Michael E. DeBakey Department of Surgery 2018 Annual Report

The Pursuit of Excellence is Our Objective

Baylor College of Medicine

MICHAEL E. DEBAKEY DEPARTMENT OF SURGERY

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Message from the Chair

The Michael E. DeBakey Department of Surgery continues to grow in ways large and small. Over 120 faculty have joined the Department over the past six years, including world-class leaders in a spectrum of surgical disciplines. Of these, we have since the time of our 2015 Annual Report, welcomed renowned minimally invasive surgeons Dr. Miguel Montero-Baker (endovascular surgery), Dr. Raymon Grogan (transoral thyroid surgery), and Dr. Carlos Galvani (robotic bariatric surgery), as well as Drs. Ken Liao and Gabriel Loor (cardiothoracic transplantation) and Dr. Alastair Thompson, world renowned for his work treating and researching new treatments for breast cancer.

Reflective of this clinical excellence and innovation, our clinical activity at our clinical affiliate and joint venture partner Baylor St. Luke's Medical Center has almost tripled since our joint venture began in 2014 – with nearly 40 faculty surgeons there performing approximately 7,000 surgical cases annually. Our trauma program at Ben Taub Hospital has likewise received national accolades for clinical quality excellence, ranking in the top 10% of "TQIP" trauma quality improvement registry programs, and our cardiac surgery program at the Michael E. DeBakey VA Medical Center is completing approvals to be one of only two heart transplant programs found in the VA system. Our Office of Surgical Research has grown to over 60 staff members supporting faculty and residents who have garnered nearly \$10 million in annual extramural funding, and our post graduate training program has expanded to nine categorical positions one of the largest in the nation—including a one of a kind National Residency Matching Program (NRMP)recognized Global Surgery training program, which now includes four fellows.

In this year's annual State of the Department presentation, entitled "Reaching Escape Velocity" (available online), I discuss how the Department has reached a critical mass of talented faculty and staff, with robust programs and resources empowering the achievement of our Mission Goals. These were advanced at our second Five Year Strategic Retreat, held this past spring, which envisions our being recognized as one of the very best departments of surgery in the nation within the next five years.

Towards this end, our pioneering academic RVU (aRVU) bonus program, which was highlighted by Dr. Scott LeMaire at the 2018 American Surgical Association meeting and recently published in the *Annals of Surgery*, has distributed nearly \$1M over the past four years to our faculty in recognition of their academic achievements. Our success in recruiting a highly diverse new faculty (and residents), with To be internationally recognized as the premier department of surgery in innovating breakthrough improvements in the quality and efficiency of patient care, and for training the next generation of surgical scientists, educators and innovators as leaders of our field.

over 75% women or underrepresented minorities, was likewise presented at this year's Texas Surgical Society meeting. Landmark projects are also underway examining the role of Human Performance Variables in Surgical Outcomes, and in our operating room "JumpSeat" observer program inspired by our collaboration with the American Airlines Flight Safety Academy.

Other exciting new initiatives, launched in partnership with Rice University, include our faculty coaching program and our research collaboration with the Rice University Department of Bioengineering, which features a quarterly "speed dating" seminar and a seed grant program to foster joint studies. Our Surgery Incubator launched by Dr. Billy Cohn in 2014 has expanded into a College-supported resource program under the leadership of Dr. Stuart Corr, called the INSTINCTSM program, featuring an annual Surgery Collaboration Day attended by hundreds of innovators and recurrent "Think Tank" sessions exploring "hot topics" in surgical innovation. We look forward in the coming year to the launch of a comprehensive, cross-department and crosscampus Transplant Center, headed by Dr. John Goss, and expect this initiative to grow into a nationally acclaimed center for the advancement of solid organ transplantation.

Amongst the many achievements by our department members highlighted in this Annual Report, we are proud to recognize Drs. Larry H. Hollier, Jed G. Nuchtern, Ruth Bush, Oluyinka O. Olutoye and Scott LeMaire upon their recent induction into the American Surgical Association, bringing our total number of members to over 20-one of the largest such representations in the society.

2019 promises to be another exciting year for our department as we continue to build on our great legacy and traditions set forth by Dr. DeBakey "in the pursuit of excellence." We look forward to sharing news with you of our continued growth and achievement. We again thank our members, friends and colleagues for your interest and support.

Department at a Glance

Divisions

Full-time Faculty

160

Surgical Cases

52

Residency Programs

\$4.7M

NIH Funding \$9.8M

Extramural Funding 18 Endowed Chairs and Professors

in the filling and the

5 Fellowship Programs General Surgery Residency Applicants

> 360 Peer-reviewed Articles

mission: HEALTHCARE

Since its beginning, Baylor College of Medicine's Department of Surgery 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." The current-day efforts of our faculty build on this heritage as we continue to expand and attract world-renowned surgeons with advanced subspecialty expertise. Today, we treat more than 10,000 surgical cases and 37,000 patient visits a year, bringing together the knowledge and experience of over 140 faculty physicians and researchers across 11 clinical divisions at five primary affiliated teaching hospitals. Under the leadership of our Vice Chair for Clinical Affairs Dr. William E. Fisher, working together with our other clinical leaders, our clinical programs continue to expand in breadth, volume and quality.

In recent years, Baylor St. Luke's Medical Center has seen an explosion in new surgical programs, with more than a 250% increase in case volume over the past three years. During this time, we have launched a series of new cutting-edge programs, including new sections and programs offering scarless thyroid surgery, robotic thoracic, colorectal and pancreatic surgery, minimally invasive bariatric and cardiac surgery, ex vivo lung perfusion (EVLP) for lung transplantation, and comprehensive limb salvage care via the Save the Extremity Program (STEP). These all echo Dr. DeBakey's wise guidance to continue the pursuit of excellence in all our endeavors.





mission: HEALTHCARE

Airline Pilots Offer Insight for Quality Improvement in the OR



At our AAiR conference held in collaboration with colleagues in the aviation industry, Dr. Samir S. Awad leads one of the scenarios with members of Baylor's Simlympics team exploring opportunities for applying "crew resource management" skills to improve surgical safety.



The Aviation Applications in SuRgery (AAiR) Program was established to champion an open, engaged "Just Culture" and to hone situational awareness, selfawareness, and leadership skills among the faculty and trainees of the Department of Surgery. Inspired by our collaboration with the American Airlines Flight Academy, the AAiR Program provides enhanced methods for achieving optimal performance and ultimately improved patient outcomes.

AAIR currently features three interrelated programs:

The Voluntary Reporting of Errors and Safety Issues Program is a web-based program designed to enable self-reporting of errors and safety issues, including near misses. Information submitted is retained only for the Department of Surgery's quality assurance/quality improvement (QA/ QI) purposes. The program complements the existing QA/QI systems at our affiliate hospitals.

The Jump Seat Program is a voluntary observer program for the assessment of vital non-technical skills for surgeons in the operating room. Participants receive ratings and feedback in four categories of non-technical skills: situational awareness, communication, teamwork, leadership, and communication.

The Coaching the Surgical Leaders of Today and Tomorrow Program aims to establish a sustainable model for transferring leadership skills to our faculty and trainees via one-on-one and team coaching. Ten of our faculty members have undergone an intensive two-day training course set up in collaboration with the Rice University Center for Creative leadership to serve as our faculty coach pioneers.

