

# RESEARCH in the Michael E. DeBakey Department of Surgery

Baylor College of Medicine

MICHAEL E. DEBAKEY DEPARTMENT OF SURGERY

# **Table of Contents**

Abdominal Transplantation	4
AdultPlasticSurgery	.14
Cardiothoracic Surgery	.20
Cardiothoracic Transplantation & Circulatory Support	.46
Congenital Heart Surgery	.62
GeneralThoracicSurgery	.74
Metabolic and Bariatric Surgery	.80
PediatricSurgery	86
Pediatric Plastic Surgery	106
SurgicalOncology	116
Trauma & Acute Care Surgery	146
Vascular Surgery & Endovascular Therapy	164
Office of Surgical Research	178



# Abdominal Transplantation

The Division of Abdominal Transplant team spans multiple disciplines to address the complex problems of organ donation and transplantation as surgeons, hepatologist, nephrologists, critical care doctors and scientists delve into the intricacies of immunogenetics.

Serving both adult and pediatric populations, faculty within the department are driving better outcomes through research to understand the diseases and risk factors causing organ failure. Faculty associated with the Immune Evaluation Laboratory at Baylor College of Medicine, conduct studies on cellular and antibody immune responsiveness in relation to graft rejection, and immune response to allogeneic stem cell infusions for heart failure patients.

On average, about 20 people die every day from the lack of available organs for transplant. Decisions for organ use and allocation are often based on subjective surgeon judgment, simple risk scores such as the Model for End-Stage Liver Disease (MELD), and accepted protocols.

Researchers in the department have been questioning these accepted practices; instead, they are harnessing the expanding power of computing to understand nonlinear patterns of associations between donated organs and transplant recipients to help clinicians make more informed decisions. With improved evidencebased models to asses risks and predict outcomes, organs that would have been discarded are increasingly being used successfully to save lives.





# Nilesh Sunil Chitnis, PhD

Assistant Professor Division of Abdominal Transplantation Co-Director, Immune Evaluation Laboratory



# Keywords

- Hepatocellular carcinoma (HCC)
- Genomic differences of Hepatitis

# **Contact Information**

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# Keywords

- HLA Typing
- Anti-HLA antibodies
- Chimerism

# **Contact Information**

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#### **Ronald T. Cotton, MD**

Associate Professor Division of Abdominal Transplantation Director, General Surgery Residency Program Baylor College of Medicine

Surgical Director, Liver and Kidney Transplantation Michael E. DeBakey VA Medical Center

#### **Research Interests**

Dr. Cotton completed a 2-year research fellowship at the Liver, Kidney and Pancreas Center and the Human Genome Sequencing Center at Baylor. There, his research interest centered on developing a high-quality tissue repository, and using these samples to detect genomic differences between Hepatitis B-, Hepatitis C-, and non-viral associated hepatocellular carcinoma.

His research has resulted in numerous peerreviewed publication as well as local, national and international presentations. Dr. Cotton has received numerous clinical accolades during his residency, including being named a 2012 Raleigh Ross Scholar by the Texas Surgical Society.



N. Thao N. Galvan, MD, MPH Assistant Professor **Division of Abdominal** Transplantation



#### **Keywords**

- Surgical Technique of Transplantation
- Additive Bioengineering in Transplantation
- Hepatobiliary Surgery

#### Contact Information

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#### **Research Interests**

Dr. Galván is the author of numerous articles in the areas of solid organ transplantation outcomes and surgical technique in transplantation. Her current interests include the economics of solid organ transplantation, and her research project on additive biomanufacturing and collaborative translational research was recently funded.

# Scan for Publications



#### **Keywords**

- Adult and pediatric liver transplantation
- Biliary resection/reconstruction
- Bile duct tumor
- Bile duct injury
- Hepatobiliary surgery

#### **Contact Information**

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#### John A. Goss, MD

Professor and Chief, Division of Abdominal Transplantation **Baylor College of Medicine** JLH Foundation Chair in Transplant Surgery - Texas Children's Hospital

**Director, Liver Transplantation** - Baylor St. Luke's - Texas Children's Hospital

- VA Medical Center

#### **Research** Interests

Dr. Goss' primary research interests revolve around the genomic alterations that occur with hepatocellular carcinoma.





Peter Jindra, PhD Assistant Professor **Division of Abdominal** Transplantation **Co-Director, Immune Evaluation** Laboratory



#### **Keywords**

- Anti-HLA antibodies
- Hematopoietic stem cell transplantation
- microRNA in the immune system
- Transplant Diagnostics

#### **Contact Information**

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# **Research Interests**

The role of anti-HLA antibodies in transplant rejection, the effect of single nucleotide polymorphisms on bone marrow transplant outcomes, the expression and function of microRNA in lymphocytes and murine models of transplantation.

# Scan for Publications



# **Keywords**

- Adult and pediatric liver transplantation Dr. O'Mahony has research interest in • Bile duct resections clinical outcomes - specifically in kidney and • Hepatobiliary surgery liver transplant patients.

- Intraoperative RFA
- Kidney transplantation

# **Contact Information**

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#### Christine A. O'Mahony, MD

Associate Professor **Division of Abdominal** Transplantation Section Chief of Renal Transplantation **Baylor College of Medicine** 

# **Research** Interests





**Abbas Rana, MD** Associate Professor of Surgery Division of Abdominal Transplantation Baylor College of Medicine

### Keywords

- Adult and pediatric liver transplantation
- Bile duct resections
- Hepatobiliary surgery
- Intraoperative RFA
- Kidney transplantation

#### **Contact Information**

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#### **Research Interests**

Dr. Rana is an accomplished outcomes researcher with numerous published articles in esteemed journals. He has an expertise in liver and kidney transplantation as well as surgeries for malignant and non-malignant conditions that affect the liver, gallbladder, and bile ducts.



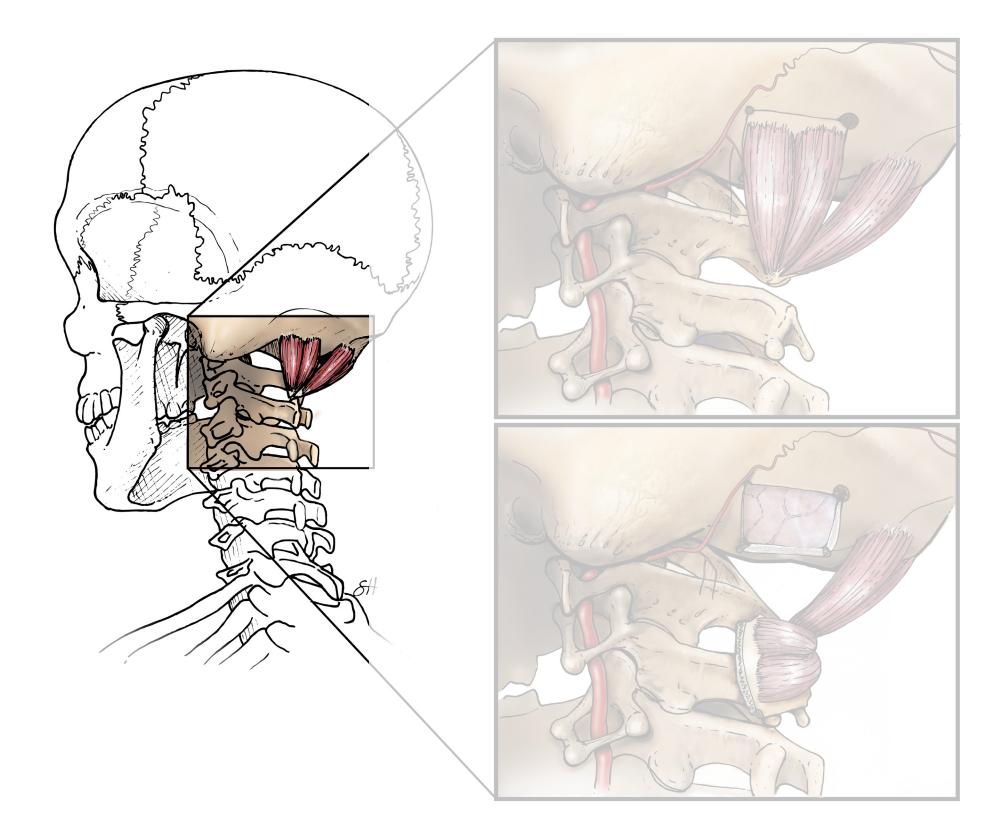
# Adult Plastic Surgery

Researchers in the Division of Adult Plastic Surgery are always striving to increase the quality of life for their patients in a holistic way as they work across disciplines to restore both physical form and function. The interventions of our surgeons go beyond cosmetic concerns to address serious deformities caused by trauma, surgical interventions, fibrosis and scarring.

