

THE MICHAEL E. DEBAKEY DEPARTMENT OF SURGERY

2024

ANNUAL REPORT

The Cullen Tower

Baylor
College of
Medicine

Baylor
College of
Medicine

MICHAEL E. DEBAKEY
DEPARTMENT OF
SURGERY

#DeBakeySurgeon

On the cover

The Lillie and Roy Cullen Tower, currently under construction and set to open in 2026, will be the new home for Baylor College of Medicine School of Medicine and School of Health Professions. It is the first phase of Baylor's planned Health Sciences Park, an 800,000-square-foot project that will integrate medical education and research in a collaborative environment right next to patient care at Baylor Medicine and Baylor St. Luke's Medical Center. The campus is adjacent to Texas Medical Center's Helix Park, a 37-acre project that supports a collaborative mix of healthcare, life sciences and business.





18

Divisions, sections and centers



650

Faculty, staff and trainees



280

Full-time faculty

Top 20

Surgery graduate programs
U.S. News & World Report

I am pleased to present this year's annual report showcasing the remarkable achievements of the [Michael E. DeBakey Department of Surgery](#) in clinical care, research, education and innovation. These achievements continue to motivate patients and learners from around the world to seek our highly trained and specialized surgeons and scientists who advance medical care at renowned Texas Medical Center hospitals and at research centers. This past year, for the sixth consecutive year, the Department was ranked one of the top 20 departments of surgery in the nation by *US News and World Report*.

This year saw major clinical milestones: the first of a new generation of BiVACOR total artificial heart driven by a magnetically levitated rotor was implanted by Alexis Shafii, M.D., and Kenneth Liao, Ph.D., M.D. Dr. Liao also surpassed 600 robotic heart operations, making him one of the busiest robotic heart surgeons in the nation and Shawn Groth, M.D., one of the most active robotic esophagectomy surgeons in the country, surpassed 100 cases performed. Drs. Liao and Groth together launched our new Center for Robotic Cardiothoracic Surgery. Gabriel Loor, M.D., led our lung transplant program to over 100 transplants this year—making us one of the top five busiest programs in the nation. R. Taylor Ripley, M.D., also became the first surgeon in Texas and one of only two in the United States to perform a new surgical procedure for the newly recognized, painful Slipping Rib Syndrome, reflecting the culture of innovation that is a source of pride for our Department. Our Department faculty at Texas Children's Hospital were ranked No. 1 in the nation for both pediatric heart care and organ transplant volume and our transplant team there performed eight combined kidney and liver transplants for pediatric patients with rare genetic disorders, setting a new national record.

Our Department research programs led by Vice Chair for Research Livia Eberlin, Ph.D., also reached new heights, ranking 24th in NIH grant funding, with nearly \$8 million in credited funding. This achievement caps our \$20 million in extramural funding, including our first CPRIT award which was awarded to Thomas Milner, Ph.D., an internationally renowned pioneer in nano-photonics who will lead our new Michael E. DeBakey Center for Nano-Photonics.

Our education programs likewise continue to flourish, with new innovation and education research tracks recently added to our General Surgery Residency Program—one of the largest in the United States—and new fellowships launched in endocrine surgery, a second year in critical care surgery and others planned for colorectal and breast surgery.

Amongst nearly a dozen other new recruits, we are pleased to welcome Shanda Blackmon, M.D., MPH, who joins our Division of Thoracic Surgery from the Mayo Clinic to lead the Baylor College of Medicine Lung Institute, founded by David J. Sugarbaker, M.D., in 2014. Finally, among many other accomplishments and milestones that you will read about in this annual report, I am pleased to announce a transformative \$10 million endowment to the Department made by the DeBakey Medical Foundation. In a related development, the Michael E. DeBakey International Surgical Society, founded by Dr. DeBakey in 1976, was integrated into the Department this past year to maintain the reach and vitality of this alumni society honoring Dr. DeBakey.

Reflecting on this year's successes, I could not be prouder of our team's dedication to excellence, innovation and patient care. We are poised to continue pushing the boundaries of medical science and providing exceptional care to patients.

Todd K. Rosengart, M.D., M.B.A.
Professor and Chair, Department of Surgery
DeBakey-Bard Chair of Surgery
Vice President, Hospital Operations
and Quality Improvement
Professor of Molecular & Cellular Biology
Baylor College of Medicine

EDUCATION



94%

Resident approval
(ACGME survey)

With over 125 post-graduate trainees in 16 residency and fellowship programs, both integrated and traditional, we offer one of the nation's largest and most comprehensive graduate medical education programs. Our training spans from fellowships in minimally invasive cardiac surgery and pediatric craniofacial surgery to our seven-year global surgery and surgical innovation tracks. We recently introduced an endocrine surgery fellowship, offering unique experiences across four clinical settings and a range of adrenalectomy techniques, including transabdominal, retroperitoneoscopic and robotic approaches.

Our innovative learning methods include Movie Night, where trainees learn from de-identified intra-operative videos and human factors analysis of adverse outcomes, providing a safe space to identify and learn from cognitive and human performance errors in surgery. We are also proud of our undergraduate medical education programs, such as the DeBakey Summer Surgery Program, Rising MS2 Non-credit Introduction to Clinical Experiences and Research (NICER) and Student Biodesign Program.



125

Residents and
fellows

We are celebrating nearly a decade of growth for our global surgery residency track, the only NRMP-listed program of its kind in the United States. This program is complemented by our Global Surgery Advocacy and Policy Fellowship at Rice University's Baker Institute for Public Policy, as part of our new Center for Global Surgery.

This year also marks the acceptance of our third class of innovation residents, who will engage in an immersive experience with the Texas Medical Center (TMC) Biodesign Program. In their first year, they will focus on intellectual property development, followed by a second year working with a TMC entrepreneur-in-residence or their own startup to bring a new product to market.



Innovation Track: First of its kind in the nation

Carrying on the legacy of Dr. Michael E. DeBakey and today's great innovators, our first-of-kind, seven-year Innovation Track is entering the third year as a launching pad for future surgeon innovators. The NRMP-listed Innovation Track is one of the ten categorical general surgery positions offered within our General Surgery Residency Program.

The Innovation Track is a collaboration with Texas Medical Center Innovation and offers two additional years to the general surgery curriculum focusing on teaching residents how to bring new devices and therapies to market.

Residents work alongside other surgeon inventors, engineers, product designers and researchers to prototype, test and refine their ideas to bring them to clinical testing and commercialization. Trainees are immersed in the process of 3D printing, prototyping, funding, testing, patenting and other steps needed to bring intellectual property and other innovations from an idea to an FDA approved product that may improve patient care.

RESEARCH


\$8M

NIH funding


\$20M

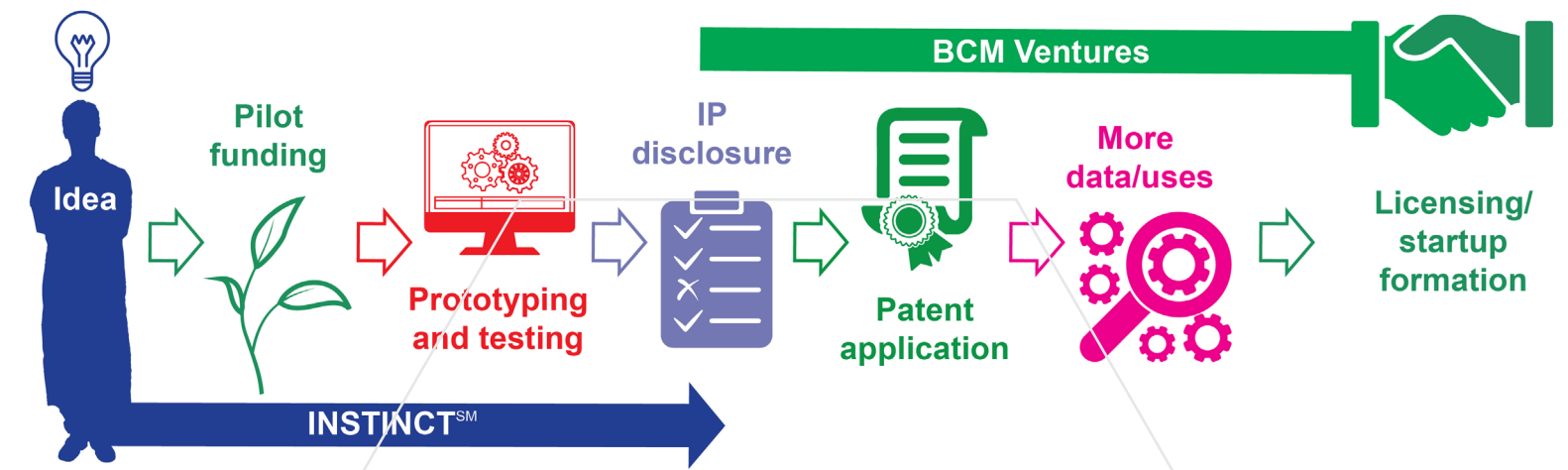
Extramural research funding

The Department's research reached new heights this year, with \$8.2 million in National Institutes of Health (NIH) grant funding securing the No. 24 spot in the Blue Ridge Institute for Medical Research rankings, up from \$4.8 million and 34th place in 2023. Our NIH funding, supporting ground breaking work in thoracic cancer immunotherapy, myocardial regeneration, and mass spectrometry-based tissue diagnostics, is complemented by nearly \$20 million in federal, state, nongovernmental organization and private funding.