RESEARCH

The Department of Surgery continues to make great strides in expanding our research portfolio and and translating innovative new findings to the field of surgcal clinical care. Under the leadership of our Vice Chair for Research Dr. Scott A. LeMaire and Director of Clinical Research Dr. Barbara W. Trautner, we have built our department's Office of Surgical Research (OSR), a state-of-the-art research support infrastructure providing comprehensive services to our faculty and trainees, often at no cost to our faculty and trainee researchers. Our 60-member team of research professionals in the OSR includes research administrators, clinical trial coordinators, regulatory experts, grant managers, and a biostatistics and editorial support staff all working to support faculty and trainee research.

Department support for research infrastructure has allowed for the tremendous expansion of our research portfolio and has markedly increased access to research training and mentorship. The core team has been integral to our steady rise in NIH Blue Ridge rankings among departments of surgery from a low 59th (\$0.6M) in 2014 to 28th (\$3.6M) in 2017. The number of clinical trials under core management has grown from four to 81 active trials, and reflective of these research capabilities, we were recently selected to join the highly-regarded NIH Cardiothoracic Surgical Trials Network (CTSN).

As one other measure of the growth of our research programs, we were also recently awarded a prestigious T₃₂ training program grant for Research Training in Cardiovascular Surgery. Another measure of our research productivity is reflected by the more than doubling of student and resident abstract submissions in recent years to our annual Resident Research Day, to nearly 150 submissions, generating more than 25 final presentations and 70 poster presentations at our annual conference, attended by over 250 faculty, trainees, students and guests of the department.



DeBakey Roller Pump: Past accomplishements shape innovations of the future

iCAMP aims to improve stability, healing and mobility, worldwide. This is especially important for patients suffering from diabetes, which impacts more than one in four older adults in the United States," - Dr. Bijan Najafi Director, iCAMP

mission: RESEARCH

iCAMP A Research Powerhouse



Since joining Baylor College of Medicine in 2015, Dr. Najafi and his team has been enormously successful in securing NIH and extramural funding for iCAMP's numerous ongoing research projects.

in support of these efforts.

Since joining Baylor College of Medicine in 2015, Dr. Najafi and his team has been enormously successful in securing NIH and extramural funding for iCAMP's numerous ongoing research projects (see Selected Grants pg. 71).

The dramatic increase in chronic medical conditions across the globe, including diabetes, cancer and cardiovascular disease, has demanded immediate and creative action to develop solutions to address these new challenges in providing health care. Our Interdisciplinary Consortium on Advanced Motion Performance (iCAMP) Director Dr. Bijan Najafi, professor of surgery, engages creative teams in engineering, vascular surgery, podiatry, orthopedics, nursing and industry, among others, to develop personalized and preventative biomedical tools addressing a plethora of unmet needs in patients with chronic disease and in older adults. Dr. Najafi and the iCAMP team conduct research that harnesses new technologies, such as wearable sensors, mobile platforms and artificial intelligence, to develop specialized devices and algorithms enabling accurate, real time assessment of physiological response and motor-cognitive changes in patients in their homes-preventing repeated hospitalizations for chronic conditions and age-associated diseases. These gamechanging technologies have shown enormous promise identifying limb- and life-

threatening diabetic foot complications and providing early warnings to prevent falls and injuries in older adults, and have garnered significant extramural finding

EDUCATION

Vice Chair for Education Dr. Bradford G. Scott, together with Education Director Holly Church Shilstone, direct one of the largest, most innovative and thoroughly modern surgical education programs in the country here at Baylor College of Medicine. We have a seen rapid expansion of our graduate medical education programs that continually match outstanding residents and fellows. With our recent expansion in categorical residents and addition of a new global surgery program, the department now boasts nine ACGME-accredited general surgical residency positions —one of the largest programs in the US—as well as twelve specialty residency and fellowship programs, including new fellowships in minimally invasive cardiac surgery and general thoracic surgery and an integrated vascular surgery residency program.

With growing awareness of high rates of physician burnout, especially during training years, the momentum for forward-thinking changes in resident education has never been greater. Our education leaders took decisive action to create and implement a new ACGME-approved Resident Wellness Initiative providing actionable tools to help residents manage the stressors and burdens unique to surgery and the surgical workplace. At our inaugural 2017 Education Wellness Retreat, residents, faculty and experts participated in breakout sessions focused on the new Wellness Initiative's four target areas: physical wellbeing, nutritional wellbeing, psychological wellbeing, and mentorship. Our education leadership continues to work with Baylor College of Medicine to expand wellness programs and to study the process.

MATCI 2018 MATCH RESULTS arch 16, 2018

Match Day 2018: Dr. Kausar Ali matches with our Integrated Plastic Surgery Residency program

Seated in the largest medical center in the world and in what has been called the most ethnically diverse metropolitan area in the country, Baylor College of Medicine has a history of training physicians to provide excellence in medical care across the globe. Home of the National School of Tropical Medicine, Baylor International Pediatric AIDS Initiative at Texas Children's Hospital, and numerous global health initiatives, the Texas Medical Center provides a natural stage for international health collaboration and advancement.

Seeing that there were gaps in contemporary general surgical education for those planning to practice in resource-limited settings, the department supported the interest of our residents, led by one of our residents, Dr. Rachel Davis, to create our NRMP-listed seven-year Global Surgery Track. Today, we count four residents within this track, who provide surgical care and pursue research at international sites including central Asia (Mongolia), South America and Africa. The global surgery curriculum also includes clinical activities in rural Texas and studies in program development at the World Health Organization in Geneva. Global surgery track residents spend much of their first year learning the essential skills in urology, orthopedic surgery, OB GYN and other non-traditional areas of general surgery training, and then get to apply these skills in their second year of global studies (the seventh year of their training program overall).

mission: EDUCATION

Training the **Global Surgeon**



Global Surgery Track Residents Drs. Rachel W. Davis, Megan Vu, Youmna Sherif and Sukriti Bansal. Our Global Surgery Track of our General Surgery Residency Program is the first of its kind recognized by the NRMP, and includes two years dedicated to training in urology, orthopedics and OB/GYN to supplement surgical skills in a seven-year general surgery training, and sends residents on missions around the world to help the underserved.

Seated in the largest medical center in the world and in what has been called the most ethnically diverse metropolitan area in the country, Baylor College of Medicine has a history of training physicians to provide excellence in medical care across the globe," - Dr. Rachel W. Davis, **Global Surgery Fellow**

mission: COMMUNITY

Our commitment to community ranges near and far, and from engagements with existing charitable and not-for-profit organizations to those generated by department members. The following is a small sampling of these activities:

Houston Walk for Victory: For the majority of his career Dr. Joseph Coselli has been at the forefront of the treatment of patients with Marfan syndrome. Dr. Coselli's clinical stewardship has helped make the Texas Medical Center a major site for Marfan and heart-related studies. For over two decades, Dr. Coselli has partnered with The Marfan Foundation, bringing the foundation's community-building and philanthropic events to Houston, including the nationwide Walk for Victory program benefiting the foundation's research into this life-threatening genetic disorder. He chaired the inaugural 2016 Houston Walk for Victory, which raised nearly \$140K—the largest and most successful fundraising even in the history of the foundation, and leads the "Coselli's Crusaders," a top fundraising team.

International Missions: The Department of Surgery has a long history of training surgeons to provide excellence in medical care to underserved and resource-limited communities in the US and around the globe. Dr. Larry Hollier has participated in numerous global surgical capacity-building trips for the treatment of craniofacial and hand deformities. He chairs the medical advisory board of Smile Train, helping to supervise safety in over 100,000 pediatric cleft surgeries in 85 countries. Dr. Laura Monson traveled to Egypt and Dr. Edward Buchanan traveled to Tanzania to treat these children as well. Also, Dr. Oluyinka O. Olutoye and his family have participated in volunteer overseas medical missions organized by Faith In Practice. Dr. Olutoye has participated in over 30 medical missions to Guatemala, Russia, Haiti, Malawi, Botswana and Liberia.