Faculty are seeking innovative ways to use advances in fat grafting science and technique. Recent studies have demonstrated that adipose tissue, which contains adipose tissue-derived stem cells, offers proliferative and regenerative potential. Autologous fat transfer can be used for breast reconstruction and facial surgery, but also offers a valuable new approach to address contractile scar formation and fibrosis.

The newly formed discipline of spino-plastic reconstruction may be one of the most exciting initiatives within the department. Bringing together the expertise of surgeons from the fields of orthopedics, neurology, and plastics, spino-plastics is offering highly creative surgical techniques to treat challenging spinal pathologies.

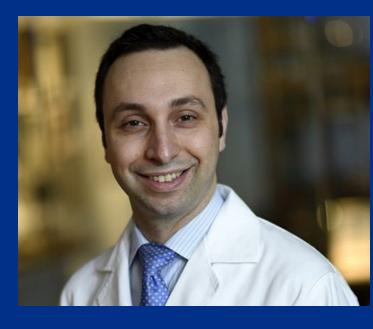
In addition to these clinical and scientific advances, division faculty have published numerous studies related to value-based cost allocation, telehealth implementation, business policy, and training in order to best position the field of plastic surgery to meet future challenges.





Marco Maricevich, MD Assistant Professor of Surgery Adult Plastic Surgery Baylor College of Medicine

Chief, Plastic Surgery Ben Taub Hospital



#### **Contact Information**

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#### **Research Interests**

Dr. Maricevich is an enthusiastic and passionate reconstructive and aesthetic plastic surgeon who has been lead or contributing author on over 60 published scientific manuscripts, book chapters, guidelines, and abstracts. Furthermore, he has given scientific research presentations at numerous national and international conferences.

Dr. Maricevich specializes in all kinds of reconstructive and aesthetic procedures of the face, body, and extremities, Targeted Muscle Reinnervation (TMR) - neuroma and phantom pain in limb amputees, as well as skin cancer and non-surgical aesthetic treatments.

#### Keywords

- Breast Reconstruction
- Aesthetic Surgery
- Surgical Education

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#### Sebastian Winocour, MD, MSc

Associate Professor of Surgery Adult Plastic Surgery Associate Director, Plastic Surgery Integrated Residency Program Baylor College of Medicine

Section Chief of Plastic Surgery Baylor St. Luke's Medical Center

#### **Research Interests**

Dr. Winocour is a dedicated researcher in the field of plastic and reconstructive surgery. His devotion to medical research led him to pursue a Master of Science degree while studying novel treatments to reduce scarring and keloid formation at McGill University. Throughout his subsequent years of training at Mayo Clinic and MD Anderson Cancer Center, his research portfolio has continued to grow, and he is a prolific author on the topics of breast reconstruction and aesthetic surgery outcomes, as well as surgical education. To date, he has contributed over 80 peer-reviewed scientific articles and book chapters in his field, and has served as invited speaker, panelist, and conference organizer in numerous national and international meetings. In his present role as the associate program director of Baylor's Plastic Surgery Residency Program, one of his top priorities is sharing his passion for research with the next generation. He is an active mentor of medical students, research fellows, and plastic surgery trainees and takes pride in their successful research endeavors.

**У**@BCM\_Surgery



**Jessie Z. Yu, MD** Assistant Professor of Surgery Adult Plastic Surgery Baylor College of Medicine

#### Keywords

- Lymphedema Surgery
- Microsurgery
- Reconstructive Surgery

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#### **Research Interests**

Dr. Yu attended Princeton University where she received her undergraduate degree in Molecular Biology, graduating with the Sigma Xi Award for Outstanding Thesis. She completed her MD at the NYU School of Medicine, and her dedication to excellence in patient care was recognized with the Gold Foundation Humanism Award. Dr. Yu further pursued an additional research fellowship at Memorial Sloan Kettering Cancer Center with a focus on the development of novel treatments for lymphedema. Dr. Yu completed her Plastic Surgery training at New York University, followed by an advanced fellowship in microsurgery and reconstructive plastic surgery at MD Anderson Cancer Center. Her commitment to research and education are reflected in not only her numerous publications, but also her passion for mentoring future generations of plastic surgeons.

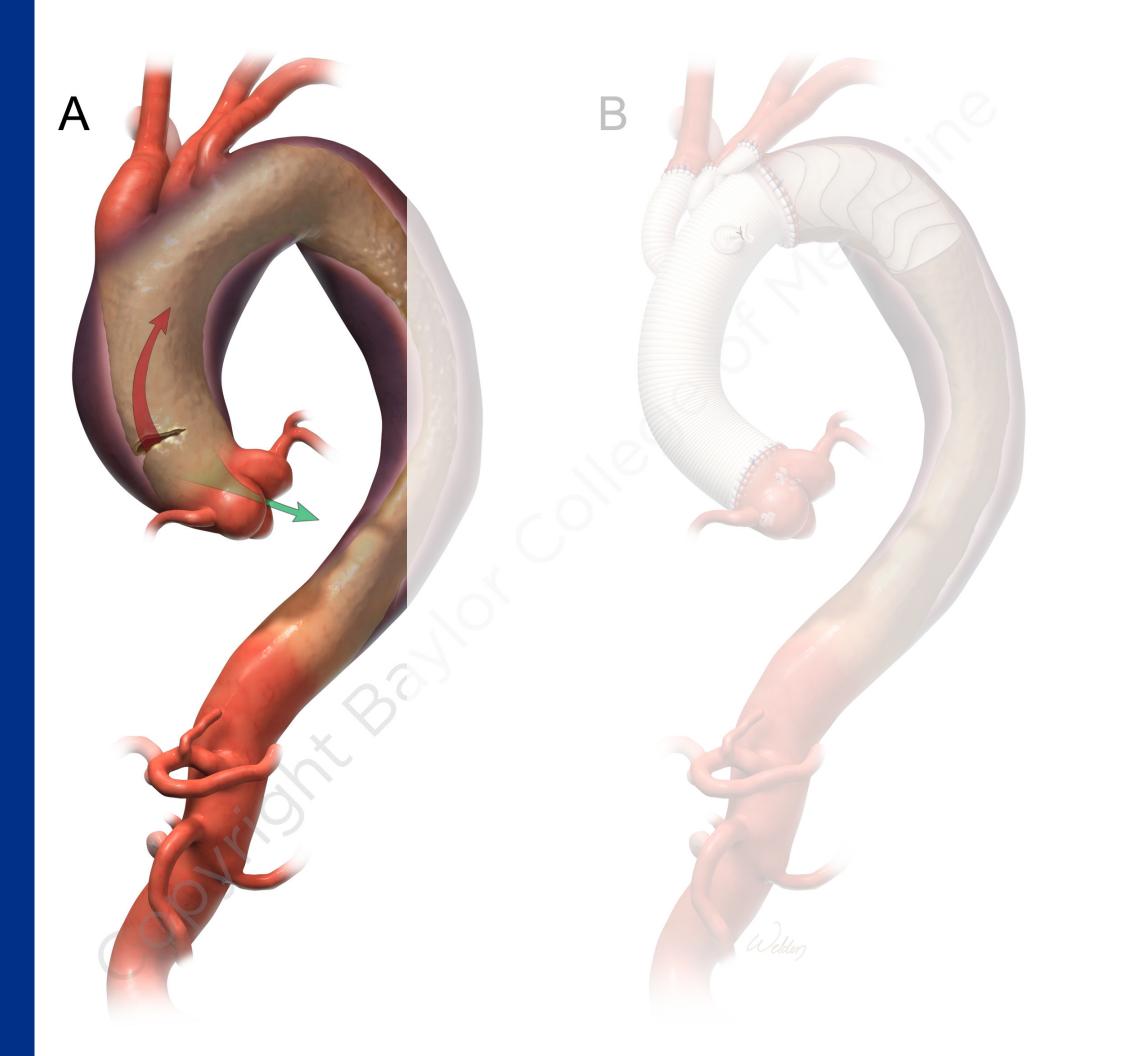
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18



# Cardiothoracic Surgery

The Division of Cardiothoracic Surgery is leading breakthrough research in heart failure, aortic disease, and valve disease through their work in clinical trials, device innovation, and in the laboratory. Our team of surgical experts and scientists partner together to develop innovative clinical therapies for cardiovascular disease. Dr. Todd K. Rosengart's Laboratory for Cardiac Regeneration is funded by an NIH grant to study the ability to convert scar tissue into new contractile cells in order to reduce fibrosis and restore cardiac function. Dr. Joseph S. Coselli serves as the international principal investigator and head of the Data Coordinator Center and Surgical Core for The Marfan Foundation's Aortic Valve Operative Outcomes in Marfan Patients study. The Aortic Disease Research Laboratory maintains one the world's most extensive aortic tissue banks, enabling high quality research both at Baylor and in other academic institutions around the nation.





**Lorraine D. Cornwell, MD** Assistant Professor of Surgery Cardiothoracic Surgery Baylor College of Medicine

Section Head, General Thoracic Surgery Michael E. DeBakey VA Medical Center

Dr. Cornwell's research focuses on

optimization of clinical outcomes of cardiothoracic surgery, especially minimally invasive procedures, off-pump CABG, valve

**Research Interests** 

repair, and VATS lobectomy.

