools doubled. Our surgical critical care residency program received twice as many applications and the vascular surgery residency program will be expanded with an integrated (“0-5”) slot in 2016.
A Modern Facility for a State-of-the-Art Program

In 2014, we opened the doors to a beautiful new $2 million Baylor College of Medicine Simulation Center, hosted by the Department of Surgery as a core resource for the entire College. The renovated Sim Center is used by members of a number of Baylor clinical departments, including surgery, medicine, anesthesiology, and orthopedics. Built adjacent to and incorporating the historic “DeBakey Labs” in the main College building, the Sim Center features a wide variety of state-of-the-art computerized surgical simulators, a series of basic skills trainers, three fully-equipped operating rooms, and one imaging room with fluoroscopic imaging capabilities. The center also incorporates a classroom setting with high quality audio visual equipment and two-way conferencing capability for didactic and conference needs.

Sim Center director Dr. Avo Artinyan and assistant director Deborah J. Taylor lead and oversee this comprehensive resource for surgical education. The Center provides training for residents and fellows in standard and minimally invasive surgical techniques, training for medical students on the basics of knot tying and suturing, continuing medical education (CME) for practicing surgeons, and support to the biomedical industry as a core laboratory.

The Sim Center program carries on the decades-long history of the DeBakey Labs, which through the years have yielded life-saving medical devices, including the artificial heart, ventricular assist devices, and autologous blood salvage.

Accredited by the Association for Assessment and Accreditation of Laboratory Animal Care, the laboratories continue to serve as a site for preclinical studies and post-approval training in new surgical techniques.
A Multipurpose Support Team
Fostering a Growing Clinical Research Portfolio

The Surgical Research Core, led by Dr. Barbara W. Trautner and vice chair for research Dr. Scott A. LeMaire, includes a cadre of nearly 20 team members, including clinical trial coordinators, grant managers, database experts, a biostatistician, a medical writer and editor, and a medical illustrator. The core team serves all faculty members, trainees, and students in the Department of Surgery and their collaborators. This comprehensive clinical trial management service achieves efficiency through direct one-on-one contact with researchers, providing support for grant submission, clinical trial start up and management, and eventually manuscript preparation and submission.

As a result of this collaborative effort, the number of clinical trials under management by the Core has increased from 4 last year to 18 current active clinical studies (and an additional 12 in start-up). Our NIH funding has likewise increased by 250% in the past year (from $1.2 to $3.1 million), placing us in a predicted top 40 rank among surgery departments. Our total extramural research funding has increased from $4 million in 2013 to $8.6 million in 2015, achieved through a total of $39 million in grant submissions to the NIH, DoD, AHRQ, CPRIT, and multiple foundations in 2014.
Publication Highlights

Single- vs double-lung transplantation in patients with chronic obstructive pulmonary disease and idiopathic pulmonary fibrosis since the implementation of lung allocation based on medical need.
Schaffer JM, Singh SK, Reitz BA, Zamanian RT, Mallidi HR. JAMA 2015; 313: 936-948.
A comparison of single- vs double-lung transplantation outcomes observed between 2005 and 2012 showed that double-lung transplantation was associated with better graft survival than single-lung transplantation in patients with idiopathic pulmonary fibrosis, and with no survival differences in patients with chronic obstructive pulmonary disease at 5 years.

Transcatheter aortic-valve replacement with a self-expanding prosthesis.
This study showed that in patients with severe aortic stenosis who are at increased surgical risk, transcatheter aortic-valve replacement (TAVR) with a self-expanding transcatheter aortic-valve bioprosthesis was associated with a significantly higher rate of survival at 1 year than surgical aortic-valve replacement.

A randomized prospective multicenter trial of pancreaticoduodenectomy with and without routine intraperitoneal drainage.
This multicenter clinical trial produced level 1 data showing that the elimination of intraperitoneal drainage in all cases of pancreaticoduodenectomy increases the frequency and severity of complications.