Surgical Saturday: Here in Houston our surgeons are part of the 80-member volunteer medical team of Surgical Saturday, a collaboration among CHI St. Luke's Health and Houston-area nonprofits, advocating affordable and accessible healthcare. The program provides surgical procedures at no charge for patients in need. "In a changing health care environment, there's a lot of things that are out of our control but on this Saturday we're able to have control and help these patients receive the surgical care they desperately need," said Dr. James Suliburk, associate chief of endocrine surgery.



Residents Drs. Brandi Scully, Megan Vu, alumnus (2017)/Ben Taub Hospital surgeon Dr. Jamie Fitch, medical students Kelly Schultz, Kirea Mazzolini, Chelsea Guy-Frank, Rachel Kaplan, Anjali Raghuram, Sydney Sachse and Umang Parikh at the Reach for the Stars! STEM Festival.

mission: COMMUNITY

Enhancing Community Care Through Telemedicine



Project ECHO, a new telehealth program at Baylor St. Luke's, is increasing access to quality health care by educating and empowering community providers.

There was a gap in care, Hepatitis C or cirrhosis would just be something they had until they had to go to the ER,"

After a litany of routine tests in 2012, John Rocks heard news he never expected: "You have hepatitis C." Rocks learned he was infected with the virus after being treated for high blood pressure. With no insurance, his options were limited—until a chance encounter at a local doctor's office led him to Baylor St. Luke's Medical Center's new telehealth program, Project ECHO.

Led Dr. Norman Sussman, medical director of the program, Project ECHO seeks to increase the accessibility of quality health care by allowing Baylor St. Luke's experts to use video conferencing to mentor and train providers in communities throughout Texas and Louisiana.

Prior to the launch of Project ECHO, patients diagnosed with hepatitis C would be referred to the experts at Baylor St. Luke's for further treatment. Unfortunately, many of those patients would end up without further treatment, unable to make the trip to the Texas Medical Center for a variety of reasons, including a lack of funds, an inability to take time off from work, or even just sheer distance.

Today, patients and physicians at BSLMC can visit together "online" videoconferencing via our Project ECHO telemedicine program. That is the true beauty of Project ECHO, explains Dr. Sussman. As Dr. Sussman and his colleagues emphasized, the goal is not to provide direct patient care, but to enhance patient care through the providers in the community.

- Renita Madu PA participating in ECHO

mission: INNOVATION

The Department of Surgery believes that the future of health care in the U.S. and around the globe depends on medical device and technology innovation. Working with academic, government, and industrial partners and overseen by the department's Director of Technology Development Dr. Stuart Corr, INSTINCTSM (Interdisciplinary Surgical Technology and Innovation Center) has a single goal: to translate ideas into fully functional prototypes for patent submissions. Founded in 2013 by Dr. Billy Cohn, professor of surgery at Baylor, and executive director of the TMC/Johnson & Johnson's Center for Develop Development, INSTINCTSM offers a truly unique experience to its over 240 participants from 40 organizations and is aligned with the mission of making the Texas Medical Center (TMC) the 'Third Coast' for medical innovation and technology.

INSTINCTSM brings together faculty, scientists, residents, students, engineers and inventors across the TMC and beyond with its unique programs designed to facilitate prototype development and networking—Hackathons, Innovation Challenges, Think Tanks, annual Surgical Collaboration Day, a Summer Innovation Program, and seed grants. The exchange of ideas engendered by INSTINCTSM represents academic medicine functioning at its highest level of excellence.

In these efforts, INSTINCTSM has gained great momentum and experience in assisting with fabrication and prototypes of medical devices and surgical technologies. The center uses a clear and fast track policy to implement, adopt and trial these technologies within affiliated heath care networks. To date, INSTINCTSM has assisted in the development and patent filing of over a dozen medical devices, solutions and systems. INSTINCTSM currently has 32 ongoing projects.



The MasSpec Pen was developed by a team that included surgeon Dr. James Suliburk and scientists and engineers from UT Austin, Baylor College of Medicine and UT MD Anderson Cancer Center. Courtesy: Vivian Abagiu, The University of Texas at Austin

mission: INNOVATION

INSTINCTSM Surgical Collaboration Day



Attendees of Surgical Collaboration Day interact with a virtual reality cadaver at an event sponsored by our INSTINCT innovations center that attracted over 300 participants from over 40 organizations.

Our annual event dedicated to foster innovation and collaboration within the Texas Medical Center community and beyond. INSTINCTSM aims to incubate, identify, develop, and deploy disruptive surgical systems and technologies into the clinic,"

The Department of Surgery's second annual Surgical Collaboration Day was held Nov. 4, 2017. Originally set for Aug. 26, but rescheduled due to Hurricane Harvey, the event attracted more than 300 attendees, including surgeons, clinicians, researchers and technologists, from the Houston area (and from afar). Participants gathered in the Texas Medical Center Innovation Institute to forge new, innovative collaborations to solve the most advanced and pressing problems in healthcare and surgery.

Attendees engaged in "Surgical Speed Dating" sessions with Baylor surgeons. Aspirants had two minutes to meet with each surgeon, who had previously identified problems in their respective areas, to pitch their ideas and technologies.

Surgeons and technologists working at the crossroads of electrical engineering, biomechanics and medicine gave quick-fire presentations and the event culminated with open-floor exhibitions, where people from all over the world showcased their cutting-edge technologies.

- Dr. Stuart Corr Director, INSTINCT™



Divisions

The Division of Abdominal Transplantation, under the direction of Division Chief Dr. John A. Goss, offers an integrated multidisciplinary team approach to the prevention, diagnosis and therapy for adult and pediatric transplant patients. Working in concert with hepatologists, gastroenterologists, cardiologists, and other specialists, our 22 faculty surgeons and staff provide transplant services across the Texas Medical Center (TMC)-at Baylor St. Luke's Abdominal Transplant & Liver Disease Clinic, Texas Children's Hospital, and the Michael E. DeBakey VA Medical Center. Our liver transplant program is ranked number one in Houston and is one of the busiest services in the nation. Since 1998, our surgeons have performed over 1,900 liver transplantations, with outstanding results.

The division is committed to clinical and basic research, in part funded through NIH grants, in areas such as adult and pediatric solid organ transplantation, liver disease, kidney disease, immunogenetics, bone marrow transplant and chronic hepatitis C. Led by Dr. John M. Vierling, professor and chief of hepatology, the Baylor St. Luke's Advanced Liver Therapies Research Center gives patients access to clinical trials offering the latest therapies. Co-directed by Assistant Professors Drs. Peter Jindra and Matt Cusick, the division-run Immune Evaluation Laboratory continues to expand its research activities while remaining the largest program of its kind in the Texas Medical Center.

The division offers highly competitive advanced surgical fellowships in liver and renal transplantation.

ABDOMINAL TRANSPLANTATION



ABDOMINAL TRANSPLANTATION

iSWAP: Baylor St. Luke's Completes First Paired Kidney Donation



In the iSWAP program, candidates that have a living donor who is medically able, but not a compatible match to their intended ecipient are able to be paired with another recipient in return for a kidney that is compatible with their intended recipient. Illustration by Scott Holmes

 We now have a solution that can not only overcome the barriers of incompatibility but also increase the ability to transplant within our own community,"
 Dr. N. Thao N. Galvan Transplant Surgeon

Baylor St. Luke's Medical Center's Kidney Transplant Program completed their first successful internal kidney paired donation on July 18, 2018 through the new iSWAP program. This new program, in partnership with Baylor College of Medicine's Immune Evaluation Laboratory, offers patients in need of a kidney transplant the opportunity to expand their living donor pool. Through the iSWAP program, friends and family who are ABO or genetically incompatible with their intended recipient are able to donate their kidney to an anonymous recipient on the St. Luke's kidney transplant waitlist who also have an incompatible living donor. In return, the intended recipient will simultaneously receive a compatible, healthy living donor kidney.