This year also brought several firsts, including our first Cancer Prevention and Research Institute of Texas award—a \$6 million grant to recruit nano-biophotonics expert Thomas E. Milner, Ph.D., from the University of California to direct the new Michael E. DeBakey Center for Nano-Photonics. We also secured our first faculty K08 award, granted to Jennifer Leonard, M.D., in the Division of Trauma and Acute Care Surgery, for her research on post-traumatic immune dysfunction and its role in acute lung injury.

[ATLAS](#), our new Applied Statistics and Machine Learning for the Advancement of Surgery program strengthens our Office of Surgical Research, which now has nearly 100 staff members, including a new grant writer, grant manager and biostatistics support. The program provides coding and data science resources, enabling researchers to apply artificial intelligence and machine learning to surgery.

The Interdisciplinary Surgical Technology and Innovation Center ([INSTINCT](#)) offers support for design innovation, prototyping, invention disclosure and commercialization. INSTINCT's seed grant partnerships with Rice University and its annual Shark Tank competition, where Baylor entrepreneurs compete for \$35,000 and commercialization support, have helped drive intellectual property development for our institution.



INSTINCT: Fueling surgical innovation

Our ground-breaking Interdisciplinary Surgical Technology and Innovation Center (INSTINCT) continued its mission to drive innovation in surgery by empowering faculty, trainees and staff through events, grants, partnerships and seed funding. INSTINCT supports the development of ideas of department faculty, residents and others from early concepts to prototypes, trials and patenting.

This year, the annual INSTINCT pitch competition set in a “Shark Tank” format saw Vigilens AI, a team of four medical students, emerge victorious with their AI-driven device that reduces retained foreign objects during surgery by detecting instruments entering and leaving operating rooms and alerting surgical teams in real time. The winning team received an award of \$35,000, which is provided to allow prototype development and speed start up product commercialization.

INSTINCT also fosters innovation through its Idea Awards, which provide up to \$10,000 for early-stage prototyping and by hosting think tanks where surgeons, scientists and business experts discussed ideas and solutions. Collaborative efforts with Rice University's ENRICH program further bolsters innovation through networking events and seed grants, paving the way for future breakthroughs in surgical research and technology.

Department of Surgery ranked 24 in NIH research

The Department of Surgery achieved a program-high 24th grant award ranking in the Blue Ridge Institute for Medical Research (BRMR) listing of funding from the National Institutes of Health. Despite the competitive funding climate, the Department showed not only a strong increase in funding but also a strong increase in its ranking, improving from \$4.8 million to \$8.2 million in funding from 34th place in the 2023 BRMR ranking. The recent NIH awards highlight significant advancements and proposals across various fields of medical research, aimed at tackling critical health issues through innovative technologies and strategies.

Top 10 funded projects

The Department continues to carry on the legacy of Michael E. DeBakey with innovation and research. Here are the top ten new funded research projects from this past year.

Ravi K. Ghanta, M.D. - \$3.5 million (NIH R01)
Cell Based Immunomodulation to Promote Post-Infarct Myocardial Repair
Dr. Ghanta's team is developing treatments for heart failure patients that uses encapsulated mesenchymal stem cells (MSCs) and engineered cells secreting Interleukin-10 (IL-10) to improve heart function, reduce fibrosis, and promote immune repair.

R. Taylor Ripley, M.D. - \$3.3 million (NIH R37)
Targeting The Mitochondria to Overcome Resistance to Immune Checkpoint Inhibition in Malignant Pleural Mesothelioma
Dr. Ripley's team is enhancing immune checkpoint inhibitors by targeting mitochondrial proteins like PRMT5 and Mcl-1 in mesothelioma. This research aims to restore tumor sensitivity to treatment and improve survival rates.

Livia Eberlin, Ph.D. - \$3 million (Marcus Foundation)
Transforming Breast Cancer Surgery and Outcomes for Patients with the MasSpec Pen Technology
Dr. Eberlin's MasSpec Pen provides real-time metabolic and lipid data to surgeons with 93.7% accuracy. The goal is to optimize the device for better breast tissue identification and margin evaluation during surgery.

Ravi K. Ghanta, M.D. - \$2.8 million (NIH R01)
Cell Based Immunomodulation to Suppress Lung Inflammation and Promote Repair
Dr. Ghanta's team is developing therapies for acute respiratory distress syndrome (ARDS) using retinal pigment epithelial (RPE) cells encapsulated in alginate to deliver anti-inflammatory cytokines to the lungs and improve patient outcomes.

Sarah Woodfield, Ph.D. - \$2.4 million (NIH R01)
High-Risk Hepatoblastoma Dissemination Control by Oncogenic NRF2
Dr. Woodfield's team is studying NRF2 signaling and circulating tumor cells in high-risk hepatoblastoma to improve targeted therapies for children with this liver tumor.

E. Ramsay Camp, M.D. - \$1.6 million (NIH R01)
Defining The Role of Tumoral MHC Class I Expression In Mediating Colorectal Cancer Racial Disparities
Dr. Camp and Dr. Mark Rubinstein, from Ohio State University, are studying tumoral immunity's role in colorectal cancer racial disparities by analyzing patient samples and data to advance treatment strategies.

Swathi Balaji, Ph.D. - \$1.6 million (NIH R01)
Differential Changes in Energy Metabolism in Response to Mechanical Tension Give Rise to Human Scarring Heterogeneity
Dr. Balaji's team is investigating how energy metabolism under mechanical tension affects scar formation, focusing on PKM2-mediated glycolysis and Hsp27 phosphorylation. The goal is to develop personalized anti-fibrotic therapies.

Tamer Mohamed, Ph.D. - \$1.4 million (NIH R01)
Induction of Cardiomyocyte Proliferation Via Transient Expression of Cell Cycle Factors as a Promising Therapy for Heart Failure
Dr. Mohamed's team identified four cell-cycle regulators that induce cytokinesis in adult cardiomyocytes to improve heart function after myocardial infarction and aim to refine this method for safer application.

Ghanashyam Acharya, Ph.D. - \$1.2 million (DoD Vision Research Award)
Development of 3D-Fabricated Controlled Release Drug Delivery System to Stimulate Scarless Corneal Wound Healing
Dr. Acharya's team is developing a controlled drug delivery system to stimulate scarless corneal wound healing for improved clinical outcomes.

Ghanashyam Acharya, Ph.D. - \$1.1 million (Industry Contract)
Development of In-Situ Analgesic Delivery Module for Wound Closure Device
Dr. Acharya's team is working on injectable microparticles for sustained bupivacaine release to provide long-lasting pain relief at surgical sites, with rapid potential for clinical use.





Department hosts first summit on surgical human factors improving performance

The Department of Surgery this year hosted a unique two-day symposium dedicated to advancing the understanding and application of human factors in surgery. The symposium brought together experts, researchers and practitioners in surgery to share insights, discuss innovative ideas and foster collaboration to improve surgical performance, education and overall well-being. Guests and speakers included various experts from Baylor College of Medicine, Rice University, the American College of Surgeons and NASA's Johnson Space Center.

The symposium, chaired by Department Chair Todd Rosengart, M.D., and Bruce Gewertz, M.D., surgeon-in-chief at Cedars Sinai Health System, evolved from an exciting session moderated by both these leaders at the American College of Surgeons in October 2023. Symposium participants are working on a systematic literature review to advance the findings in the field.