#### Keywords

- Thoracic oncology
- Video-Assisted Thoracoscopic lobectomy

#### **Contact Information**

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Joseph S. Coselli, MD Professor & Executive Vice-Chair, Department of Surgery Cullen Foundation Endowed Chair Baylor College of Medicine

# Keywords

- Aortic Valve Disease
- Heritable Aortic Disease (eg, Marfan Syndrome)
- Aortic Aneurysm
- Aortic Dissection

#### **Contact Information**

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#### **Research Interests**

Mentored by the legendary aortic surgeon, Dr. E. Stanley Crawford, Dr. Coselli is today one of the world's most experienced aortic surgeons and best known as the foremost expert in thoracoabdominal aortic aneurysm repair, having published the milestone paper describing results after 3309 such repairs. He has an extensive clinical database and encourages participation in clinical research by designing research projects based on specific interests within aortic surgery. With approval, access to de-identified data from the Aortic Surgery clinical database may be granted. Dr. Coselli routinely publishes on a wide variety of aortic topics, and several outstanding papers and presentations have been prepared by residents, fellows, and students.

Key publications have influenced clinical practice trends by determining the best approaches towards preventing complications during aortic repair. Regarding thoracoabdominal aortic aneurysm repair, randomized clinical trials were conducted to establish the benefits of using cerebrospinal fluid drainage to protect the spinal cord (a technique now in widespread use in aortic repair) and renal perfusion as a protective measure against renal ischemia as well as performing retrospective analysis of left heart bypass as a protective measure against distal ischemia. Additionally, by routinely presenting informative academic lectures throughout the world, Dr. Coselli has disseminated the latest approach to surgical repairs of the aortic root (valve-sparing approaches, including those is patients with Marfan syndrome), aortic arch (Y-graft approaches, hybrid procedures), and thoracoabdominal aortic aneurysm repair (redo operations, modified repair in patients with Marfan syndrome). Dr. Coselli continuously seeks out new treatment paradigms and participates in numerous investigatorinitiated and industry-sponsored research projects conducted at Baylor College of Medicine and the Texas Heart Institute; studies include the use of second-generation transcatheter aortic valves, hybrid frozen elephant trunk repairs, as well as single-side branch and ascending aortic stent grafts.





Ravi Kiran Ghanta, MD Associate Professor of Surgery Cardiothoracic Surgery Associate Program Director, Thoracic Surgery Residency Baylor College of Medicine

Chief, Cardiac Surgery Ben Taub Hospital

#### Keywords

- Heart Failure
- Ventricular Remodeling
- Clinical Outcomes

#### **Contact Information**

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#### **Research Interests**

Dr. Ghanta's laboratory focuses on inflammation post myocardial infarction and the influence of immunomodulation on ventricular remodeling in heart failure. His laboratory utilizes gene and cell therapy and tissue engineering techniques in small and large animal models of heart failure. In addition, Dr. Ghanta utilizes machine learning and statistical analyses of large scale clinical databases to answer fundamental clinical questions in cardiac surgery. Dr. Ghanta is a member of the American Association of Thoracic Surgery, Southern Thoracic Surgery Association, Society of Thoracic Surgeons, American College of Surgeons, and the American Heart Association.

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#### Scott A. LeMaire, MD

Professor, Departments of Surgery and of Molecular Physiology and Biophysics Jimmy and Roberta Howell Professor of Cardiovascular Surgery Vice Chair for Research Department of Surgery Director of Research Cardiothoracic Surgery Baylor College of Medicine

#### Keywords

- Aortic aneurysm
- Thoracic aortic surgery
- Aortic dissection

#### **Contact Information**

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#### **Research Interests**

The focus of Dr. LeMaire's research program, which derives directly from his clinical interest in the surgical treatment of patients with thoracic aortic aneurysms and dissections, encompasses outcomes after thoracic aortic repair, strategies for preventing perioperative complications, genetic factors related to aortic disease, and the pathobiology of aortic wall degeneration. Dr. LeMaire's clinical research team has had a long-standing interest in the analysis of outcomes following aortic surgery, and has conducted randomized clinical trials comparing the effectiveness of various techniques for preventing associated ischemic complications. Further, his research team has conducted several studies to evaluate the safety profile of surgical adhesives, which are an important adjunct for limiting bleeding complications during aortic repairs.

In 2002, his basic science research group in the Aortic Disease Research Laboratory initiated the Thoracic Aortic Disease Tissue Bank, which currently houses samples and corresponding phenotypic data from over 4,000 patients with thoracic aortic disease. The members of the lab employ a wide range of standard and advanced techniques, including tissue analysis, cell-based experiments, mouse models of aortic disease, and single-cell transcriptome analysis. Through an American Heart Association Strategically Focused Vascular Research Network Award, the lab has established the Aortopathy Research Center in partnership with collaborators at the University of Kentucky College of Medicine. The goal of this project is to understand how different types of cells in the aortic wall respond to stress and how these responses differ in men and women. Dr. LeMaire's basic science laboratory also focuses on the role of various aspects of extracellular matrix metabolism in the development of aortic aneurysms and dissections. In particular, his group is studying the roles of destructive factors as well as reparative mechanisms during the development of aortic aneurysms and dissections.





**Megumi Mathison, MD, PhD** Associate Professor of Surgery Cardiothoracic Surgery Baylor College of Medicine

#### Keywords

- Cardiovascular disease
- Cardiac regeneration

#### **Contact Information**

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#### **Research Interests**

Heart failure is a leading cause of death in developed countries. Recent advances in interventional cardiology and cardiac surgery have made it possible to save numerous patient lives after myocardial infarction. However, those patients eventually develop end-stage heart failure since the loss of cardiac muscle is never replaced with new muscle. Our study focus is on regenerating cardiac muscle by transdifferentiating cardiac fibroblasts into cardiomyocytes. We reported that Gata4, Mef2c, and Tbx5 overexpression transdifferentiated cardiac fibroblasts into cardiomyocyte-like cells in vitro, and improved cardiac function in vivo. Our goal is to translate this in-situ cardiomyocyte regeneration into clinical therapy.

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30





**Kenneth L. Mattox, MD** Distinguished Service Professor Cardiothoracic Surgery Special Advisor to the President Baylor College of Medicine

#### **Research Interests**

His reputation as an innovator in trauma care is known worldwide. He has made original and significant contributions in trauma resuscitation, trauma systems, thoracic trauma, vascular injury, autotransfusion, complex abdominal trauma and multi-system trauma. His research in preoperative fluid restriction for penetrating trauma shook the foundation of surgical doctrine in this area. Authoring over 600 articles and more than 1000 abstracts, he has also served on six Editorial Boards and has been an Editorial Reviewer for 15 other journals.

Dr. Mattox is past President of the American Association for the Surgery of Trauma and current Secretary-Treasurer of the Michael E. DeBakey International Surgical Society. He previously chaired the Mayor's Red Ribbon Committee to address Houston Fire Department Emergency Medical Services and sat on the Hospital Subcommittee of the Mayor's Special Task Force on the Medical Aspects of Disaster. He has served as consultant to the Center for Biologic Evaluation and Research of the FDA and on the Board of Directors of the Rotary Club of Houston, Doctors' Club of Houston, Wayland Baptist University, the American Association for the Surgery of Trauma, the Southeast Texas Trauma Regional Advisory Council, the American College of Surgeons Board of Governors, and Chairman of the Board of the John P. McGovern Museum for Health & Medical Science.

Recently, Doctor Mattox stepped down from his longtime position as Chief of Staff at the Ben Taub Hospital and continues his work at Baylor as Special Advisor to the President and CEO of Baylor, Dr. Paul Klotman.

#### **Contact Information**

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Marc R. Moon, MD Professor and Chief, Cardiothoracic Surgery Baylor College of Medicine

Chief, Adult Cardiac Surgery Texas Heart Institute

Chief, Adult Cardiac Surgery Section, Baylor St. Luke's Medical Center



#### Keywords

- Aortic Aneurysm Repair
- Reoperative Cardiac Surgery
- Coronary Artery Bypass Surgery
- Mitral Valve Repair
- Adult Cardiac Surgery

#### **Contact Information**

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#### **Research Interests**

Dr. Moon, an expert and pioneer in the most advanced forms of cardiac surgery, has served as president of the American Association for Thoracic Surgery and as a member of numerous national and international scientific organizations, including the American College of Surgeons and the Society of Thoracic Surgeons. As a world class surgeon, Dr. Moon specializes in aortic and valve surgery and sees some of the most complex cardiac surgery cases. He has also been a leading advocate for diversity in the field of cardiac surgery. Dr. Moon's focus is to continue advancing cardiothoracic surgery and develop research to make the field even safer for the future.