This new program will increase a patient's chances of receiving a kidney transplant more quickly than waiting for a deceased donor kidney and allows the incompatible living donor to remain instrumental in saving the life of their friend or loved one. The Division of Cardiothoracic Surgery, led by our department of surgery Vice Chair and cardiothoracic surgery Division Chief 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, with over 10,000 aortic repairs and over 3,500 thoracoabdominal aneurysm repairs to his credit, leads a world-renowned team of surgeons and researchers innovating strategies for evaluation and treatment of cardiovascular diseases. The division also brings added expertise in minimally invasive and other cutting-edge technologies in part through its close collaborations with joint faculty in our divisions of general thoracic surgery and cardiothoracic transplantation and circulatory support, whose faculty members work closely together on clinical and research initiatives and training of our large cadre of cardiothoracic residents and fellows.

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 two dozen clinical studies. Our investigators, funded by the NIH, American Heart Association, Department of Defense, PCORI, VA Office of Research and Development, foundations and industry, pursue research on a wide array of cardiovascular issues, including coronary artery disease, heart failure and cardiomyopathy, aortic disease, arrhythmias, and cardiovascular regenerative medicine.

Our three-year thoracic surgery residency, accepting four residents annually, is the largest of its kind in the US. Our aortic fellowship provides specialized training in aortic surgery beyond cardiothoracic residency training, as does our minimally invasive cardiac surgery fellowship.

CARDIOTHORACIC SURGERY

Dr. Joseph S. Coselli has performed more than 10,000 surgical repairs of the aorta.

CARDIOTHORACIC SURGERY

T32 Research Training Program **Department Announces Inaugural Class**



Inaugural T32 Fellows Dr. Tarah Word and Dr. Waleed Ageedi. Our new Cardiovascular Research T32 marks a milestone in the expansion of our research training programs.

The possibility that the surgeonscientist could become extinct has been a growing concern; our T32 program was designed to address this by providing a structured research training experience," - Dr. Barbara Trautner, Director, Clinical Research

The Department of Surgery has enrolled the first post-doctoral trainees into its two-year T32 Research Training Program in Cardiovascular Surgery. The program is led by T₃₂ Director and Chair of Surgery Dr. Todd K. Rosengart, co-directors Dr. Scott A. LeMaire, vice-chair for research, and Dr. Barbara W. Trautner, director of clinical research in the Department of Surgery.

Our T₃₂ program is constructed along several tracks designed to appeal to a broad array of potential trainee interests. The Basic and Translational track involves training in laboratory-based research focused on understanding and addressing cardiovascular diseases. The Bioengineering and Biodesign track involves training and certification in the TMC Biodesign Fellowship and working within a multidisciplinary team to develop a medical device or digital tool. The Clinical and Outcomes track emphasizes developing skills in health services research or in conducting clinical trials with the ability to improve healthcare outcomes in cardiovascular disease.

Our Two Inaugural T₃₂ Trainees

Dr. Tarah A. Word earned her MS in Molecular Biology and Biochemistry at Florida A&M University and her PhD in Biophysical Chemistry at the University of South Florida. She joined Baylor in 2015 as a postdoctoral fellow. Dr. Word is in her second year under the advisement of Dr. Xander Wehrens (Department of Molecular Physiology and Biophysics), director of the Cardiovascular Research Institute at Baylor. She is enrolled in the Basic and Translational Research track.

Dr. Waleed Ageedi is originally from Iraq and earned his MD from the College of Medicine University of Baghdad. He has completed two years of a General Surgery Residency at the Yale School of Medicine. Dr. Ageedi is enrolled in the Basic and Translational Research track, mentored by Dr. LeMaire and Dr. Ying Shen.

The Division of Cardiothoracic Transplantation & Circulatory Support continues its long history as a world leader in the treatment of advanced heart and lung failure. Under the leadership of legendary transplant pioneer Dr. O. Howard "Bud" Frazier, professor of surgery, more than 1,300 heart transplants and over 1,200 ventricular assistance device (VAD) implants have been performed at Texas Heart Institute (THI)/Baylor St. Luke Medical Center's over the past 35 years, making it one of the world's highest volume programs. Today, Drs. Bud Frazier and Billy Cohn, professor of surgery and director of the TMC/Johnson & Johnson Center for Device Innovation, are working to develop the first total artificial heart that delivers blood via continuous flow. Dr. Gabriel Loor, surgical director of Baylor's lung transplant program, has catalyzed the lung transplant service's growing case volume and boosted the program's national research presence. Dr. Jeffrey Morgan has helped further the national and international presence of the division in his bold efforts to bring an international conference on mechanical circulatory support (MCS) to Houston under the sponsorship of the American Association for Thoracic Surgery, and his lead in editing a new textbook on MCS co-edited by many of our renowned colleagues at THI.

Our new director of research and innovation Dr. Faisal H. Cheema has already added momentum to our cardiac transplant research program. Drs. Morgan and Cheema were recently awarded \$4M from the Brockman Foundation to explore the feasibility of using hearts for transplantation after circulatory death.

Under the guidance of Dr. Jeffrey Morgan, program director for the American Association for Thoracic Surgery (AATS), the 2018 AATS Mechanical Circulatory Support Symposium was a great success, attracting 300 attendees. Numerous sessions were given or chaired by our faculty members at the event, which will be held in Houston next year as well.

Our fellows and trainees learn from true giants of the specialty. Division faculty recently published *Mechanical Circulatory Support for Advanced Heart Failure* (Springer 2018), an up-to-date and authoritative tome with a foreword written by the late Dr. Denton Cooley.



CARDIOTHORACIC TRANSPLANTATION & CIRCULATORY SUPPORT

Cover art, Advanced Lung Disease: Novel Therapies and Controversies Conference. Illustration by Scott Holmes

CARDIOTHORACIC TRANSPLANTATION & CIRCULATORY SUPPORT

Baylor St. Luke's First in Texas to Perform Breathing Lung Transplant



In a trial led by lung transplant surgical director Dr. Gabriel Loor, Baylor St. Luke's Medical Center is first in Texas and one of the first worldwide to perform a breathing lung transplant using ex vivo lung perfusion technology.

The surgery was a success and the transplanted lungs will vastly improve this patient's quality of life. There are over 100,000 people waiting for life-saving organ donations at any given time in the U.S. Advances in this technology are incredibly exciting for the future of transplantation," - Dr. Gabriel Loor

Surgical Director, Lung Transplant

Baylor St. Luke's Medical Center is the first hospital in Texas to perform a breathing lung transplant using the Ex Vivo Lung Perfusion (EVLP) procedure with Organ Care System Lung (OCS Lung) technology. This technology is designed to keep donor lungs functioning and "breathing" in humanlike conditions from the time of the donor procedure all the way to the transplant surgery.

The surgery was performed as part of the EXPAND II OCS trial, for which Baylor St. Luke's is a study site, testing the outcomes of transplanted donor lungs that are transported, preserved, optimized and monitored on a portable OCS device, and was performed by Dr. Gabriel Loor, surgical director of the lung transplant program at Baylor St. Luke's and chief of lung transplantation in the Division of Cardiothoracic Transplantation and Circulatory Support. Dr. Loor is the international principal investigator for this the largest study in the U.S. evaluating the ability to increase the number of useable donor lungs using the OCS technology. He is exploring ways to significantly expand the amount of time an organ can be out of the body prior to transplant, which expands the available donor pool and opens more opportunities for patients waiting for life-saving organ donations, as time and location are no longer limiting factors.