CPRIT award brings nano-biophotonic expert to Houston

Thomas E. Milner, Ph.D., a leader in biomedical engineering, joins the Department through our first Cancer Prevention and Research Institute of Texas (CPRIT) award to lead our new Michael E. DeBakey Center for Nano-Photonics. Dr. Milner specializes in biophotonics and is inventor of innumerable light-energy related innovations. As an early developer of optical coherence tomography, he has contributed significantly to diagnostic imaging in ophthalmology, dermatology and cardiology. His dynamic cooling technology is deployed in over 2500 laser dermatological devices worldwide. Dr. Milner holds 55 patents, generating over \$100 million in royalties for universities and licensees, and is recognized for his expertise through fellowships with prestigious organizations worldwide.

In his leadership role, Dr. Milner will oversee the translation of nano-biophotonic technologies into clinical applications for cancer diagnostics and therapy. He aims to foster collaborations within Baylor, the Texas Medical Center and across Texas to develop novel photonic devices that enhance human health.

Dr. Milner is also the founder and president of multiple innovative companies, dedicated to translating scientific research into practical applications in optical clearing and medical imaging technologies. He has pioneered novel catheters for intravascular imaging and is a co-inventor of the globally recognized MasSpec Pen.

An accomplished scholar, he has authored over 200 peer-reviewed publications, cited more than 24,000 times. Before joining Baylor, Dr. Milner was the director and professor of surgery and biomedical engineering at the Beckman Laser Institute at The University of California, Irvine. Previously, he served as the Joe King Professor of Engineering at the Cockrell School of Engineering at The University of Texas at Austin, where he has been a faculty member in the Department of Biomedical Engineering since 2006.

HEALTHCARE



30K
Surgical cases



100K
Patient visits

Clinical excellence and innovation continue to define our surgeons' work across four renowned Texas Medical Center institutions: Baylor St. Luke's Medical Center (home to the Texas Heart Institute and Dan L. Duncan Comprehensive Cancer Center), the Michael E. DeBakey Veterans Affairs Medical Center (the largest VA hospital in the United States), Ben Taub Hospital (famous for trauma surgery), and Texas Children's Hospital (the busiest pediatric hospital in the nation).

In addition to launching the new Center for Robotic Cardiothoracic Surgery and record-setting lung transplant programs (see chair letter), our Texas Children's Hospital colleagues maintained their No. 1 spot for pediatric transplant volume. Surgeons at the Michael E. DeBakey VA Medical Center also made strides, becoming one of only two VA heart transplant programs and performing the first combined heart-kidney transplant in the VA system.

Our surgical oncologists celebrated moving into the new O'Quinn Medical Tower at McNair, an ultra-modern outpatient facility that triples the clinical footprint of our teams at the Dan L. Duncan Comprehensive Cancer Center, one of only three National Cancer Institute-designated comprehensive cancer centers in Texas. Our endocrine surgeons lead the way as the first team in Texas to perform thyroid nodule microwave ablation, the only team in Texas offering ablation for papillary thyroid cancer, and the only center in the United States to offer scarless transoral or percutaneous approaches for thyroid and parathyroid treatment.

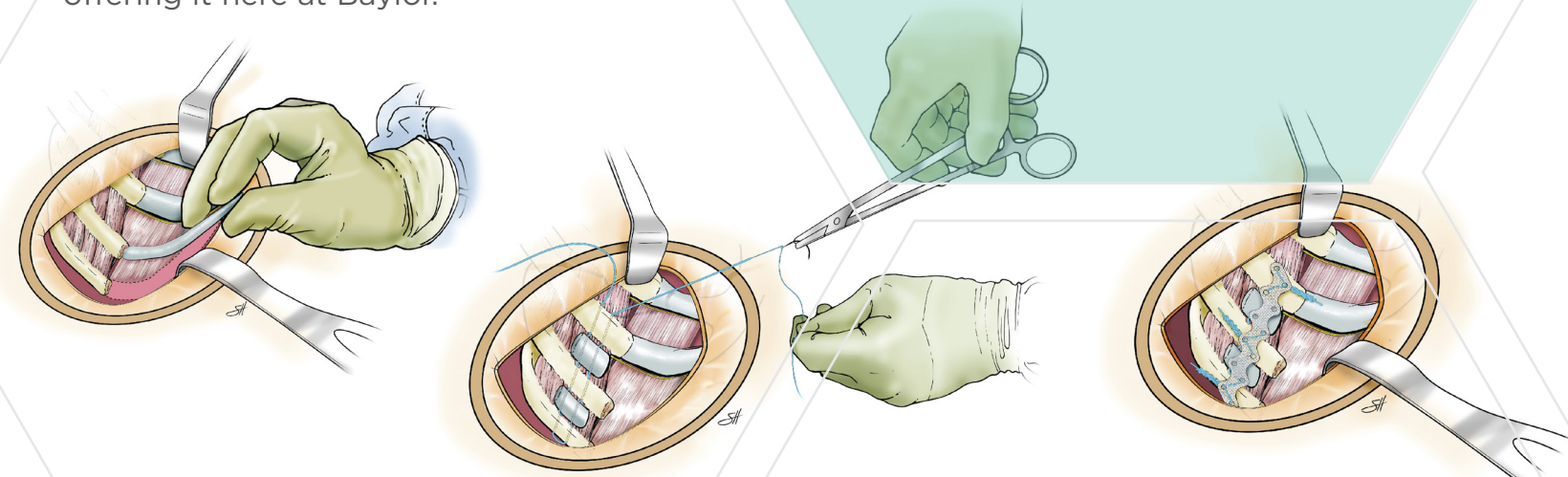
This past year, we expanded our clinical presence in the greater Houston area with new full-time faculty in cardiothoracic and breast surgery in The Woodlands, endocrine, vascular, and thoracic practices in Sugar Land and vascular surgery in Pasadena, TX.



New option for Slipping Rib Syndrome

R. Taylor Ripley, M.D., professor of surgery in the David J. Sugarbaker Division of Thoracic surgery, is now performing costal margin reconstruction, an innovative procedure that offers significant relief for patients suffering from the debilitating effects of [Slipping Rib Syndrome](#) (SRS). Dr. Ripley was the first in Texas to perform this novel technique and was trained by Dr. Adam Hansen at West Virginia University who pioneered the technique. Compared to this new procedure, other surgical techniques to treat SRS have a higher rate of recurrent symptoms and the need for additional surgery.

"Many times, these patients have pain for 10 or more years, have seen multiple doctors and have undergone invasive procedures that do not relieve the pain," Dr. Ripley said. "But this new costal technique has been shown to significantly lower the pain of patients, decrease the need for pain medications and may decrease the need for additional operations. We are extremely proud to be offering it here at Baylor."





Surgeons achieve robotic heart and lung surgery milestones - Launch Center for Robotic Cardiothoracic Surgery

Early this year, Kenneth K. Liao, M.D., Ph.D., professor and chief of the Division of Cardiothoracic Transplantation and Circulatory Support, achieved a significant milestone by completing his 600th robotic assisted heart surgery. Distinguished as the sole cardiac surgeon in the Texas Medical Center utilizing the da Vinci Robotic Surgical System for treating heart valve and coronary artery disease, Dr. Liao stands among a select few highly skilled robotic cardiac surgeons and one of the top five busiest robotic heart surgeons in the United States.

On the basis of this achievement and similar milestones set in esophageal robotic surgery by Shawn Groth, M.D., chief of the David J. Sugarbaker, M.D. Division of Thoracic Surgery, who has performed over 100 robotic esophagectomies and R. Taylor Ripley, M.D., director for clinical trials in the Department,

who has performed over 358 robotic thoracic procedures, the Department launched a new Center for Robotic Cardiothoracic Surgery co-directed by Drs. Liao and Groth.

The Center is based upon a specialized nursing unit and core clinical care team at Baylor St. Luke's Medical Center and includes a dedicated team of surgical care personnel. The Center will provide training in research with the goal of expanding the reach of robotic cardiothoracic surgery.

"The launch of the Center for Robotic Cardiothoracic Surgery marks a pivotal moment in our commitment to advancing minimally invasive procedures," Dr. Liao said. "By combining innovation with specialized training and research, we aim to not only enhance patient outcomes but also shape the future of robotic surgery on a global scale."



U.S. Top 10: More than 100 lung transplants this year

Baylor St. Luke's Medical Center's Lung Transplant Program performed more than 100 transplants from June 2023 to June 2024, making it one of the top five busiest lung transplantation programs in the nation.

"We are so proud of our team who make all these transplants possible," said Gabriel Loor, M.D., surgical director of the Lung Transplantation Program at Baylor St. Luke's and director of lung transplantation at Baylor College of Medicine. "Our program is one of the best in the country and we are pleased to see we continue to grow."