# Keywords

- Aortic Surgery
- Reoperative Cardiac surgery
- Valvular heart disease
- Endovascular Surgery

#### **Contact Information**

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#### Vicente Orozco-Sevilla, MD

Assistant Professor of Surgery Cardiothoracic Surgery Baylor College of Medicine

#### **Research Interests**

Dr. Orozco's research focuses on improving the of clinical outcomes of Aortic surgery, particularly on reoperative cardiac surgery and thoracoabdominal aortic aneurysm repair. As one of the few surgeons in the country with formal training in both cardiothoracic surgery and vascular surgery, Dr. Orozco is constantly looking for ways to simplify, modify and apply the current surgical approaches during aortic repair.





#### Ourania Preventza, MD, MBA

Professor of Surgery Cardiothoracic Surgery Baylor College of Medicine

## Keywords

- Aortic Surgery, open and endovascular technology
- Structural heart disease
- Cardiac disease in women, and minorities
- Surgical Outcomes Research

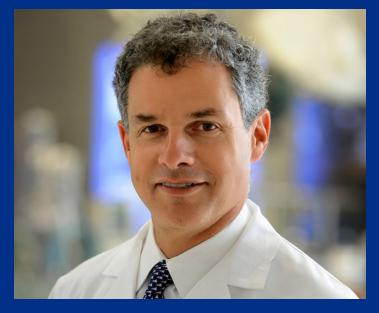
#### **Contact Information**

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#### Research Interests

Dr. Preventza's research focuses on the development of percutaneous techniques for valvular and thoracic aortic diseases, aortic root surgery, cardiac disease in women and surgical outcomes. She is the current President Elect of International Society of Endovascular Specialists. Dr Preventza has been very prolific in publishing clinical research, with more than 140 peer review publications and numerous presentations in national and international meetings.

# Scan for Publications



**Todd K. Rosengart, MD** Professor and Chair Department of Surgery DeBakey-Bard Chair of Surgery Baylor College of Medicine

Professor of Heart and Vascular Disease Texas Heart Institute

#### Keywords

- Gene therapy
- Cellular reprogramming
- Angiogenesis

#### **Contact Information**

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#### **Research Interests**

Basic and translational research have been predominant in Dr. Todd Rosengart's academic career beginning with his serving as a clinical fellow at the NIH, and continuing with appointments as an independent investigator with American Heart Association sponsored research support and NIH extramural funding. This effort is highlighted by his role in developing angiogenic therapy as a potential treatment for atherosclerotic coronary artery and vascular occlusive disease, and in our lab's multi-year focus to study cardiac cellular reprogramming. This NIH-funded work includes the translation of in vivo examinations of angiogenic growth factors starting in the mid-1980s into the (first in the U.S.) adenovirus-mediated delivery of angiogenic vascular endothelial growth factor (VEGF) to the human heart. Together with this experience, our current investigations of cellular reprogramming offer the possibility of "bio-interventions" to treat hundreds of thousands with advanced heart disease.

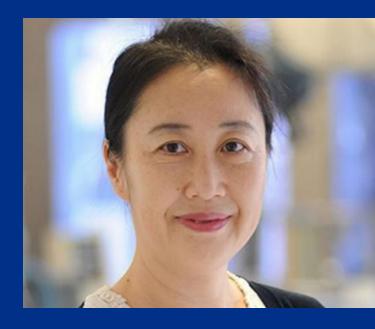
Dr. Rosengart and others have demonstrated that administrating a cardiac transcription factor cocktail results in as much as a 50% increase in ventricular function, reduced fibrosis, and increased induced cardiomyocytes (iCMs) populations in small animal myocardial infarction models. Given his goal to develop a new treatment for CHF, he is studying whether cellular reprogramming can improve cardiac infarct remodeling and function by testing the serial hypotheses that: a) inadequate up-regulation of requisite reprogramming genes limits cell transdifferentiation efficiency, b) that the density of (contractile) iCMs in infarct zones as well as indirect or paracrine mechanisms play critical roles in GMT/VEGF mediated infarct remodeling, and c) that cardiac fibroblasts can be made susceptible to reprogramming in a clinically relevant fashion. His team will use cutting edge molecular strategies and preclinical animal models to execute these aims.





Alexander Schutz, MD Assistant Professor of Surgery Cardiothoracic Surgery Baylor College of Medicine

Co-Director, Cardiothoracic Surgery Critical Care Michael E. DeBakey VA Medical Center



# Keywords

- Myocardial Protection
- ECMO
- Total Arterial Revascularization

#### **Contact Information**

Baylor College of Medicine One Baylor Plaza, BCM 390 Houston, TX 77030

#### **Research Interests**

Dr. Schutz earned his medical degree from the University of Nebraska Medical Center in 2011 and completed his general surgery residency at the University of Oklahoma Health Sciences Center. During his residency, Dr. Schutz spent time at the Perelman School of Medicine at the University of Pennsylvania. During his cardiothoracic residency training at Baylor, Dr. Schutz served as administrative chief resident, published several papers in the field of cardiothoracic surgery, and presented at national meetings of renowned professional organizations, such as the STS and the AATS.

# Keywords

- Aortic aneurysms and dissections
- Diabetic vascular diseases
- Vascular biology and diseases

#### **Contact Information**

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**Ying H. Shen, MD, PhD** Professor of Surgery Cardiothoracic Surgery Director, Aortic Diseases Research Laboratory Baylor College of Medicine

#### **Research Interests**

Dr. Shen's broad research interest is on vascular diseases. Her major focus is understanding the molecular mechanisms of aortic aneurysms and dissections, highly lethal but poorly understood conditions. Her lab has ongoing projects to investigate the signaling pathways and gene expression that control aortic destruction and inflammation as well as healing and remodeling. The ultimate goal of Dr. Shen's research is to discover pharmacological treatment to prevent progressive aortic degeneration and disease deterioration.



**Vivek Singh, PhD** Assistant Professor of Surgery Cardiothoracic Surgery Baylor College of Medicine

#### Keywords

- Heart Regeneration
- Cellular Reprogramming
- Transcription Factors
- Gene Therapy

#### **Contact Information**

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#### **Research Interests**

Dr. Singh's research focuses on molecular and genetic mechanisms that mediate myocardial remodeling and heart failure, and the development of new drug and gene-based therapies for heart disease. The research Dr. Singh accomplished during his doctoral and post-doctoral tenures has significantly contributed to a better understanding of the biochemical, molecular, and genetic mechanisms that regulate cardiac function.

A significant amount of Dr. Singh's work has focused on the renin-angiotensin system and its direct involvement in mediating cell growth in the heart. Dr. Singh has characterized an intracardiac intracellular renin-angiotensin system and has shown that the precursor genes of the system significantly modulate a number of pathological conditions such as diabetic cardiomyopathy. Recently, he identified the genetic biomarkers predisposing to sudden death in heart failure patients and studied the underlying mechanism of ventricular arrhythmias and increased risk of sudden cardiac death in dilated cardiomyopathy. More recently, Dr. Singh examined key developmental cardiac regulators, known as transcription factors GMT (GATA4, MEF2C and TBX5), that reprogram cardiac fibroblasts into functional, beating cardiomyocytes, a novel, promising gene therapy strategy to treat heart failure. Dr. Vivek has a vast experience working on cardiac myocytes and fibroblast both in vitro and in vivo, especially in cardiac electrophysiology. The overall summary of his work is to better understand the molecular signaling pathways, to identify genetic biomarkers and gene regulatory events that modulate cardiac function, and to better understand how these mechanisms may contribute to the development of interventions to modulate heart failure.





Matthew J. Wall Jr, MD Professor of Surgery Cardiothoracic Surgery **Baylor College of Medicine** 

**Deputy Chief of Surgery Ben Taub Hospital** 



# **Keywords**

- Trauma
- Cardiac, Thoracic, Pulmonary, Vascular Trauma
- Resuscitation
- Trauma Systems

#### **Contact Information**

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# **Research Interests**

Dr. Wall's research interests include the management of the injured patient, novel resuscitation strategies, and injuries to the chest and the vascular system.

# **Keywords**

- Dr. Yang received his MD from XinJiang University of Medical Sciences, MS of cellular reprogramming Medical Biochemistry from Sun Yat-sen University in China, and finished his Ph.D expression thesis in Molecular Cardiology from Charite stem cell regulation University Campus Benjamin Franklin (Berlin)-magna cum laude. His research interests include cardiac progenitor cell progenitor cells (iPS) for clinical and cellular reprogramming, normal and leukemic hematopoietic stem cell regulation, therapies epigenetic control of gene expression, ES cells, generation of patient-specific pluripotent progenitor cells for clinical therapies.
- Epigenetic mechanisms of gene
- Cardiac progenitor regulation and direct • Normal and leukemic hematopoietic • Embryonic stem cells (ESCs) • Generation of patient-specific pluripotent

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#### Jianchang Yang, MD, PhD Associate Professor of Surgery and Medicine Cardiothoracic Surgery **Baylor College of Medicine**

#### **Research Interests**

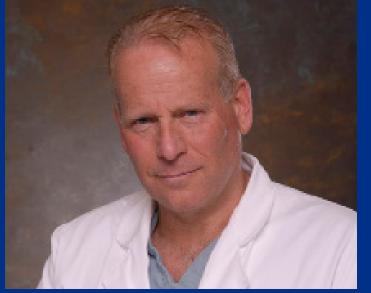


# Cardiothoracic Transplantation and Circulatory Support

A key area of Texas Heart Institute research involves using ventricular assist devices for patients with advanced heart failure. These devices can be implanted as a bridge to transplant, destination therapy, or bridge to recovery.