From its inception at Texas Children's Hospital in 1954, the Division of Congenital Heart Surgery at Baylor College of Medicine has become a world leader in pediatric and adult congenital heart surgery. One of the largest and most prestigious congenital heart programs in the country, Texas Children's Heart Center performs nearly 1,000 congenital heart surgeries and 20-30 heart transplants annually with outcomes among the best in the nation. Texas Children's Heart Center was ranked #1 in the nation in cardiology and heart surgery for the second year in a row by U.S. News & World Report in the 2018 Best Children's Hospitals Rankings.

Texas Children's congenital heart surgery group is one of 10 groups in the nation to earn the highest rating by the Society for Thoracic Surgery (STS) for best overall risk-adjusted operative mortality rates. The division maintains active research programs in congenital heart surgical outcomes and quality, pediatric heart and lung transplantation, mechanical circulatory support, neurodevelopmental protection, minimally invasive congenital heart repair, aortic reconstruction, and, in collaboration with Rice University, pediatric bioengineering.

We recently have undergone exciting leadership changes. Dr. Christopher A. Caldarone joined Texas Children's and Baylor College of Medicine in October 2018 as chief of congenital heart surgery after an international search. He takes the reins from Dr. Jeffrey Heinle, to whom we are so appreciative for his service as interim chief of congenital heart surgery this past year, in addition to his responsibilities as surgical director of heart and lung transplant. We are also pleased to welcome Dr. E. Dean McKenzie, who also recently rejoined the team as a congenital heart surgery.

The division offers a congenital cardiac surgery fellowship, one of only 11 national fellowships of its kind recognized by the ACGME.



CONGENITAL HEART SURGERY

ftrei He

Congenital heart surgeon Jeffrey S. Heinle. Photo by Allen Kramer

CONGENITAL HEART SURGERY

Welcoming Two Esteemed Congenital Heart Surgeons



Division Chief Dr. Christopher A. Caldarone and congenital heart surgeon Dr. E. Dean McKenzie join our faculty .

I have always admired
 Texas Children's Hospital
 and it is a great honor to
 serve as the congenital
 heart surgery chief,"

 Dr. Christopher Caldarone
 Chief, Congenital Heart Surgery

Texas Children's Hospital was proud to announce the arrival of two congenital heart surgeons onto its team this past year. Dr. Christopher Caldarone is our new chief of congenital heart surgery, and Dr. E. Dean McKenzie rejoins the faculty, returning after work at Emory University. Texas Children's Heart Center[®] is ranked #1 in the nation for cardiology and heart surgery by *U.S. News & World Report*.

"Drs. Caldarone and McKenzie bring a remarkable commitment to innovation, collaborative patient-centered care and dedication to achieving the best possible outcomes," said Dr. Larry Hollier, surgeon-in-chief at Texas Children's. "I know our patients and their families will benefit tremendously from their vast knowledge and background in this field."

"My role is to find ways to make a great program even greater and we are off to a terrific start with Dr. McKenzie joining the team. Together, I know we will be able to contribute to the team and drive innovation in ways to better serve our patients," said Caldarone. An internationally-recognized leader in congenital heart surgery, Dr. Calderone most recently served as surgeon-in-chief at The Hospital for Sick Children in Toronto.

"I'm looking forward to returning to the institution where my career as a congenital heart surgeon truly began," said Dr. McKenzie. "As I rejoin the incredible team I know so well, I am excited to be a part of all we will accomplish under Dr. Caldarone's leadership."

The Division of General Surgery, under the leadership of our Clinical Vice Chair Dr. William E. Fisher, is bringing a new array of specialty care to Baylor St. Luke's Medical Center at the same time it is introducing closed-unit critical care and acute care surgery services campus wide. Specialty services include a leading-edge endocrine surgery section, a new Weight Loss and Metabolic Center, and minimally invasive colorectal surgery offered at Baylor's new Inflammatory Bowel Disease Clinic. At the Michael E. DeBakey VA Medical Center, a team of faculty surgeons, led by our Vice Chair for Surgical Quality Dr. Samir Awad have helped the Houston VA retain its four-star rating from 2015-2017.

Ben Taub Hospital's surgical programs are the cornerstone of the department's training program and outreach to the community. Under the leadership of Dr. S. Rob Todd, chief of general surgery and trauma director, and Dr. Chad Wilson, associate trauma director, Ben Taub continues to extend its decades-long status as one of the busiest level I trauma centers in the U.S.-over 13,000 cases and 3,000 acute care patients annually. The Trauma Center serves approximately one million of the under-served in Houston, nearly a quarter of the entire population of Harris County.

Our general surgery residency program remains one of the best in the country. The program now offers a Global Surgery Track for surgical residents to receive international and rural training in non-traditional specialties. Our oneyear surgical critical care residency provides training in all phases of surgical critical care and research.

GENERAL SURGERY



GENERAL SURGERY

Weight Loss and Metabolic Center



Members of the Weight Loss and Metabolic Center, led by Drs. Carlos Galvani and Juliet Holder Haynes, and center coordinator Chandra Carr, anticipating Center of Excellence designation at Baylor St. Luke's Medical Center in 2019. The Center offers robotic and other minimally invasive procedures part of a comprehensive weight loss and metabolic program.

The ultimate goal is to create a group that would function like a tumor board for cancer patients - a group of specialists who meet with one another in weekly or monthly meetings to discuss the health of the patient,"

Dr. Carlos Galvani, an expert in bariatric and robotic surgery, recently joined the Department of Surgery at Baylor College of Medicine as chief of metabolic and bariatric surgery. Dr. Galvani leads the Weight Loss and Metabolic Center's journey to Center of Excellence (COE) status at Baylor St. Luke's Medical Center. This bariatrics COE team already encompasses a multidisciplinary group of specialists including bariatric endoscopists, gastroenterologists, internal medicine physicians, registered dietitians, clinical health psychologists and nurse coordinators. Dr. Galvani partners with bariatric surgeon Dr. Juliet Holder-Haynes, assistant professor of surgery, to provide severely overweight and obese patients a variety of surgical options, including minimally invasive and robotic procedures, to achieve long-term weight loss success and improved overall health.

Dr. Galvani has 15 years of experience in minimally invasive surgery, which includes bariatric surgery as well as esophageal surgery for conditions such as hiatal hernias, reflux disease and swallowing disorders. He also specializes in robotic surgery, which is computer-assisted surgery that uses three-dimensional images to perform highly complex surgeries.

Dr. Holder-Haynes specializes in bariatric and minimally invasive general surgery. Her research interests include adult and pediatric obesity.

- Dr. Carlos Galvani Chief, Metabolic and Bariatric Surgery Our Division of General Thoracic Surgery was founded in the summer of 2014 by world-renowned thoracic surgeon Dr. David J. Sugarbaker. Although we sadly lost Dr. Sugarbaker this past summer in his personal fight with cancer, he leaves a shining legacy in a robust and thriving division, as well as our Lung Institute, and Mesothelioma Treatment Center founded by Dr. Sugarbaker. Advanced techniques pioneered by Dr. Sugarbaker that are offered at Baylor St. Luke's Medical Center today include extra pleural pneumonectomy and inter-operative hyperthermic intraperitoneal chemotherapy (HIPEC) for the treatment of mesothelioma. Last year, the division recorded nearly 2,600 clinic visits and over 900 surgical cases cared for by a multidisciplinary team of experts.