Dr. Loor is a pioneer in ex vivo lung perfusion, having played a key role in FDA approval of the OCS Lung machine. In fact, he led the first breathing lung transplantation using the OCS Lung machine in 2014 in the Midwest and the first in Texas in 2018.

In addition to OCS Lung machine, the transplant team is exploring other technologies for organ preservation such as the Lunguard (Paragonix). The Lunguard chills donor organs to 4°C. but prevents the potentially harmful effects of ice. The team has used the device to recover lungs for donation after circulatory death (DCD), which allows access to a large potential pool of donor organs. The Lunguard approach allows donor organs to be transported over considerable distances and time (e.g. from the Midwest to Houston). Preliminary experience with this system is encouraging.

PROFESSIONAL DEVELOPMENT

Our commitment to professional development is evident in our many faculty, trainee and staff programs that include coaching and mentorship opportunities, wellness and engagement events, recognition programs and other service and volunteer opportunities.

In addition to our intramural resources and programs, we were pleased to engage several expert professionals to train and teach our team members this past year. Judy Le, president of TakeRoot Leadership Consulting and Coaching, led a training series designed to promote and develop leadership skills for the staff, residents and faculty. Timothy Ulmer, a unit chief in the FBI and expert in leadership development, provided a grand round talk “Leadership Performance: Why it Matters” to surgeons and residents and continues to lead coaching sessions with faculty and staff.

Efforts to increase employee satisfaction and involvement continue through our employee engagement programs and events, including monthly socials where residents, faculty, fellows and staff members gather to build unity and teamwork outside of work. Engaging events like Go Red for Women Day, Go Texan Day celebrations, Black History Month, Breast Cancer Awareness and many more fostered congeniality and purpose. Facilitating opportunities for outreach and volunteerism include blood drives, food drives and food bank participation as other successful initiatives this past year.

Our recognition programs celebrate accomplishment and include recognizing, thanking and awarding staff members for their years of service within the Department, birthdays and academic successes. These also included new awards like Employee of the Month, Keys to Excellence Award and Superior Customer Service Award.

Department team members at the American Lung Association Fight For Air Climb - Houston



E. DeBakey International
Society and Michael E.
Department of Surgery



Michael E. DeBakey International Surgical Society

This year, our departmental Office of Alumni Affairs integrated the Michael E. DeBakey International Surgical Society (MEDISS) into our Department portfolio, leading to the formation of the Michael E. DeBakey Surgical Advisory Committee (MEDSAC). The integrated society, which was originally established by Dr. DeBakey in 1976, will focus on connecting and supporting our alumni through symposia, events at national conferences, maintaining archives, and recognizing outstanding alumni with awards including the prestigious DeBakey Surgical Award. Looking ahead, the MEDSAC chaired by program alum Eric Silberfein, M.D. and Vice Chair Chris Cribari, M.D., will host the next Alumni Symposium in Spring 2026, where we'll celebrate alumni achievements and showcase departmental advancements.

Department Executive Vice Chair Joseph Coselli, M.D., and Director Holly Shilstone continue to boost other alumni outreach and endowment efforts. These include close collaboration with the DeBakey Medical Foundation, which recently awarded the Department a \$10 million to support its academic growth and advancement. For more information or gifting opportunities, please contact Holly Church Shilstone at surgeryalumni@bcm.edu

Division of

ABDOMINAL TRANSPLANTATION

The abdominal transplant program with six faculty surgeons is one of the largest volume programs in the United States and is one that has consistently generated excellent outcomes. The program provides care for pediatric and adult patients ranging from infants to those over 75 years old at our three affiliated hospitals: Baylor St. Luke's Medical Center, Michael E. DeBakey VA Medical Center and Texas Children's Hospital. Our program assets include robotic living related donor kidney transplantation and ex vivo organ perfusion to enhance the availability of viable donor organs for transplantation.

- Our transplant team at Texas Children's Hospital this year performed eight combined kidney and liver transplants for pediatric patients with rare genetic disorders—a new national single year record
- The pediatric abdominal transplant program at Texas Children's Hospital is No. 1 in volume in United States

Christine O'Mahoney, M.D.,
and Division Chief John Goss, M.D.



Division of

CARDIOTHORACIC SURGERY

The division with 20 faculty surgeons and four faculty researchers perform more than 1,500 surgical procedures annually at all three of our primary adult hospital affiliates, together with the Texas Heart Institute. The division has one of the largest post-graduate training programs in the nation, including traditional (three year) and integrated I6 residencies and fellowships in cardiothoracic transplantation, aortic surgery and minimally invasive cardiac surgery. It's research portfolio includes NIH and other extramural funding for studies of the pathogenesis of aortic disease, gene therapy to treat end-stage coronary disease, and the application of cell reprogramming to treat heart failure.

- Joseph Coselli, M.D., exceeded 3800 thoracoabdominal aortic aneurysm procedures, the world's largest experience
- Ravi Ghanta, M.D., received NIH R01 funding for diverse research endeavors including cell-based immunomodulation and artificial intelligence to impact patient care

Division Chief
Marc Moon, M.D.



Division of

CARDIOTHORACIC TRANSPLANTATION and Circulatory Support

The division is a legendary and perennially groundbreaking leader in heart and lung transplantation and circulatory support surgery, standing as one of the world's highest-volume programs with more than 1,500 heart transplants and 1,500 VAD implants. Our lung transplant program this year performed over 100 lung transplantations, making it one of the top 10 highest volume programs in the nation. Our groundbreaking application of heart and lung ex-vivo perfusion techniques and our first-in-human implantation of a new generation of total artificial heart reflects our rich tradition of innovation, beginning with the first in the United States performance of heart transplantation by Denton Cooley, M.D., and the earliest applications of ventricular support devices by renowned Baylor surgeons including O.Howard Frazier, M.D.



Credit: BiVACOR

Baylor surgeons implant first-in-human valveless artificial heart

On July 9, Alexis Shafii, M.D., and Kenneth Liao, M.D., Ph.D., of The Texas Heart Institute performed the [first-in-human implantation of the BiVACOR Total Artificial Heart \(TAH\)](#) as part of a U.S. FDA Early Feasibility Study (EFS). Eight days later, the patient successfully received a donor heart, replacing the BiVACOR TAH. This achievement marks a significant step in advancing options for patients waiting for transplants and holds promise as a potential long-term solution after further testing.

The BiVACOR TAH, a titanium biventricular rotary blood pump with a magnetically levitated rotor, is designed to be more durable and efficient than existing artificial hearts. Unlike current options with complex mechanics and limited durability, this device has no physical contact points, reducing wear and tear. The ongoing EFS aims to assess the BiVACOR TAH as a bridge-to-transplant solution, with plans to expand into a larger trial involving more patients and medical centers.

- The first-in-human implantation of the BiVACOR Total Artificial Heart
- Over 100 lung transplantations performed in 2024 by our team lead by Gabriel Loor, M.D.

Members of the BiVACOR transplant team: William E. Cohn, M.D., Alexis Shafii, M.D., O. Howard Frazier, M.D., and Daniel Timms, Ph.D.