Texas Heart Institute/CHI Baylor St. Luke's Medical Center has one of the largest experiences in the country with LVADs. Devices include the HeartMate II, HeartMate III, HeartWare HVAD, Jarvik, and the Syncardia Total Artificial Heart.





#### William E. Cohn, MD

Professor of Surgery Cardiothoracic Transplantation and Circulatory Support Baylor College of Medicine Vice President Johnson & Johnson Medical Devices Company Executive Director Center for Device Innovation Texas Medical Center

#### Keywords

• Ventricular assist devices

#### **Contact Information**

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## **Research Interests**

Dr. Cohn is one of the leaders of the team of experts developing a total artificial heart that will deliver blood by means of continuous flow rather than pulsation. This research has grant support from the National Heart, Lung, and Blood Institute; the John S. Dunn Research Foundation; the Alexander Family Trust; and the McIngvale family Trust. This new artificial heart is smaller and more durable than previous generations of artificial hearts.

Dr. Cohn currently has 170 active or pending patents for his inventions and is the founder or co-founder of five venture-backed life science startups. Dr. Cohn serves as a vice president for Johnson & Johnson's Medical Device Companies and as the Executive Director of the Center for Device Innovation in the Texas Medical Center in Houston. Dr. Cohn has recently been inducted into the American Institute for Medical and Biological Engineering College of Fellows. Dr. Cohn was nominated, reviewed and elected for improving patient outcomes by inventing technologies that help doctors at all skill levels achieve excellent results and decrease procedural invasiveness.





#### Abdussalam Elsenousi, MD

Instructor in Surgery Cardiothoracic Transplantation and Circulatory Support Baylor College of Medicine

#### **Contact Information**

Texas Heart Institute 6770 Bertner Avenue Cooley 355N Houston, Texas 77030 (832) 355-3000

#### Research Interests

Dr. Abdussalam Elsenousi is a cardiothoracic and transplant surgeon who specializes in advanced heart and lung failure and mechanical circulatory support. Dr. Elsenousi completed his Cardiovascular Surgery Fellowship at Texas Heart Institute in 2018. He joins the faculty of Baylor College of Medicine after completing his Cardiothoracic Transplantation Fellowship in March 2020.

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#### **O. Howard Frazier, MD** Professor of Surgery Cardiothoracic Transplantation and Circulatory Support Program Director and Chief, Center for Cardiac Support Director, Surgical Research, Cullen Cardiovascular Research Laboratories Co-Director, Center for Preclinical Surgical and Interventional Research, THI

#### Keywords

• Mechanical circulatory support

#### **Contact Information**

Baylor St. Luke's Cooley Transplant Center 6720 Bertner Avenue. Houston, TX 77030 832-355-3000

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#### **Research Interests**

Dr. Frazier's interest in mechanical circulatory support began in 1969, when, as a student at Baylor College of Medicine, he wrote a research paper about the experimental total artificial heart, which was first implanted in 1969 by Dr. Denton Cooley. Throughout the 1970s and 1980s, Dr. Frazier continued experimental work toward developing an implantable left ventricular assist device (LVAD) to aid the failing heart. He implanted the first LVAD in 1986 with the HeartMate I, followed in 2003 with the first HeartMate II. Since then, this device has become the most widely used implantable LVAD in the world. In 2011, Dr. Frazier implanted the first successful continuous-flow total artificial heart using two second generation HeartMate II LVADs to replace a patient's failing heart.

After more than 30 years as a pioneer in the surgical treatment of advanced heart failure, Dr. Frazier's current research endeavor is to develop an implantable total heart replacement (artificial heart). As Co-Director of the Center for Preclinical Surgical & Interventional Research at the Texas Heart Institute, he is one of the leaders of the team of experts developing a total artificial heart that will deliver blood by means of continuous flow rather than pulsation. This research has grant support from the National Heart, Lung, and Blood Institute; the John S. Dunn Research Foundation; the Alexander Family Trust; and the McIngvale family Trust. This new artificial heart is smaller and more durable than previous generations of artificial hearts.





#### Harveen Lamba, MD, MSc

Assistant Professor of Surgery Research Director of Cardiothoracic Transplantation and MCS Cardiothoracic Transplantation and Circulatory Support Baylor College of Medicine



#### Keywords

- Heart Failure
- Transplant
- Mechanical Circulatory Support

# **Contact Information**

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#### **Research Interests**

Dr. Lamba has worked at the intersection of bioengineering and cardiac surgery, leveraging an interdisciplinary and collaborative approach for addressing important clinical gaps. Dr. Lamba is responsible for the development of the largest ventricular assist device (VAD) clinical database in the United States and currently oversees clinical outcome projects in the division of cardiothoracic transplantation and mechanical circulatory support. Several of the clinical projects she has participated in include risk analysis and prediction for complications after VAD implantation in advanced heart failure patients. While VADs have been a promising technology in these patients, the risks of stroke, infection, and gastrointestinal bleeding associated with them remain a limitation and affect patient quality of life. Concurrently she works on clinical and preclinical projects aimed at expanding the heart donor pool for transplantation, which is vital for providing end stage heart failure patients with an option that extends their life without compromising their quality of life.

# Keywords

- Robotic cardiac surgery
- Complex mitral valve repair surgery
- Heart transplantation
- Ventricular assist devices

# **Contact Information**

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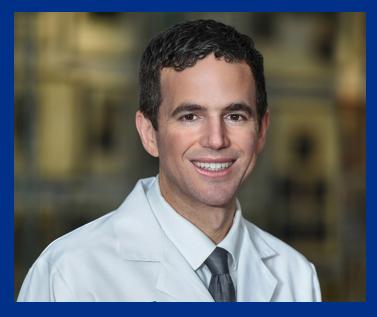
**Kenneth K. Liao, MD, PhD** Professor and Chief, Cardiothoracic Transplantation and Circulatory Support Baylor College of Medicine

Chief, Section of Cardiothoracic Transplantation and Mechanical Circulatory Support Baylor St. Luke's Medical Center

#### **Research Interests**

Dr. Liao has given numerous presentations both nationally and internationally. He has participated in over 20 clinical trials as a Principal Investigator or Co-Investigator. His work in the field of robotic cardiac surgery, complex mitral valve repair surgery, heart transplantation and ventricular assist device has been extensively published.





**Gabriel Loor, MD** Associate Professor, Cardiothoracic Transplantation and Circulatory Support Baylor College of Medicine

Surgical Director, Lung Transplant Program Baylor St. Luke's Medical Center



#### Keywords

- EVLP
- Lung transplant

# **Contact Information**

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#### **Research Interests**

Dr. Loor's research interests include improved donor lung utilization and recipient outcomes. He is a PI on several international trials using ex vivo lung perfusion platforms to increase donor yield and quality. He is credited with the first "breathing lung transplantation" in the Midwest performed in 2014 and in Texas in 2017. His translational lab focuses on the use of this technology to improve the quality and quantity of potential lung transplants. Dr. Loor has published several key papers on prolonged preservation of donor organs with an emphasis on reducing ischemic injury and the inflammatory response. He has also published several articles on blood conservation, safety checklists and surgical outcomes after adult cardiac surgery.

# Keywords

- Heart and Lung Transplant
- Impella Circulatory Support
- ECMO

#### **Contact Information**

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#### Aladdein Mattar, MD Assistant Professor, Cardiothoracic Transplantation and Circulatory Support Baylor College of Medicine

#### **Research Interests**

Dr. Mattar's research interest focuses on methods to expand thoracic organ utilization and includes the use of the portable normothermic Organ Care Unit for hearts and lungs. Dr. Mattar was involved in the Expand Trial II which looked into the use of portable normothermic Ex Vivo Lung Perfusion (EVLP) for transportation and evaluation of extended criteria donor lungs using the Organ Care System (OCS).

Dr. Mattar is co-investigator in a research study with Dr. Liao, which is looking into increasing heart transplantation by using hearts from donors after circulatory death (DCD) and will set the benchmark for the criteria of DCD hearts for the future of heart transplantation.