Dr. Bryan M. Burt, associate division chief, and Dr. Shawn S. Groth, director of esophageal surgical services at Baylor St. Luke's, lead a multidisciplinary team that provides cutting-edge treatment for thoracic and esophageal diseases. Dr. Groth spearheaded the Lung Institute's new thoracic surgery robotics program, providing minimally invasive options for early stage lung cancer. Dr. Groth and colleagues recently launched the Center for Dysphagia and Swallowing Disorders—an unparalleled collaboration between unique specialties, otolaryngology, thoracic surgery, and gastroenterology.

The division has a strong focus on research and evidence-based care. Dr. Burt directs the General Thoracic Surgery Laboratory, which pursues basic and translational studies of mesothelioma, in part supported by NIH and foundation grants. The Mesothelioma Treatment Center has several ongoing, potentially groundbreaking clinical trials testing novel immunological and pharmacological therapies for malignant pleural mesothelioma.

Drs. Burt and Groth were recently joined by associate professor Dr. Taylor Ripley, who Dr. Sugarbaker recruited from the National Cancer Institute shortly before his passing. Dr. Ripley is a renowned expert in mesothelioma and esophageal carcinoma research, and takes over the reins of the Mesothelioma Treatment Center.

Baylor's prestigious thoracic surgery residency accepts four residents annually, with one position in the general thoracic track. We offer fellowships in advanced general thoracic surgery and thoracic oncology.

GENERAL THORACIC SURGERY



The POEM procedure is performed using an endoscope, with no incision in the chest or abdomen. Illustration by Scott Holmes

GENERAL THORACIC SURGERY

Advances in the Treatment of Esophageal Disease



Dr. Shawn Groth, co-director of the Center for Dysphagia and Swallowing Disorders, holds up the LINX[®] System, a small, flexible band of magnets connected by titanium wires. The magnetic attraction between the beads helps keep the weak LES closed to prevent reflux.

We had a fantastic inaugural Current Medical and Surgical Management of Esophageal Diseases Conference,"

The inaugural Current Medical and Surgical Management of Esophageal Diseases Conference sponsored by the Department of Surgery led by conference chair Dr. Shawn Groth, along with coordination by Ronnetta Eaton, was a huge success in its launch in Houston on Feb. 22-24, 2018 at the downtown Four Seasons Hotel. This multidisciplinary conference was designed for the wide spectrum of generalists and specialists who diagnose and manage esophageal-related diseases. Lectures, panel discussions, Q&A sessions and audiovisual presentations delved into diagnostic and interventional strategies for gastroesophageal reflux disease, achalasia, Barrett's esophagus and esophageal cancer.

Conference co-directors included Dr. Hashem El-Serag, chair of the Department of Medicine, and Dr. Sharmila Anandasabapathy, professor of medicine and director of Baylor Global Health. All found the conference to be a great opportunity to exchange current thinking, and look forward to this ongoing annual symposium.

- Dr. Shawn Groth Director, Esophageal Surgical Services The Division of Pediatric Surgery is one of the largest and most experienced pediatric surgical programs in the world. Dr. Jed G. Nuchtern, professor and chief, leads 20 full-time faculty members and staff physicians at Texas Children's Hospital—ranked #4 among top children's hospitals in the nation in the *U.S. News* & *World Report* 2018-2019 Best Children's Hospitals. An integral part of Texas Children's Cancer Center, ranked #6 in the nation in pediatric cancer by *U.S. News* & *World Report*, our Surgical Oncology Program provides the highest expertise in the surgical treatment of pediatric solid tumors. Baylor's pediatric surgery is one of the top programs in the nation.

The division strives to provide safest and highest quality multidisciplinary clinical care to children with highly complex conditions in outpatient and inpatient settings. Our efforts have borne fruit: Texas Children's was one of the inaugural hospitals to earn a Level 1 Children's Surgery Center certification by the American College of Surgeons in 2016. The many unique programs offered by our world class surgeons include the adolescent bariatric surgery program led by Dr. Mary L. Brandt, the fetal surgery service led by Dr. Oluyinka O. Olutoye, and pediatric trauma service led by Dr. Bindi Naik-Mathuria.

Research in the Division of Pediatric Surgery has grown tremendously in recent years. NIH-funded investigator Dr. Sundeep Keswani was appointed surgical director of Basic Science Research at Texas Children's. Keswani established the division's core laboratory which functions as a basic science and translational research center for faculty investigators.

PEDIATRIC SURGERY



TEXAS-SIZED CARE

Texas Children's Hospital



Texas Children's is ranked #4 among top children's hospitals in the nation in the U.S. News & World Report.

PEDIATRIC SURGERY

Texas Children's Hospital Again Ranks Among the Best



Over the last decade, no other pediatric hospital in the state has ever achieved an overall ranking as high as Texas Children's. Photo by Phil Steffek

Each year, our team exhibits incredible strength and kindness, as well as passion, caring for the inspirational children and families we serve," - Mark A. Wallace President and CEO, Texas Children's

Texas Children's Hospital is proud to consistently be recognized as a leader in pediatric care, ranking fourth among the nearly 200 pediatric centers surveyed by U.S. News & World Report in their 2018-19 edition of Best Children's Hospitals. Over the last decade, no other pediatric hospital in the state has ever achieved an overall ranking as high as Texas Children's. Additionally, according to the survey results, Texas Children's ranks as the best place in the country for pediatric cardiology and heart surgery, as well as pulmonology.

"Our patients, families, employees, and community were tested this year when Hurricane Harvey devastated the Houston area, yet through it all we demonstrated undeniable resolve, determination and courage," says Mark A. Wallace, president and CEO of Texas Children's. "Each year, our Texas Children's team exhibits incredible strength and kindness, as well as passion, caring for the inspirational children and families we serve. I believe this is one reason why we continue to maintain the respect and reputation as one of the best hospitals in the nation, and the destination for pediatric care in Texas."

In addition to ranking pediatric hospitals overall, U.S. News also ranks the top 50 pediatric hospitals across 10 major subspecialties each year. Texas Children's is one of only 10 children's hospitals across the country to achieve the Honor Roll designation, and the only hospital in Texas-and the southern U.S.-awarded this distinction.

Our Divisions of Adult and Pediatric Plastic Surgery combine the science of medicine with the art of patient care in our practices. Succeeding Dr. Larry H. Hollier, our new Chief of Pediatric Plastic Surgery Dr. Edward P. Buchanan leads a nationally-recognized team of highly experienced faculty surgeons who perform a wide variety of pediatric reconstructive services. The pediatric plastic surgery service at Texas Children's is one of the largest and most renowned programs in the nation dedicated to the treatment of the pediatric population. Our surgeons provide specialized care in the treatment and correction of craniofacial abnormalities, cleft lip and palate, and in the management of both complex and common congenital abnormalities and vascular birthmarks. Texas Children's is one of 11 U.S. hospitals to receive verification as Level 1 Children's Surgery Center by the American College of Surgeons-a testament to our commitment surgical quality and safety for our young patients.

Nationally-recognized plastic and hand surgeon Dr. Edward Reece, chief of adult plastic surgery, leads our busy cosmetic and adult reconstructive surgery service at Baylor's ultra-modern Center for Plastic Surgery housed in the Jamail Specialty Care Center. Our plastic surgeons who specialize in breast reconstruction work with a mul-tidisciplinary team of cancer physicians through Baylor's NCI-designated Dan L Duncan Comprehensive Cancer to deliver patient-focused care and best possible aesthetic outcomes.

Our ACGME-accredited plastic surgery integrated residency is one of the highest-ranked and longest-existing programs in the U.S. We offer a pediatric plastic surgery and craniofacial fellowship at Baylor and Texas Children's Hospital.