Credit: The Texas Heart Institute



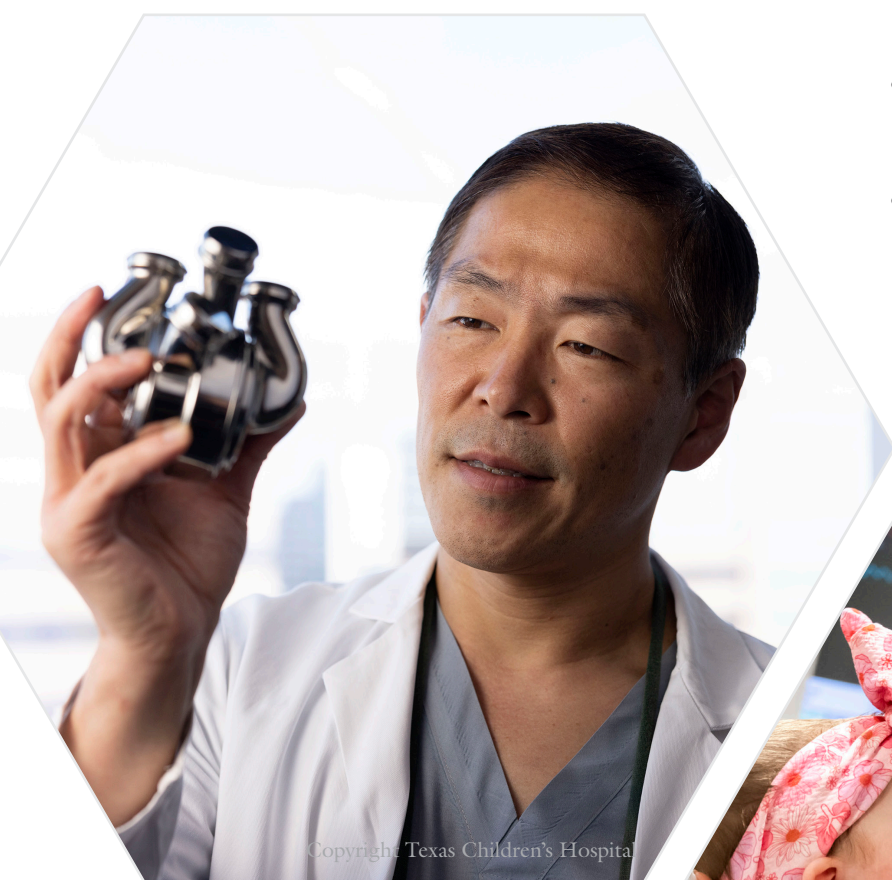
Credit: The Texas Heart Institute

Division of

CONGENITAL HEART SURGERY

From its inception in 1954 as one of the first congenital heart surgery program in the United States, the division has become a world leader in pediatric congenital heart surgery, performing over one thousand congenital heart procedures annually. The division is a key member of Texas Children's Heart Center, which is ranked No. 1 nationally by *U.S. News & World Report* for the past seven years. Texas Children's is also the largest volume pediatric heart transplant and pediatric lung transplant center for the past 10 years.

- No. 1 pediatric heart center (for the seventh year in a row)
- Heart transplant on oldest adult congenital heart disease patient, a 42-year-old man with a single ventricle physiology



Copyright Texas Children's Hospital

Surgical Director, Heart Transplant and Mechanical Circulatory Support
Iki Adachi, M.D. with the BiVACOR TAH



Rare double lung transplant on 6-month old Kylie Overfield born with a life-threatening lung disorder

Division of

PEDIATRIC SURGERY

The Division of Pediatric Surgery at Baylor College of Medicine represents one of the largest, most experienced and highest volume pediatric surgical programs in the world, offering procedures ranging from routine general surgery in the pediatric population to groundbreaking fetal surgery. In many cases, our surgeons bring families new options and new hope for the treatment of fetal anomalies that few other centers can address. The division supports our Level 1 pediatric trauma center, also one of the largest in the United States and boasts one of the largest case volumes of complex oncologic procedures in the United States. Division chief Sundeep Keswani, M.D., and faculty Sarah Woodfield, Ph.D., and Swathi Bilaji, Ph.D., hold multiple NIH grants for their work in scarring and tissue regeneration.



Division Chief
Sundeep Keswani, M.D.

Division of
**METABOLIC &
 BARIATRIC SURGERY**

Our multi-disciplinary team approach aids in the management of patients who suffer from the consequences of obesity and metabolic syndrome, a disease that has a prevalence of nearly 100 million people in the United States. Our treatments not only result in dramatic weight loss, but also improve, if not resolve, life-threatening diseases such as diabetes, hypertension, heart failure and sleep apnea, among many others. In addition to performing bariatric surgery procedures ranging from endoscopic and standard sleeve resection procedures to complex reoperations, our bariatrics teams also participates in comprehensive Bariatric Medicine programs.

- Only U.S. institution to receive IRB approval for research validating a new elastography software to replace liver biopsies for diagnosing metabolic dysfunction-associated steato-hepatitis
- Bariatric program received a Center of Excellence designation from Blue Cross Blue Shield and the Optum Clinical Sciences Institute



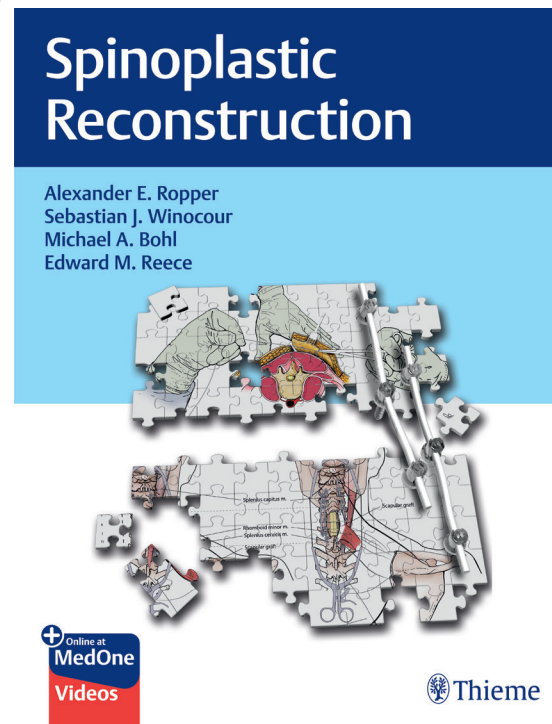
Juliet G. Holder-Haynes, M.D.,
 Division Chief
 Samer Mattar, M.D., and
 Julie Ann Lloyd, M.D., Ph.D.

Division of
PLASTIC SURGERY

The Division of Plastic Surgery provides adult and pediatric surgical care including reconstructive surgery for adult and pediatric trauma, breast microsurgical reconstruction, lymph node transplantation for the treatment of post-mastectomy lymphedema and procedures for the correction of congenital defects. It embodies one of the largest craniofacial surgery programs in the United States. Collaborating with the Department of Neurosurgery, division faculty helped develop the newly formed discipline of spino-plastic reconstruction, which brings together the expertise of orthopedics, neurosurgery and plastic surgery to provide highly creative surgical techniques to treat challenging spinal pathology.



[Lucas Dvoracek, M.D., shows patient Aaron Silva the 3D model he used to plan his reconstructive surgery.](#)



First textbook on *Spino-Plastic Reconstruction* by editor Sebastian Winocour, M.D. and co-authors, with cover by Scott Holmes, CMI

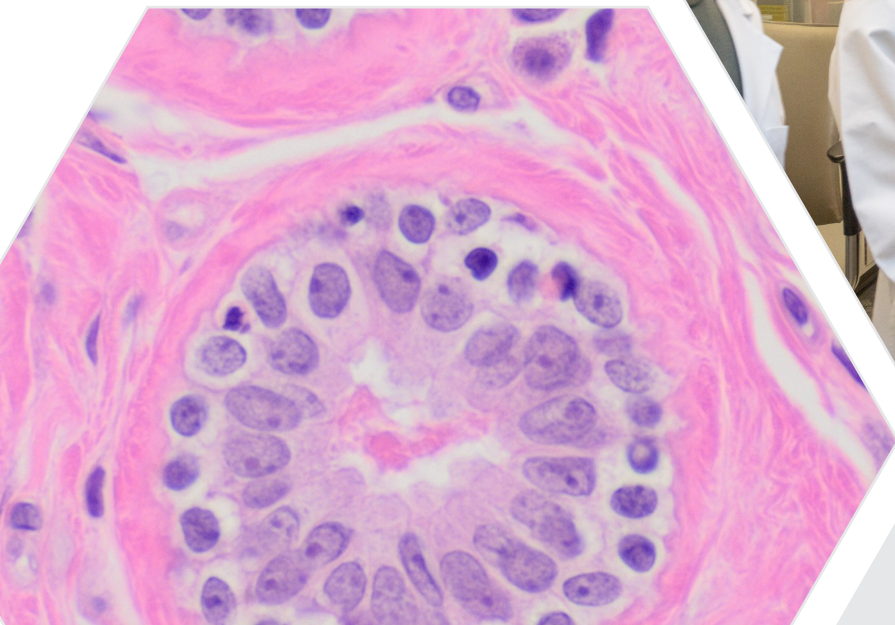
Division of

SURGICAL ONCOLOGY

The Division of Surgical Oncology, which supports the Dan L Duncan Comprehensive Cancer Center—one of only 61 such NCI-designated programs in the United States—includes more than 20 faculty surgeons focused on breast surgery within the Lester and Sue Smith Breast Center, endocrine surgery within the Thyroid and Parathyroid Center, colorectal surgery focused on minimally invasive, laparoscopic, robotic and transanal surgical procedures and pancreas surgery within the Elkins Pancreas Center. Faculty in the endocrine section are national leaders in the use of radiofrequency and microwave ablation for the treatment of thyroid nodules and section leader Raymond Grogan, M.D. is an internationally recognized leader in the performance of transoral [scarless thyroid and parathyroid surgery](#). Division faculty hold multiple NIH and other extramural grants, including advanced immunotherapy for colorectal cancer, breast cancer imaging and mesothelioma.