Publications & Honors

In the past year the Michael E. DeBakey Department of Surgery faculty members and trainees published over 350 scientific articles and book chapters. Highlights of these accomplishments are provided below.

Major Funding

PI: Dr. Steven A. Curley “Basic and preclinical studies supporting kanzius radiofrequency (RF) field treatment of malignant solid tumors: basic science and preclinical data to support human clinical trials,” $3,252,972 (NeoThera Oncology Inc.)

PI: Dr. Steven A. Curley “Targeted nanoparticles and Kanzius RF field treatment of pancreas and liver cancer,” $1,981,341 (Kanzus Cancer Research Foundation)

PI: Dr. Scott A. LeMaire “Targeting the inflammasome to prevent thoracic aortic aneurysms and dissections,” $396,250 (National Institutes of Health)


PI: Dr. Todd K. Rosengart “In situ cardiac infarct cellular reprogramming,” $681,002 (National Institutes of Health)

PI: Dr. Qizhi Cathy Yao “A novel miR-198 replacement therapy for pancreatic cancer,” $393,627 (National Institutes of Health)

Published Textbooks


Honors & Awards

Faculty

Avo Artinyan, MD, MS: Fellow, American Surgical Association

Neal R. Barshes, MD, MPH: Society for Vascular Surgery EJ Wylie Fellowship (Mentor: J. Mills Sr., MD)

Faisal G. Bakaene, MD: 2014 TSFRE Alley-Sheridan Scholarship
Chair of the Surgical Quality Data Use Group (SQDUG) within the National Surgery Office

David H. Berger, MD, MHCMD: Editor-in-Chief, Perioperative Care & Operating Room Management

Bryan Burt, MD: American College of Surgeons Franklin Martin Faculty Research Fellowship Fellow, American Surgical Association

Mary L. Brandt, MD: Distinguished honoree at the Hearts of Gold Gala: Honoring Women in Health & Medical Science
Elected member of the American College of Surgeons Board of Governors Committee on Surgical Volunteerism and Humanitarian Awards

William E. Cohn, MD: Innovations in Cardiovascular Interventions Best Start-Up Award

Joseph S. Coselli, MD: President, American Association for Thoracic Surgery
Inaugural TSRA Travel Fellowship Mentor (A. Jassar, MD)

Steven A. Curley, MD: Chief, Oncology Service Line for CHI St. Luke’s Health

John A. Goss, MD: Baylor College of Medicine Master Clinician Award
George P. Noon Faculty Professionalism Award

Shayan Izaddoost, MD, PhD: Fellow, American College of Surgeons

Peter Jindra, PhD: Chair, American Society of Transplantation, Community of Practice Committee

Ronald H. Kerman, PhD: Fellow, American Society of Transplantation

Panagiotis Kougias, MD: Baylor College of Medicine Rising Star Clinician Award

Scott A. LeMaire, MD: Editor-in-Chief, Journal of Surgical Research
Michael E. DeBakey, MD, Excellence in Research Award

Kenneth L. Mattos, MD: Second Vice-President of the American College of Surgeons
Kenneth L. Mattos International Lectureship and Scholarship

Mónica E. López, MD: Healthcare Informatics Innovator Award

E. Dean McKenzie, MD: Fellow, American College of Surgeons

Allen L. Milewicz, MD: Chief Surgical Officer, Texas Children's Hospital West Campus

Bindi J. Naik-Mathuria, MD: Fellow, American Surgical Association

George P. Noon, MD: Roy M. Huffington Award for Excellence
2014 Ben and Margaret Love Foundation Bobby Alford Award for Academic Clinical Professionalism

Oluyinka O. Olutoye, MD, PhD: Fellow, American Society of Transplantation

Ourania Preventza, MD: 2014 TSFRE Alley-Sheridan Scholarship Fellow, American College of Surgeons

Todd K. Rosengart, MD: Chairman, Baylor-UT Affiliated Medical Service
Vice-Chair, Baylor Faculty Group Practice Committee