Adult and Pediatric PLASTIC SURGERY

Dr. Laura Monson works with 10-month-old Isabella Guzman. Photo by Allen Kramer The Division of Surgical Oncology specializes in the multidisciplinary management of soft tissue, hepatobiliary, pancreatic, colorectal, gastrointestinal, breast, skin and endocrine cancers. Our surgical oncologists are an integral part of Baylor's Dan L Duncan Comprehensive Cancer Center, which brings together all cancerrelated activities across all Baylor hospitals to fast-track our efforts to effectively treat cancer, and offer patients access to the latest clinical trials. As one of only 70 National Cancer Institute (NCI)-designated comprehensive cancer centers in the nation, the Cancer Center is recognized for its scientific leadership in novel approaches to cancer.

Our world-class physician-scientists are revolutionizing prevention, detection and treatment for several cancers. Our investigators' research projects are funded by grants from the NIH, NCI, NIDDK, VA Office of Research & Development, CPRIT, foundations and industry. Directed by department of surgery Clinical Vice Chair and general surgery Division Chief Dr. William E. Fisher, the Elkins Pancreas Center at Baylor Clinic has recently attracted over \$2.3M in NIH and extramural research funding. With NIH R21 and Uo1 grants, Fisher (PI) and Dr. George Van Buren, II, associate professor of surgery, have established a national prospective repository for pancreatic surgery outcomes, and direct the Baylor site of the NIH Consortium to Study Chronic Pancreatitis, Diabetes, and Pancreatic Cancer. Drs. Nader Massarweh, associate professor of surgery, and Hop S. Tran Cao, assistant professor of surgery, conduct grant-funded research studies on surgical oncologic outcomes at the Michael E. DeBakey VA Medical Center and larger VA healthcare system.



Ribbon structure of human BRCA1 C-Terminal

SURGICAL

Domain. Illustration by Scott Holmes, adapted from Sun, L., Edwards, R.A., Glover, J.N.M. PDB ID 40FB

SURGICAL ONCOLOGY

Scarless Thyroid and Parathyroid Surgery



Dr. Raymon Grogan is pioneering the treatment of thyroid and parathyroid disorders through a transoral approach.

Conventional open thyroid surgery uses a two-inch or larger incision in the neck. The conventional approach unavoidably leaves a noticeable lifelong scar on the neck—a very difficult area to conceal," - Dr. Raymon Grogan Section Chief, Endocrine Surgery

Scarless thyroid surgery (also called transoral thyroidectomy or transoral vestibular approach) is a safe and effective approach to removing abnormal thyroid or parathyroid glands. This innovative procedure leaves no visible scar on the neck. The new transoral vestibular approach has the same results as the conventional open thyroidectomy but without the undesirable scarring. It represents a revolutionary advance on previous, less effective efforts to perform minimally invasive thyroid surgery.

Dr. Raymon Grogan is one of the first surgeons in the world to offer this innovative option to patients with abnormal thyroid or parathyroid glands, which are located in the front of the neck, an inch or two below the chin. This novel approach leaves no visible scar. Grogan is a board-certified surgeon specializing in Endocrine Surgery. Dr. Grogan joined our department this past year from the University of Chicago as chief of endocrine surgery at Baylor St. Luke's Medical Center.

The Division of Vascular Surgery & Endovascular Therapy is one of the preeminent academic vascular surgery program in the country, building on the great legacy of this division once led by Dr. E. Stanley Crawford. The division is led by Division Chief Dr. Joseph L. Mills, Sr., whose WIfI lower extremity threatened limb classification system has garnered international recognition with its adoption by the Society for Vascular Surgery. Dr. Mills and his colleague Dr. Miguel Montero, associate professor of surgery, also lead our new, state-of-the-art limb salvage multidisciplinary effort at Baylor St. Luke's, named STEP (Save The Extremity Program). This program strives to seamlessly integrate vascular surgery and podiatry in outpatient and inpatient settings, with the goal of reducing amputations in patients with peripheral artery disease and diabetes. The division's eight faculty vascular surgeons and two podiatric surgeons provide a full array of minimally invasive endovascular interventions as well as traditional procedures at several institutions across the Texas Medical Center.

The division also houses iCAMP (the Interdisciplinary Consortium on Advanced Motion Performance)—the NIH-funded research powerhouse specializing in "game-changing" wearable technology. The center is directed by Dr. Bijan Najafi, professor of surgery and director of clinical research for the division. Dr. Panos Kougias, associate division chief and chief of vascular surgery at the Michael E. DeBakey VA Medical Center, also leads an NIH-funded clinical and health services research program currently exploring blood conservation in vascular surgery under a \$20M grant, amongst other projects.

The vascular surgery residency program at Baylor remains one of the premier vascular surgery training programs in the country, since it was established by Drs. Michael E. DeBakey and E. Stanley Crawford in 1970. The division also offers a new integrated vascular residency training program, a five-year ACGME-approved program.

VASCULAR SURGERY & ENDOVASCULAR THERAPY



The "Save the Extremity Program (STEP) seamlessly integrates vascular surgery and podiatry techniques and strategies in outpatient and inpatient settings. Pictured is a vascular stent in a mockup of an artery.

VASCULAR SURGERY & ENDOVASCULAR THERAPY

Wearable Technology to Prevent Foot Ulcers



Dr. Bijan Najafi was presented with the prestigious Best Research Project Award from Sheikha Moza bint Nasser, chair of the Qatar Foundation for Education, Science and Community Development, for his diabetic foot research. The methods of this research, developing and translating a low-cost and wearable system for diabetes patients undergoing dialysis, has the very real potential of reducing the consequences of peripheral neuropathy and ESRD by reducng falls, and improving blood flow to prevent foot ulceration." - Dr. Bijan Najafi Director, iCAMP

Dr. Bijan Najafi, professor of surgery, director of clinical research in the Division of Vascular Surgery and Endovascular Therapy, and director of iCAMP (the Interdisciplinary Consortium on Advanced Motion Performance), was awarded an international grant from Hamad Medical Corporation (Doha, Qatar) for his proposal, "A Novel Smartsock Technology To Prevent Diabetic Foot Ulcer Based on Fiber-optic Concept."

Dr. Najafi is collaborating with Dr. Talal Khader Talal, head of Podiatric Services at Hamad Medical Corporation on the project.

Diabetic Foot Ulceration (DFU) is a common comorbidity affecting 25 percent of patients with diabetes and loss of protective sensation associated with diabetes. This loss of feeling in diabetic feet reduces sensitivity to foot pain and results in painless wounds that can form ulcers. The iCAMP "smartsock" technology addresses the needs of DFU patients, one of many iCAMP innovations.

Many healthcare quality improvement experts recommend enhancing the process of high-risk foot care through use of stratified foot risk exams. These exams have been shown to be useful in identifying diabetic foot at risk and assisting in prevention of DFU up to 70 percent. However, currently available technologies remain insufficient to be used on a routine basis by non-expert caregivers or by patients because of impracticality, time constraints, or technical difficulty. This is a particularly critical issue in Qatar, where the average physician time spent in direct patient consultation is half of that in the US, and presents a large health care delivery challenge with competing co-morbidities for consultant time.

Selected Honors and Awards



Ray C. Fish Award for Scientific Achievement

Joseph S. Coselli, M.D., received the 2017 Ray C. Fish Award for Scientific Achievement, recognizing Dr. Coselli's innovative work in aortic aneurysm surgery.