- Device patented for Transoral Endoscopic Thyroidectomy Vestibular Approach developed by Raymon Grogan, M.D.
- New endocrine surgery fellowship is the only in the world to offer training in transoral approach thyroid and parathyroid procedures
- World's largest and most comprehensive genetic map of normal breast tissue created

Vice Chair for Research
Livia Eberlin, Ph.D., and
Rachel DeHoog, Ph.D., in the
Laboratory for Medical
Mass Spectrometry



New tower offers latest technology for cancer patients

Baylor St. Luke's Medical Center this year opened the [O'Quinn Medical Tower](#), a beautiful new state-of-the-art ambulatory care center and home for the Dan L Duncan Comprehensive Cancer Center, one of only 71 such NCI-designated centers in the United States. A heralded new step in our providing world class care for our patients, this 12-story, 420,000 square foot expanse houses a wide variety of facilities, including operating rooms and clinical offices for our surgical oncology group who are able to work side by side with medical oncologists and other members of their interdisciplinary care teams providing support for our colorectal, endocrine, hepatobiliary and breast surgery services.

This new building elegantly supports an environment of healing, incorporating natural lighting and balcony gardens, curated artwork with calming nature scenes and contiguous patient flow from welcome lobbies through medical and surgical suites to ample connected parking facilities. It triples the physical footprint of the cancer center and offers abundant access to ambulatory diagnostic and therapeutic facilities for our patients.

Division of

THORACIC SURGERY

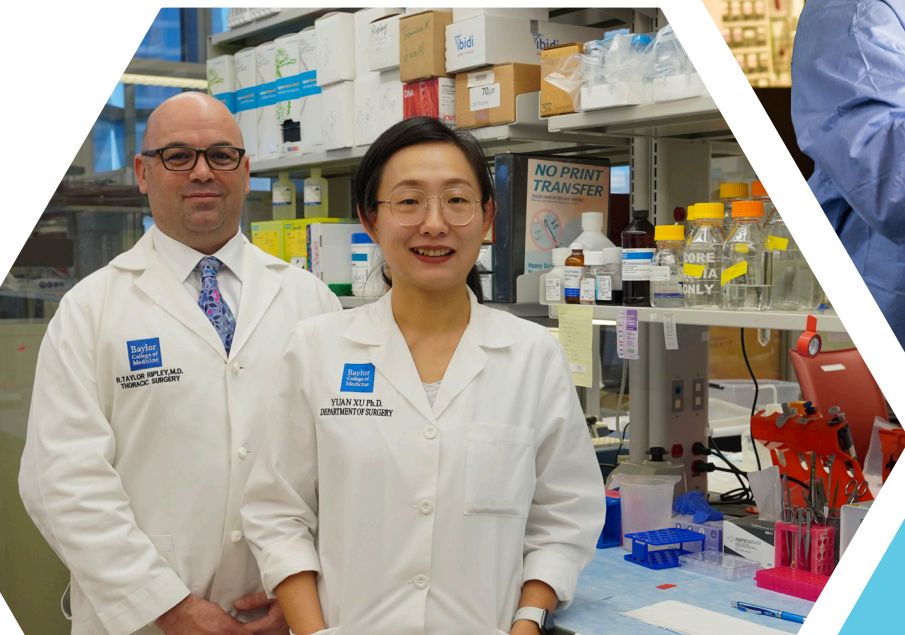
The David J. Sugarbaker Division of Thoracic Surgery, this year celebrating its 10th year since its founding by David J. Sugarbaker, M.D., is comprised of a team of highly motivated surgeons, advanced practice providers, nurses and support staff who provide specialized expertise for surgical treatment of all thoracic conditions. The division is an anchor member of the Baylor College of Medicine Lung Institute and offers specialized centers including its Center for Dysphagia and Swallowing Disorders, the Mesothelioma Treatment Center and the Thoracic Outlet Clinic.

- More than 1000 robotic thoracic surgical procedures
- More than 100 robot-assisted minimally invasive esophagectomy procedures performed by Shawn S. Groth, M.D.

First robotic tracheobronchoplasty for tracheobronchomalacia was performed by Division Chief Shawn Groth, M.D.



Director of Thoracic Surgical Research R. Taylor Ripley, M.D., and Yuan Xu, Ph.D.,



Dr. Shanda Blackmon named director of The Lung Institute

Shanda H. Blackmon, M.D., renowned in the field of thoracic surgery and specializing in minimally invasive lung segmentectomy and complex thoracic surgery, has been named director of the [Lung Institute at Baylor Medicine](#), founded by David J. Sugarbaker, M.D. in 2014.

Blackmon has performed more than 5,000 thoracic surgical cases over the course of her career. She is returning to Houston from the Mayo Clinic in Rochester, Minn., where she was a professor of surgery, medical director of experience design and medical director of the Consumer Digital Platform in the Mayo Clinic Center for Digital Health. She has served as a director of the Society of Thoracic Surgeons and as president of the Women in Thoracic Surgery Society.

Before joining Mayo, Dr. Blackmon served as chief of thoracic surgery at Houston Methodist Hospital, where she also founded and directed the Lung Cancer Screening Program. There, she accomplished the first robotic lobectomy in Houston. Dr. Blackmon holds several patents and has authored over 200 publications. She has received many awards for her work, including the Extraordinary Women in Cardiothoracic Surgery Award from the Women in Thoracic Surgery Society.



Division of

TRAUMA & ACUTE CARE SURGERY

The Division of Trauma & Acute Care Surgery, one of our newest divisions, encompasses a faculty of 22 surgeons and 16 advanced practice providers supporting acute care, trauma care and critical care programs at all three of our adult hospital affiliates, including the renowned Ginni and Richard Mithoff Trauma Center at Ben Taub Hospital. The division supports four surgical critical care units and encompasses the rapidly growing Baylor Medicine Hernia Center, led by Michele Loor, M.D., which routinely performs complex robotic surgery repairs and a complex general surgery clinic. Training opportunities supported by the division include its one- and two-year surgical critical care fellowship programs, hosting five trainees annually.



Section Chief of Acute Care Surgery for Ben Taub Hospital Chad Wilson, M.D., MPH, moderates a session on firearm safety hosted by the Rice University Baker Institute



Inaugural Section Chief for Acute Care Surgery at Baylor St. Luke's Medical Center Ryan Dumas, M.D., and K08 award recipient Jennifer Leonard, M.D.

Division of

VASCULAR SURGERY and Endovascular Therapy

The Division of Vascular Surgery and Endovascular Therapy integrates vascular surgeons, podiatrists, physical therapists and other vascular team specialists to provide advanced care for individuals with complex vascular diseases. The [Save the Extremity Program](#) is a regional, national and international leader in multidisciplinary care for treating diabetic foot ulcers and chronic limb-threatening ischemia. The Division also has a dedicated fenestrated aortic aneurysm endograft program and a rapidly growing venous diseases center. Its faculty at the Michael E. DeBakey VA Medical Center represents the largest VA vascular surgery program in the nation, and the division supports both trauma surgery programs at Ben Taub Hospital and Texas Children's Hospital. The division supports both traditional and integrated vascular surgery residency and fellowship programs.



No. 1 in the nation for enrollment in the STRIDE study of the percutaneous Penumbra device



Joseph L. Mills, M.D., delivered his presidential address at the 2024 Annual Meeting at the Society for Vascular Surgery

Center for Global Surgery trains clinicians around the world

Our newly launched [Center for Global Surgery](#), an expansion of our ten-year old global surgery residency program, seeks to extend the reach of our global health initiatives globally and within the United States in its underserved communities. More specifically, the Center seeks to improve access to safe, timely and affordable surgical care worldwide through fostering of education, collaboration, advocacy and research in providing care to the medically underserved. The Center functions as a hub for global surgery education, collaborative partnerships and global health innovation.