Bradford G. Scott, MD: Clinical Faculty of the Quarter, Baylor College of Medicine
Elected to Baylor’s Graduate Medical Education Executive Committee

Rita Serda, PhD: Academic Director of the Advanced Technology Core

At the Alumni Symposium & 20th Congress of the Michael E. DeBakey International Surgical Society, former Vice President Dick Cheney is interviewed by Dr. Todd K. Rosengart.
Photo by Margi Levin

Dr. Joseph S. Coselli (left), with Dr. Joseph A. Dearani, chair of Cardiovascular Surgery at Mayo Clinic. Dr. Coselli was the 25th John W. Kirklin Visiting Professor in Cardiac Surgery and Related Problems at Mayo Clinic in Rochester, Minnesota.
Honors & Awards
Residents, Fellows, and Students

Paulette Abbas, MD: Best Poster Award, Sixth Annual Texas Children's Surgical Research Day (Mentors: D. Cass, MD; O. Olutoye, MD, PhD; and M. López, MD)

Adesola C. Akinkuotu, MD: Best Oral Presentation, Sixth Annual Texas Children's Surgical Research Day (Mentors: D. Cass, MD; O. Olutoye, MD, PhD; and M. López, MD)

Muhammad Aftab, MD: Resident Research Poster Award, Adult Cardiac Surgery Section, 2014 American Association for Thoracic Surgery (AATS) 94th Annual Meeting

Jennifer Carpenter, MD: Association of Academic Surgeons Travel Award (Mentor: M. Brandt, MD)

Anand V. Ganapathy: Travel Scholarship to attend the 2015 Annual Meeting of the Society for Vascular Surgery. (Mentors: R. Gilani, MD and H. Mallidi, MD)

Ricky Haywood-Watson II, MD, PhD: Society of Thoracic Surgeons Looking to the Future Scholarship (Mentor: D. Sugarbaker, MD)

Jason Ho, MD: T32 fellowship (Mentor: S. Curley, MD)

Michael S. Hughes: Third place, Outstanding Poster Presentation at the 56th Annual National Student Research Forum (Mentors: H. Shen, MD, PhD and S. LeMaire, MD)

Irene T. Ma, MD: Second place, Commission on Cancer National Paper Competition (Mentor: S. Vasudevan, MD)

Ricky Haywood-Watson II, MD, PhD: Society of Thoracic Surgeons Looking to the Future Scholarship (Mentor: D. Sugarbaker, MD)

Michael S. Hughes: Third place, Outstanding Poster Presentation at the 56th Annual National Student Research Forum (Mentors: H. Shen, MD, PhD and S. LeMaire, MD)

Yesenia Rojas, MD: Best of International Society of Pediatric Surgical Oncology (IPSO) session (Mentor: J. Nuchtern, MD)

Brandi B. Scully, MD, MS: Women in Thoracic Surgery Scholarship (Mentor: S. LeMaire, MD)

Fariha Sheikh, MD: Starr Poster Resident Award, Association of Women Surgeons (Mentor: O. Olutoye, MD)

Yan Shi, MD: Best Oral Presentation, IPSO/SIOP Congress (Mentor: S. Vasudevan, MD)

Samuel Stal Research Award for outstanding research by a resident or fellow, Sixth Annual Texas Children's Surgical Research Day (Mentors: J. Nuchtern, MD and S. Vasudevan, MD)

Darrell Wu, MD: Finalist, C. Walton Lillehei Resident Award 2014 American Association for Thoracic Surgery, 94th Annual Meeting

Nader Zamani, MD: Travel Scholarship, Society for Vascular Surgery to attend the 2015 Vascular Annual Meeting

Yanqiu (Yan) Zheng, MD: American Society for Biochemistry and Molecular Biology Outstanding Poster Award at the 56th Annual National Student Research Forum (Mentors: H. Shen, MD, PhD and S. LeMaire, MD)
Peers-Reviewed Publications


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