Ben and Margaret Love Foundation Bobby Alford Award

Dr. Barbara W. Trautner was awarded the Ben and Margaret Love Foundation Bobby Alford Award for Academic Clinical Professionalism.



Inaugural Howell Professorship

Scott A. LeMaire, M.D. was appointed as the inaugural Jimmy and Roberta Howell Professorship in Cardiovascular Surgery in the Michael E. DeBakey Department of Surgery at Baylor College of Medicine. Photo: Dr. Howell and Dr. LeMaire at the Alumni Symposium 2014.

Master Clinician Awards

Surgery faculty members Dr. William E. Fisher, Dr. Matthew J. Wall Jr., and Dr. David E. Wesson were presented with 2017 Master Clinician Awards.



2018 ISHLT Lifetime Achievement Award

Dr. O. Howard Frazier received the 2018 ISHLT Lifetime Achievement Award from the International Society for Heart & Lung Transplantation.

Hans-Peter Krayenbuehl Memorial Award

Dr. Changyi Johnny Chen received the Hans-Peter Krayenbuehl Memorial Award for distinguished work in the field of research in cardiac function during the 2018 International Academy of Cardiology Awards at the 23rd World Congress on Heart Disease.



President of Texas Podiatric Medical Association

Dr. Jeffrey A. Ross was elected as president of the Texas Podiatric Medical Association.

Trauma System of Care Award from SETRAC

The Ginni and Richard Mithoff Trauma Center at Ben Taub Hospital received the Trauma System of Care Award for Level I and II Trauma Centers.









Endowed Chairs and Professors

Baylor College of Medicine

Josephine Abercrombie Endowed Professorship in Plastic Surgery Research Edward M. Reece, MD URSUT

Center for Molecular Surgery Chair Changyi Johnny Chen, MD, PhD

Cullen Foundation Endowed Chair Joseph S. Coselli, MD

The DeBakey Bard Chair in Surgery Todd K. Rosengart, MD

Jimmy and Roberta Howell Professorship in Cardiovascular Surgery Scott A. LeMaire, MD

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

Meyer-DeBakey Chair in Investigative Surgery George P. Noon, MD

Stan and Sue Partee Endowed Chair in Hepatology Prasun Kumar Jalal, MD

William J. Pokorny, M.D. Professorship in Pediatric Surgery Jed G. Nuchtern, MD

John W. "Jack" Reid, MD, '43 and Josephine L. Reid Endowed Professorship in Surgery Joseph L. Mills, Sr. MD

Lester and Sue Smith Endowed Chair in Surgery Jeffrey A. Morgan, MD

Olga Keith Wiess Chair of Surgery Alastair Thompson, BSc (Hons), MBChB, MD

Texas Children's Hospital

Donovan Chair in Congenital Heart Surgery Christopher A. Caldarone, MD

JLH Foundation Chair in Transplant Surgery John A. Goss, MD

Brad and Melissa Juneau Endowed Chair in Congenital Heart Surgery Jeffrey A. Heinle, MD

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

Susan V. Clayton Chair in Surgery E. Dean McKenzie, MD

Samuel Stal, MD Endowed Chair in Plastic Surgery William C. Pederson, MD



Selected Grants 2017-2018*

Ghanashyam Acharya, PhD

NIH Ro1

Ocular Drug Delivery Nanowafer Therapeutic to Treat Corneal Neovascularization \$1,578,152

Mary L. Brandt, MD NIH Teen Longitudinal Assessment of Bariatric Surgery: Teen-Labs \$150,415

Bryan Burt, MD

Momotaro-Gene, Inc. Efficacy of a Combination of MTG-201 and Checkpoint Inhibitors Anti PD-1 or Anti CTLA4 Antibodies in a Mouse Model of Malignant Mesothelioma \$150,654

Stuart Corr, PhD

St. Luke's Foundation Sue Nguyen Surgical Incubator Award / **INSTINCTSM** \$244,782

Phillip Salem Cancer Research Award Growing Carbon Nanotubes for 21st Century **Cancer** Application \$197,116

St. Luke's Foundation

iHertz: A Novel Technology For Rapidly Assessing Multi-Frequency Tumor Treating Fields \$110,000

Sundeep Keswani, MD (co-PI) NIH Ro1

Differential Shear Forces on Endocardial Endothelial Cells Regulate a Fibrotic Spectrum in the Left Ventricular Outflow Tract (LVOT) \$1,216,636

Scott A. LeMaire, MD

American Heart Association (co-PI: Shen) Molecular Signature of Sex Chromosome Genes Associated with Sex-Dependent Susceptibility to Ascending Thoracic Aneurysms \$1,042,800

Gabriel Loor, MD JLH Foundation

EXPAND II Clinical Trial in the Organ Care System for Ex Vivo Lung Perfusion for Lung Transplantation \$325,000

JLH Foundation

Biomarker Study to Compliment the EXPAND II Trial at Baylor St. Luke's Medical Center \$75,000

Nader Massarweh, MD, MPH VA HSR&D Merit Review Comparative Effectiveness of Alternative Strategies for Monitoring Hospital Surgical Performance \$445,365

Jeffrey Morgan, MD and Faisal Cheema, MD **Brockman Medical Research Foundation** Utilizing Hearts from Deceased Donors \$4,001,248

Hop S. Tran Cao, MD St. Luke's Foundation

HER2/NEU Antibody-Fluorophore Conjugate for Intraoperative Detection of HER2-Positive Breast Cancer \$164,500

Bijan Najafi, PhD, MSc (selected) NIH-STTR

IADLSYS: An Innovative Platform f Monitoring of Instrumental Activit Living \$1,306,268

NIH-STTR

ACTIVEPERS: Novel System to Det Real-Life Conditions \$666,426

NIH-STTR

A Practical Platform for In-Home R Monitoring of Cognitive-Frailty \$412,000

NIH-SBIR

Exercise Evaluation and Recovery (EXERT) \$224,955

NIH-SBIR

Upper Extremity Frailty Assessmen \$193,000

NCI R21

Managing Chemotherapy Induced **Cancer Patients Using Exergaming** \$189,289

Qatar National Research Fund

Therapeutic Plantar Electrical Stim Intervention During Hemodialysis **Balance and Mobility** \$176,273

NIH-STTR

ITMT: A Novel Wearable Platform to Assess **Cognitive-Motor Performance** \$102,713

	Todd K. Rosengart, MD
	NIH T ₃₂
or Objective	Research Training Program in Cardiovascular
ies of Daily	Surgery
	\$1,422,569
	Hu Ying Shen, MD, PhD
+ T-11- '	NIH-NHLBI RO1 (co-PI: LeMaire)
ect Falls in	Mitochondrial Damage-Induced Necroptotic Cell
	Anourysms and Dissections
	\$1 = 85 000
	\$1,505,000
emote	James W. Suliburk, MD (co-PI)
	CPRIT
	Ambient Mass Spectrometry for Preoperative
	Molecular Diagnosis of Thyroid Fine Needle
	Aspirate Biopsies
Гherapy	\$241,707
	S. Robert Todd, MD
	Linking Investigations in Trauma and Emergence
at Tool	Services (LITES) Network
10 1001	\$711.038
	\$711,950
	Sanjeev A. Vasudevan, MD (co-PI)
Neuropathy in	CPRIT Multi-Investigator Research Award
	Predictive Biomarkers and Novel Therapies for
	High-Risk Pediatric Liver Cancers (Targeted
	Therapy)
	\$900,000
ulation	
to Improve	

*Select grants totaling over \$50,000 in annual support

Michael E. DeBakey Department of Surgery at Baylor College of Medicine

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Baylor College of Medicine

MICHAEL E. DEBAKEY DEPARTMENT OF SURGERY