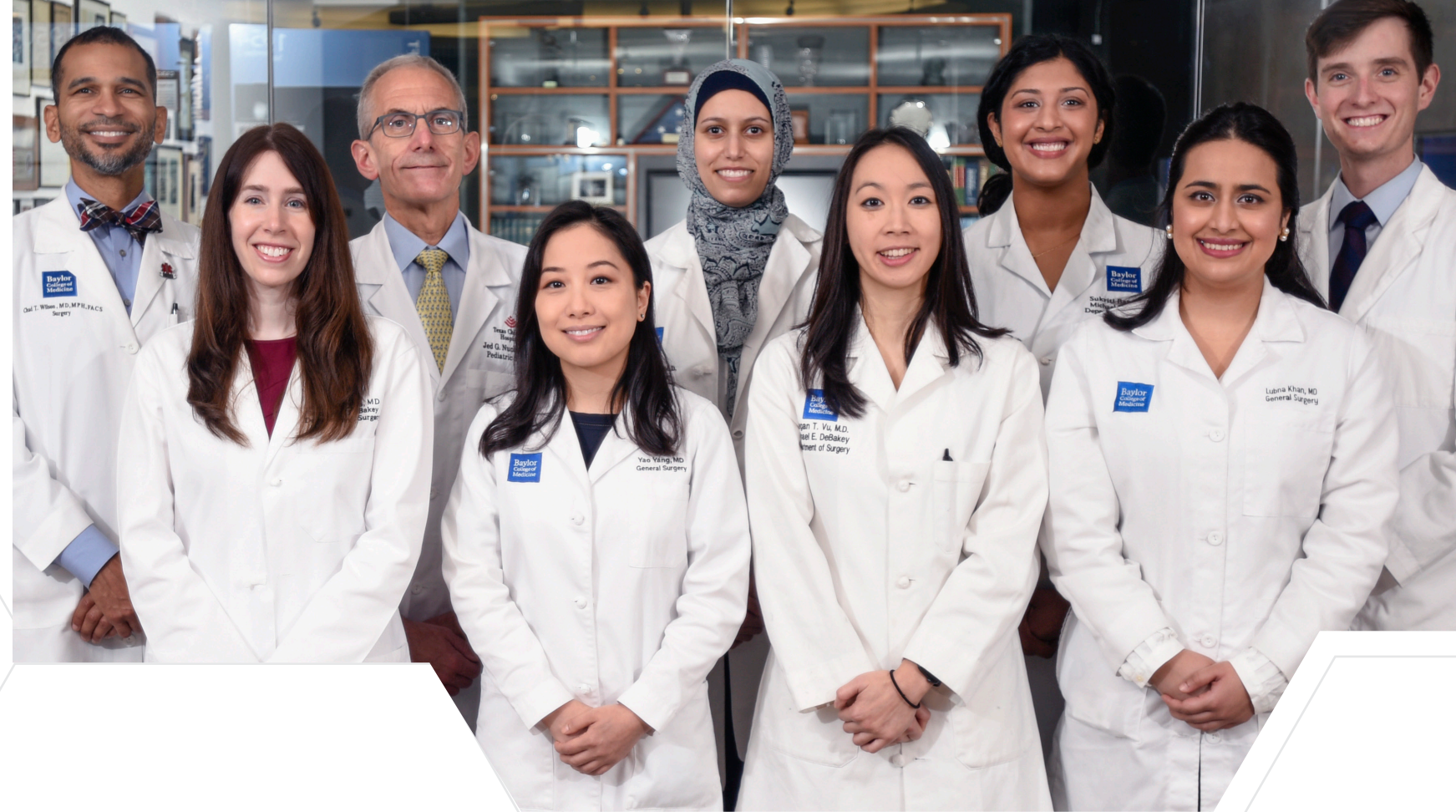
Efforts include the work of our trainees and scholars in underserved communities and organizations abroad and domestically. These include collaborations with the World Health Organization and work in international communities including Mongolia, Vietnam, Egypt, Myanmar, Uganda, Peru and Saudi Arabia. The Center includes novel programs such as the NRMP-certified Global Surgery Track within the general surgery residency, a Global Surgery Advocacy and Policy Fellowship in its third year of collaboration with the Rice University's Baker Institute for Public Policy, essential skills conference and virtual learning opportunities. Work of the Center has included more than 30 publications and over 100 presentations by faculty and trainees, as well as awards including the American College of Surgeons Resident Humanitarian Award to Youmna Sherif, M.D., and 2024-2025 NIH Fulbright Fellowship to medical student Srinithya Gillipelli.

The Essential Surgery Skills Conference, first held in 2018, prepares practicing physicians and trainees to practice in tropical, remote and resource-limited areas of the world. The course provides hands-on experience in a wide range of essential skills ranging from orthopedics and urology to obstetrics and anesthesia. Most recently, more than 30 trainees from rural Myanmar logged on in the middle of the night to join colleagues in Morocco and the U.S. to participate in lectures and simulations on essential skills.

Virtual training

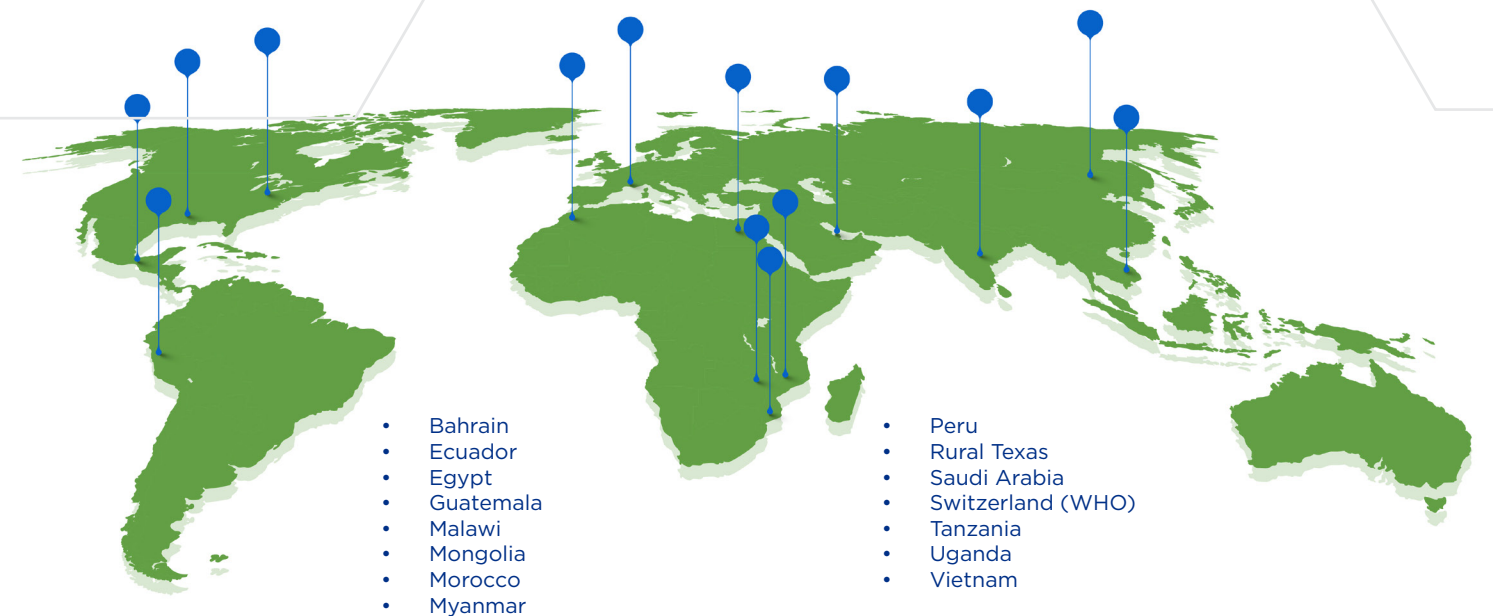
The Global Trauma Collaboration engages 50-100 medical professionals worldwide who participate in biweekly, hour-long sessions on topics such as trauma resuscitation during conflict, intrabdominal vascular injury, post-traumatic stress disorder and chemical weapons treatment.

The Global Cardiothoracic Surgery Case Series held bimonthly in collaboration with the University Mohammed VI des Sciences de la Sante in Morocco joins Baylor College of Medicine faculty and trainees with counterparts in Casablanca. Case presentations offer a unique opportunity to participants on both sides of the Atlantic to share cases and learn about conditions uncommonly seen in one or the other of these partnering regions.