# Nandan Kumar Mondal, MSC, MPhil, PhD

Assistant Professor, Cardiothoracic Transplantation and Circulatory Support Baylor College of Medicine

# Keywords

- Basic science and translational research
- Cardiothoracic surgery
- Heart failure and transplantation

#### **Contact Information**

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Dr. Mondal has approximately a decade's worth of experience in the field of clinical and basic science research. He has extensive biomedical research experience in the field of basic/ translational pathophysiology related to critical illness such as cardiac failure, stroke, shock and trauma, with expertise in innovative methods and data science related to the study with special emphasis on infection, bleeding, thrombosis, inflammation, oxidative stress, mitochondrial dysfunction, microbiota and exosome, immune function etc.

Dr. Mondal's research has provided some of the most comprehensive studies resulting groundbreaking discoveries in platelet/leukocyte biology which are helping to advance science and improve the health of millions of people with heart failure and cardiovascular disease. Additionally, Dr. Mondal's mock-loop studies on in-vitro blood shearing experiments showed that non-physiological high shear stress generated by mechanical circulatory devices may be responsible for bleeding and thrombosis in heart failure patients with biomedical device support. Dr. Mondal is currently conducting multiple translational basic science research on (i) DCD heart under OCS support, (ii) hemostatic and thromboembolic dysfunction in LVAD recipients and (ii) immunomodulation of inflammation in other cardiac surgical cases (valvular surgeries, CABG surgeries via conventional or robotic approaches) at the division. Dr. Mondal published over 60 original research articles and conference abstracts (45 peer-reviewed papers: 38 first authored and 13 as senior authored). Dr. Mondal currently overseeing, managing, designing, monitoring, ensuring the integrity of laboratory experimentation for the basic science surgical research at the division. Dr Mondal's future goal is to expand the number of organs available for transplant by demonstrating the safety and feasibility of using DCD hearts. Future goal also includes advance the understanding of biomedical device-induced (shear stress) blood cell dysfunction and to use this knowledge to guide the clinical practice and the design improvement of biomedical devices.







**George P. Noon, MD** Professor of Surgery Cardiothoracic Transplantation and Circulatory Support Meyer-DeBakey Chair in Investigative Surgery Baylor College of Medicine



#### **Contact Information**

Fondren Brown Bldg. 6565 Fannin Street, Suite F426 Houston, TX 77030 713-790-3155

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#### **Research Interests**

Dr. George P. Noon has focused his surgical career in organ transplantation and cardiac assist devices. In 1968, Dr. Noon, Dr. Michael E. DeBakey, and their surgical team performed their first heart and later lung transplant.

In 1988, Drs. Noon and DeBakey met with engineers from NASA to develop a miniature axial flow blood pump. Ten years later, Dr. Noon participated in the care of President Boris Yeltsin, who needed a coronary bypass operation. In the same year, the first MicroMed DeBakey-Noon human implants were performed in Berlin, Germany. In 1999, Dr. Noon was inducted into the Space Technology Hall of Fame.

# **Contact Information**

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Alexis Edward Shafii, MD Associate Professor of Surgery Cardiothoracic Transplantation and Circulatory Support Baylor College of Medicine

Director, Heart Transplantation Baylor St. Luke's Medical Center

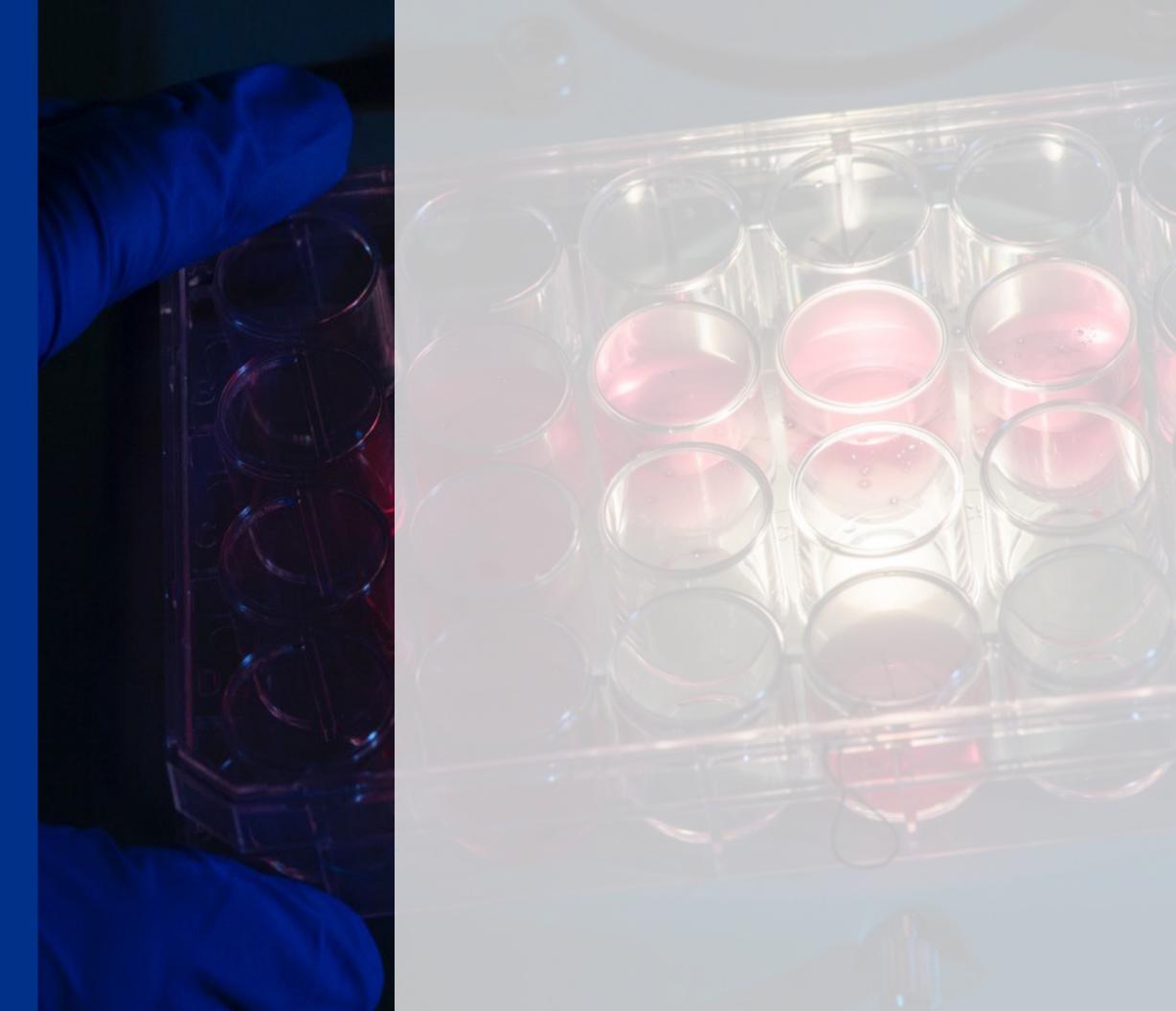
#### **Research Interests**

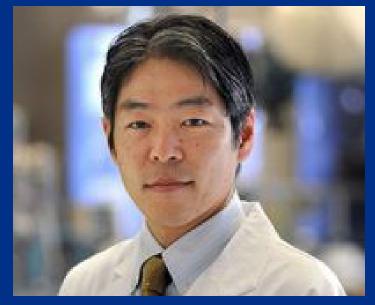
Dr. Shafii's research focus includes both heart and lung transplantation, as well as the use of mechanical circulatory support devices to aid or substitute for the failing heart. Dr. Shafii has been a co-investigator on numerous seminal clinical trials involving the most current technology in left ventricular assist devices (LVADs), both for use as a bridge-to-transplant as well as destination therapy. Currently, Dr. Shafii is Baylor's principle investigator on a multi-center study evaluating the Evaheart Centrifugal LVAS.



# Congenital Heart Surgery

The division maintains an active research program across a broad spectrum. The division focuses specifically on congenital heart surgical outcomes and quality, pediatric heart and lung transplantation, mechanical circulatory support, aortic reconstruction, surgical repair of congenital coronary anomalies, and, in collaboration with Rice University, pediatric bioengineering.