Activities of the Baylor Center for Global Surgery include:

- The only NRMP-Certified Global Surgery Track within General Surgery Residency
- Texas Children's Hospital Pediatric Surgery Fellowship Collaboration - Guatemala
- Global Surgery Advocacy and Policy Fellowship
- Medical Student Global Surgery Research Elective
- Essential Surgery Skills Course
- Global Trauma Collaboration
- Global Cardiothoracic Surgery Casablanca Case Series
- University of Global Health Equity



Honors and Awards

Samir S. Awad, M.D., MPH Master Clinician Faculty Award for Excellence in Patient Care

E. Ramsay Camp, M.D. National Pancreatic Cancer Foundation grant (\$25,000)

Christy Y. Chai, M.D. American Surgical Association Surgical Leaders Fellowship Grant

William Cohn, M.D. Earl Bakken Scientific Achievement Award from the Society of Thoracic Surgeons

Joseph Coselli, M.D. Aorta Surgical Giant Award; Physician and Friend Award from the Aishel House

Rachel W. Davis, M.D. Humanitarian Award from Baylor College of Medicine; Early Career Faculty Award for Excellence in Patient Care

Livia Eberlin, Ph.D. Norman Hackerman Award in Chemical Research; Women Scientists Innovation Award for Cancer Research; The Analytical Scientist Power List 2024

Derek Erstad, M.D. Pilot funding from the Michael E. DeBakey VA Medical Center

Ramiro Fernandez, M.D. Baylor College of Medicine and Baylor St. Luke's Medical Center Advancing Clinical Excellence Grant; AATS Foundation Research Award from The American Association for Thoracic Surgery

O. Howard Frazier, M.D. Pushpa and Kewal Krishan Gupta Lifetime Achievement Award in Development of Therapies for Cardiovascular and Pulmonary Diseases

N. Thao N. Galvan, M.D. Inducted into the American College of Surgeons' Academy of Master Surgeon Educators; James IV Traveling Fellowship Award

Ramyar Gilani, M.D. Norton Rose Fulbright Faculty Excellence Award for Teaching and Evaluation

Erin Greenleaf, M.D., M.S. Early Career Faculty Award for Excellence in Patient Care

Shawn Groth, M.D. Star Faculty Award for Excellence in Patient Care, Norton Rose Fulbright Faculty Excellence Award for Teaching and Evaluation

David Holmes, M.D. Professional Educator Appreciation and Recognition (PEAR) Award from Baylor College of Medicine students

Cary Hsu, M.D. Named central medical director of the OR at Ben Taub Hospital

Atif Iqbal, M.D. Inducted into the Southern Surgical Association; named assistant vice chair for clinical quality improvement at Baylor St. Luke's Medical Center; National Cancer Institute Colon Cancer Task Force

Sundeep Keswani, M.D. Board of Governors Executive Committee for the American College of Surgeons

Alice King, M.D. Norton Rose Fulbright Faculty Excellence Award for Teaching and Evaluation

Hyun Sung Lee, Ph.D. Inducted into the American Association for Thoracic Surgery

Louis Le, M.D. Star Faculty Award for Excellence in Patient Care

S. Julie-Ann Lloyd, M.D. Ph.D. Early Career Faculty Award for Excellence in Patient Care

Gabriel Loor, M.D. Roderick D. MacDonald Research Fund Award; \$150,000 grant from TransMedics, Inc.

Michele Loor, M.D. Norton Rose Fulbright Faculty Excellence Award for Teaching and Evaluation

Dongliang Liu, Ph.D. Second-place award at the VA Research Week Symposium

Kristina Marsack, M.S. Norton Rose Fulbright Faculty Excellence Award for Education Materials

Kenneth L. Mattox, M.D. Laurance N. Nickey, MD, Lifetime Achievement Award from the Texas Medical Association; American Medical Association Distinguished Service Award

Priya Manoj, NP Department seed grant to improve patient education for feeding tubes

Pabel Miah, D.O. Department seed grant for a research project that will investigate integrating photoacoustic and ultrasound imaging to visualize breast lesions at high resolution with high sensitivity in real-time

Ava Mokhtari, M.D. Best oral presentation at the European Congress for Trauma and Emergency Surgery

Nandan K. Mondal, Ph.D. AHA Innovative Research Award; 12th annual Nancy Chang, Ph.D. Award for Research Excellence award from Baylor College of Medicine; AHA Innovative Project Award; Medical Research and Education Grant from the Mike Hogg Foundation; Professional Educator Appreciation and Recognition (PEAR) Award

Sarah Morrissey, NP Department seed grant to improve patient education on tunneled pleural catheters

Zachary Pallister, M.D. Early Career Faculty Award for Excellence in Patient Care

Octavio Pajaro, M.D., Ph.D. Professional Educator Appreciation and Recognition (PEAR) Award

William Pederson, M.D. Inducted into the American Surgical Association; Distinguished Fellow Award from the American Association of Plastic Surgeons

Zane Quach, D.O. Appointed medical director of the Surgical Intensive Care Unit at Baylor St. Luke's Medical Center

Abbas Rana, M.D. Norton Rose Fulbright Educational Grant; Inducted in Texas Surgical Society

Brittany Rhoades, Ph.D. Inducted into the National Association of Clinical Nurse Specialists (NACNS) Board of Directors

Kristy Rialon, M.D. Norton Rose Fulbright Faculty Excellence Award for Teaching and Evaluation

Yesenia Rojas-Khalil, M.D. Early Career Faculty Award for Excellence in Patient Care

R. Taylor Ripley, M.D. Michael F. Price Memorial Grant from the DeGregorio Family Foundation; Dan L Duncan Comprehensive Cancer Center grant; Star Faculty Award for Excellence in Patient Care, Norton Rose Fulbright Faculty Excellence Award for Teaching and Evaluation

Todd Rosengart, M.D. Inducted into the ACS Academy of Master Surgeon Educators; chair American College of Surgeons Board of Governors Physician Competency and Health Workgroup

Caner Salih, M.D. Appointed executive co-director of the Texas Children's Hospital Heart Center

Catherine Seger, M.D. Appointed trauma medical director for Ben Taub Hospital

Alexis Shafii, M.D. Star Faculty Award for Excellence in Patient Care

Kate Stalzer, NP Department seed grant to improve patient education on tunneled pleural catheters

Alistair Thompson, M.D. Sir Peter Freyer Medal by the University of Galway, Ireland

Subin Valayil, PA-C Department seed grant to improve patient education for feeding tubes

Sanjeev Vasudevan, M.D. Helis Grant (\$675,000) "Predicting chemoresistance and establishing targeted combination therapy for high-risk pediatric liver cancer"

R. Mario Vera, M.D. Norton Rose Fulbright Faculty Excellence Award for Teaching and Evaluation

Chad Wilson, M.D. MPH Star Faculty Award for Excellence in Patient Care

Feibi Zheng, M.D. MBA Early Career Faculty Award for Excellence in Patient Care

Endowed Chairs and Professors Baylor College of Medicine

Meyer-DeBakey Chair In Investigative Surgery
R. Taylor Ripley, M.D.

Jimmy And Roberta Howell Professorship In Cardiovascular Surgery
Alexis Shafii, M.D.

The Olga Keith Wiess Professor of Surgery I
Ravi Ghanta, M.D.

Josephine Abercrombie Endowed Professorship in Plastic Surgery Research
Chris Pederson, M.D.

Center for Translational Research and Innovations
Livia S. Eberlin, Ph.D.

George L. Jordan, M.D. Chair of General Surgery
William E. Fisher, M.D.

Lester And Sue Smith Endowed Chair In Surgery
Kenneth K. Liao, M.D., Ph.D.

John W. "Jack" Reid, M.D., '43 And Josephine L. Reid Endowed
Joseph L. Mills, M.D.

George P. Noon, M.D. Endowed Chair in Surgery
Gabriel Loor, M.D.

William J. Pokorny, M.D. Professorship In Pediatric Surgery
Timothy Lee, M.D.

The Cullen Endowment
Joseph S. Coselli, M.D.

The DeBakey Bard Chair in Surgery
Todd K. Rosengart, M.D.

The Olga Keith Wiess Chair of Surgery I
E. Ramsay Camp, M.D.

The Olga Keith Wiess Chair of Surgery II
Alastair Thompson, M.D.

The Olga Keith Wiess Chair of Surgery III
Shanda Blackmon, M.D., MPH

Texas Children's Hospital

Donovan Chair in Congenital Heart Surgery
Jeffrey S. Heinle, M.D.

JLH Foundation Chair in Transplant Surgery
John A. Goss, M.D.

Brad and Melissa Juneau Endowed Chair in Congenital Heart Surgery
Jeffrey S. Heinle, M.D.

S. Baron Hardy Endowed Chair in Plastic Surgery
Larry H. Hollier, M.D.

Susan V. Clayton Chair in Surgery
Sundeep Keswani, M.D.

Samuel Stal, M.D. Endowed Chair in Plastic Surgery
Richard Hopper, M.D.

St. Luke's Foundation

William D. Seybold, M.D. Chair in Surgery
Abbas Rana, M.D.

Denton A. Cooley, M.D. Chair in Cardiac Surgery
Marc R. Moon, M.D.

A publication of the
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