Iki Adachi, MD Assistant Professor of Surgery Congenital Heart Surgery Baylor College of Medicine



#### Keywords

- Congenital Cardiac Surgery
- Nanotechnology in Cardiovascular diseases
- Aortic Surgery

#### **Contact Information**

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# Keywords

- Pediatric heart failure
- Mechanical circulatory support
- Myocardial recovery in children

#### **Contact Information**

Texas Children's Hospital Congenital Heart Surgery 6621 Fannin St., 20th Floor Houston, Texas 77030



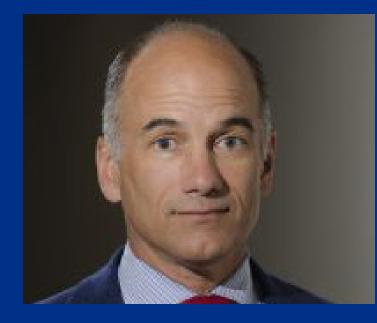




#### Ziyad Binsalamah, MD, MSc

Instructor in Surgery Congenital Heart Surgery Baylor College of Medicine

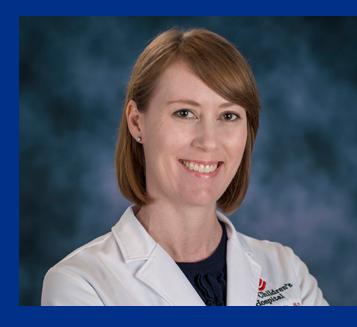




#### **Christopher Caldarone, MD**

Professor and Chief Congenital Heart Surgery Baylor College of Medicine

Chief, Congenital Heart Surgery Texas Children's Hospital



#### **Contact Information**

Texas Children's Hospital Room: TXCH-1900 Houston, TX 77030 Phone: (832) 826-2030

#### **Research Interests**

Dr. Caldarone's research interests include the role of apoptosis related mitochondrial dysfunction and remote ischemic preconditioning as mediators of reperfusion injury. Most recently, Dr. Caldarone has focused on pulmonary vein stenosis and tissue engineering of pulmonary valves.

#### Keywords

- Congenital heart surgery
- Pediatric congenital heart disease
- Research education

#### **Contact Information**

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#### Lauren Goldie, PhD, CCRP

Assistant Professor and Director, Clinical Research Congenital Heart Surgery Baylor College of Medicine





#### **Contact Information**

Texas Children's Hospital Congenital Heart Surgery 6621 Fannin St., WT19345H Phone: 832-826-1929 Fax: 832-825-1905 Email: jsheinle@texaschildrens.org **Jeffrey Heinle, MD** Associate Professor of Surgery Congenital Heart Surgery Baylor College of Medicine

Associate Chief, Congenital Heart Surgery Surgical Director, Heart and Lung Transplant Brad and Melissa Juneau Endowed Chair in Congenital Heart Surgery Texas Children's Hospital



# **Contact Information**

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68



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#### **Edward John Hickey, MD** Associate Professor of Surgery Congenital Heart Surgery Baylor College of Medicine

Surgical Director, Adult Congenital Heart Disease Program Texas Children's Heart Center





#### Michiaki Imamura, MD, PhD

Professor of Surgery Congenital Heart Surgery Baylor College of Medicine



#### **Contact Information**

Texas Children's West Tower 6621 Fannin Street 20th Floor Mail Stop: BCM390 Houston, Texas 77030 (832) 826-2030

#### **Research Interests**

Dr. Imamura's academic interests include clinical outcomes research and physiology/ anatomy of congenital heart defects. Other academic interests include complex heart failure management, ventricular assist device implantation, and cardiothoracic and congenital surgical education.

#### **Contact Information**

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**E. Dean McKenzie, MD** Professor of Surgery Congenital Heart Surgery Associate Director, Congenital Heart Surgery Fellowship Program Baylor College of Medicine

Associate Surgeon, Congenital Heart Surgery Texas Children's Hospital

#### **Research Interests**

Dr. McKenzie's research centers on neurologic protection during cardiopulmonary bypass and the advancement of surgical and perfusion techniques to eliminate the use of deep hypothermic circulatory arrest (DHCA) during aortic reconstruction. He has extensive experience with and has developed innovative surgical techniques for repair of the aortic arch, including the ascending sliding arch aortoplasty.





Lalita Wadhwa, PhD Assistant Professor of Surgery Congenital Heart Surgery Baylor College of Medicine

# Keywords

- Tissue banking
- Congenital heart defect genomicsPediatric developmental disorders

### **Contact Information**

Texas Children's Hospital Room: C450.09 Feigin Mail Stop: BCM390 Houston, Texas 77030





# General Thoracic Surgery

The Division of General Thoracic Surgery performs innovative translational research, in the clinic and in the laboratory, united by an overarching objective to improve the care of our patients. We offer an array of clinical trials that include investigator-initiated studies and collaborative multi-center national trials. The Thoracic Surgery Research Laboratory is National Institutes of Health-funded and investigates mechanisms of response to immunotherapy and mechanisms of carcinogenesis in thoracic cancers.





**Bryan Burt, MD** Professor and Chief, General Thoracic Surgery Director, General Thoracic Surgery Research Baylor College of Medicine



### Keywords

- Tumor immunology
- Non-small cell lung cancer
- Malignant pleural mesothelioma

#### **Contact Information**

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### **Research Interests**

Dr. Burt's research efforts concentrate on immunologic determinants of pleural mesothelioma and non-small cell lung cancer; he is currently focusing efforts on novel therapeutic intraoperative treatments of pleural mesothelioma.

### Keywords

- Thoracic Surgery
- Outcome Assessment (Health Care)
- Translational Medical Research

### **Contact Information**

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**Shawn Groth, MD** Associate Professor and Associate Chief General Thoracic Surgery

Director, Esophageal Surgical Services Baylor St. Luke's Medical Center

#### **Research Interests**

Dr. Groth's clinical research focuses on thoracic oncology outcomes research, health care disparities research, and clinical trials. He has explored several topics directed towards improving the guideline treatment of cancer patients. His basic science and translational research efforts are directed towards advancing personalized oncology.



77



Hyun-Sung Lee, MD, PhD

Assistant Professor of Surgery **General Thoracic Surgery** Director, Systems Onco-Immunology Lab **Baylor College of Medicine** 



## **Keywords**

- Systems Immunology
- CyTOF
- Imaging Mass Cytometry (IMC)
- Malignant pleural mesothelioma
- Lung cancer
- Esophageal cancer
- Thymic epithelial tumors

# **Contact Information**

Alkek Building for Biomedical Research Houston, Texas 77030



## **Research** Interests

the Systems Onco-Immunology In Laboratory (SOIL) Dr. Hyun-Sung Lee uses and develops innovative methods within the context of multi-omics technologies to investigate cancer-immune system networks and inform the design of novel approaches to immunotherapy.

The lab is a hub for translational oncology research projects in thoracic oncology and unites an interdisciplinary team of surgeons, medical oncologists, immunologists, and bioinformaticians who are conducting research in the field of onco-immunology. Our work extends to encompass a broader interaction with the scientific community and educational opportunities in systems onco-immunology.

# **Keywords**

- BH3 profiling
- Metabolomics
- Thoracic oncology

# Contact Information

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**R. Taylor Ripley, MD** Associate Professor of Surgery General Thoracic Surgery **Baylor College of Medicine** 

Director, Mesothelioma **Treatment Center** Baylor St. Luke's Medical Center

#### **Research Interests**

Dr. Ripley was an associate professor of surgery in the Thoracic and Oncologic Surgery Branch of the National Cancer Institute (NCI). While at the NIH, Dr. Ripley was awarded the NCI Director's Innovation Award for targeting specific p53mutations for the treatment of esophageal adenocarcinoma. He established the Foregut Team at the NIH Clinical Center for the management of patients with esophageal cancer. Additionally, he has been developing a novel assessment of thoracic cancers by profiling mitochondrial pathways, which he will continue with us.

Dr. Ripley has lectured nationally and published extensively on his work in the field of thoracic oncology and tumor metabolism. Prior to his faculty appointment at the NCI, Dr. Ripley trained extensively in the care of patients with mesothelioma under worldrenowned surgeons during his fellowship at Memorial Sloan-Kettering Cancer Center in New York.

# Metabolic and Bariatric Surgery

The dramatic health-improving effects of weight loss and metabolic surgery have resulted in an explosion of research endeavors that aim to better understand the molecular mechanisms of metabolic dysfunction.

Our division is heavily engaged in conducting such research, particularly in optimizing the outcomes of medical and surgical treatment of obesity, investigating new devices which may result in ever-decreasing invasive techniques, and achieving a better understanding of how metabolic surgery can improve the clinical outcomes of patients who proceed to other types of surgery, such as joint replacement and organ transplant operations.

The research opportunities offered by Baylor and our colleagues in the Texas Medical Center represent a collaborative system that is unrivaled in its potential to advance this field of medicine and reap enduring rewards for our patients.





### Juliet Holder-Haynes, MD, MBA, MS

Associate Professor of Surgery Metabolic and Bariatric Surgery Baylor College of Medicine



# **Contact Information**

Weight Loss and Metabolic Center 1977 Butler Blvd Houston, Texas 77030

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## Keywords

- Adult and adolescent obesity
- Gastroparesis
- Reflux
- Revision Bariatric Surgery

## **Contact Information**

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**S. Julie-Ann Lloyd, MD, PhD** Assistant Professor of Surgery Metabolic and Bariatric Surgery Baylor College of Medicine

### **Research Interests**

Dr. Lloyd is a dedicated researcher and educator. Her research interests include understanding the pathophysiology of obesity and improving patient outcomes through optimization of perioperative care.





**Samer G. Mattar, MD** Professor of Surgery and Chief Metabolic and Bariatric Surgery Baylor College of Medicine

### Keywords

- Metabolic surgery
- Clinical outcomes
- Radiofrequency energy
- Cryotherapy

#### **Contact Information**

Weight Loss and Metabolic Center 1977 Butler Blvd Houston, Texas 77030

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### **Research Interests**

Dr. Mattar is a diplomate of the American Board of Obesity Medicine. Formerly, he was Professor of Surgery at Oregon Health & Science University and Professor of Surgery at Indiana University. He is also Past-President of the American Society of Metabolic and Bariatric Surgeons and the current President of the Fellowship Council. His practice is almost entirely bariatric in nature and his main clinical interests are in the area of standardizing pathways and optimizing patient outcomes. He also has an interest in the surgical and endoscopic treatment of acid reflux disease.

Dr. Mattar has developed comprehensive bariatric and metabolic programs with an emphasis on modern, high quality and compassionate care that squarely places the patient at the center. He has published numerous articles and book chapters in the field and he enjoys teaching and advocating for his patients.

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# **Pediatric Surgery**

Our groundbreaking and life-saving research initiatives are supported by the National Institutes of Health (NIH), private foundations, Texas Children's and Baylor College of Medicine. Dr. Sundeep Keswani, surgical director of Basic Science Research at Texas Children's, has recently established the division's core laboratory, which functions as a basic science and translational research center for faculty investigators.





**Swathi Balaji, PhD** Assistant Professor of Surgery Pediatric Surgery Baylor College of Medicine



### Keywords

- Mechanical tension
- Murine models
- Skin and lung fibrosis
- Endothelial and endothelial progenitor cells

### **Contact Information**

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### **Research Interests**

Dr. Balaji's research interests are to understand the underlying mechanisms of how the fetus heals cutaneous wounds without scar and translate the findings to achieve postnatal regenerative tissue repair in various organ systems. Dr. Balaji received her doctoral degree in bioengineering from University of Cincinnati and did her postdoctoral training in the Department of Pediatric Surgery at Cincinnati Children's Hospital Medical Center.

### Keywords

- Fetal Diagnosis and Therapy
- Wound Healing
- Regenerative Medicine

## **Contact Information**

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**Sundeep Keswani, MD** Professor and Chief Pediatric Surgery Baylor College of Medicine

Clayton Endowed Chair in Surgical Research Director of Basic Science Research Texas Children's Hospital

#### **Research Interests**

Dr. Keswani is a member of the pediatric surgery and fetal surgery team at Texas Children's Hospital and the principal investigator for the Texas Children's Laboratory for Regenerative Tissue Repair. Dr. Keswani completed his adult general surgery training at Louisiana State University in his hometown of New Orleans and completed his pediatric surgery fellowship at St. Louis Children's Hospital and the Washington University School of Medicine. He also completed a research fellowship and fetal surgery fellowship at the Children's Hospital of Philadelphia. Prior to coming to Texas Children's, Dr. Keswani was an attending surgeon at Cincinnati Children's Hospital.

Dr. Keswani's clinical interests are in fetal diagnosis and therapy, neonatal surgery, congenital diaphragmatic hernia, ECMO and pediatric wound care. His NIH-funded laboratory studies the molecular mechanisms of regenerative fetal tissue repair and is actively developing novel therapeutics to achieve postnatal regenerative wound healing.



Alice King, MD Assistant Professor of Surgery Pediatric Surgery Baylor College of Medicine



### **Contact Information**

Mark Wallace Tower 6701 Fannin Street 8th Floor Clinic Houston, Texas 77030

### **Research Interests**

Prior to joining the fetal surgery team, Dr. King has done extensive research background in fetal regenerative wound healing. Her current research interests include fetal surgery to help treat life-threatening congenital abnormalities and to correct problems that would be too advance to correct after the baby is born.

### Keywords

- Pediatric Surgery
- Pediatric trauma

### **Contact Information**

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#### **Louis Le, MD** Assistant Professor of Surgery Pediatric Surgery Baylor College of Medicine





**Timothy C. Lee, MD** Professor of Surgery Pediatric Surgery Baylor College of Medicine

Surgical Director, ECMO Texas Children's Hospital



### Keywords

- ECMO
- Congenital diaphragmatic hernia
- Gastroschisis
- Colorectal surgery

### **Contact Information**

Texas Children's Hospital 6701 Fannin St. Suite 1210 832 822-3135 timlee@bcm.edu

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### **Research Interests**

Dr. Lee's primary focus is on improving clinical care and deriving protocol-driven patient care initiatives in the surgical neonatal ICU and within the Texas Children's Fetal Center and in the colorectal and pelvic health clinic at Texas Children's Hospital. Currently he is a collaborator in a randomized control trial on the benefit of early delivery of gastroschisis patients. Other areas of research interest include patients with congenital diaphragmatic hernia and the use of extracorporeal life support. Dr. Lee is pursuing a Masters in Clinical Research to develop expertise in management and initiation of clinical trials within the neonatal ICU and within the fetal center patient populations.

# Keywords

- Minimally-invasive pectus excavatum repair
- Minimally-invasive/robotic pediatric surgery
- Choledochal cyst laparoscopic excision

## **Contact Information**

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Mark V. Mazziotti, MD Professor of Surgery Pediatric Surgery Program Director, Pediatric Surgery Residency Program Baylor College of Medicine

## **Research Interests**

Dr. Mazziotti's current focus is on the clinical practice of pediatric surgery in an educational setting. He has special interest and training in minimally invasive surgery, including thoracoscopic pectus excavatum repair. He has devised a novel technique for the minimally-invasive repair of pectus carinatum using conventional Nuss equipment with modifications. He has studied how various stabilization techniques have improved outcomes in pectus excavatum patients.

Dr. Mazziotti's research interests are in clinical outcomes. He has interest in clinical outcomes for patients with biliary dyskinesia treated with laparoscopic cholecystectomy compared to patients with gallstones treated in the same fashion. He also has ongoing projects evaluating clinical outcomes in patients with perforated appendicitis, spontaneous pneumothorax, and in patients with ITP undergoing laparoscopic splenectomy.



Allen L. Milewicz, MD Associate Professor of Surgery Pediatric Surgery Baylor College of Medicine

Chief Surgical Officer, West Campus Texas Children's Hospital Vice Chair of Business Operations Texas Children's Hospital



### **Contact Information**

6701 Fannin St. Suite 1210 Texas Children's Hospital Phone: 832 822-3135 milewicz@bcm.edu

#### **Research Interests**

Dr. Milewicz has extensive experience and expertise in the spectrum of pediatric surgery. He has specialized research training in liver transplant and cardiac surgery. Dr. Milewicz's current focus is on the clinical practice of pediatric surgery in an educational setting.

# **Contact Information**

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#### **Paul Kim Minifee, MD** Professor of Surgery Pediatric Surgery Baylor College of Medicine

#### **Research Interests**

Dr. Minifee, primarily a clinical pediatric surgeon, has a commitment to education. He routinely provides high school and medical school mentorship through programs such as the High School Mentorship Program at Texas Children's Hospital, the Honors Premedical Academy, and the Longitudinal Ambulatory Clinical Experience (LACE) course at Baylor College of Medicine. Dr. Minifee combines education and technology as he mentors Baylor residents and medical students on clinical rotations in pediatric surgery.



#### **Bindi Naik-Mathuria, MD**

Associate Professor of Surgery and Pediatrics Pediatric Surgery Baylor College of Medicine

Trauma Medical Director Texas Children's Hospital



### Keywords

- Pediatric trauma and injury prevention
- Pediatric surgical oncology
- Outcomes following pediatric surgery
- Global pediatric surgery

### **Contact Information**

6701 Fannin St. Suite 1210 Texas Children's Hospital Phone: 832 822-3135 Email: bnaik@bcm.edu

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### **Research Interests**

Dr. Naik-Mathuria's research interest is primarily in pediatric trauma and finding ways to improve trauma care of children through prospective multi center studies, national database reviews, and system-based quality improvement. She is also interested in injury prevention, particularly firearm safety for children. Additionally, she performs outcomes studies on a variety of pediatric surgical problems, as well as solutions for global pediatric surgery. Residents who join our team would have a broad-based experience in clinical research. Obtaining a degree in public health concurrently with the research time would be an ideal complement, but is not a requirement.

### Keywords

- Neuroblastoma in infants
- Tumor progression
- Cancer target discovery

### Contact Information

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Jed G. Nuchtern, MD Professor of Surgery Pediatric Surgery Chief, Global Surgery Baylor College of Medicine

#### **Research Interests**

Dr. Nuchtern leads a collaborative research program that includes translational and clinical research on developing new treatments for pediatric solid tumors, particularly neuroblastoma. The primary focus in the laboratory is identifying new targets for neuroblastoma therapy. Bioinformatic studies have identified several proteins whose expression is increased in high risk neuroblastoma tumors; the laboratory has validated these findings and demonstrated that blocking expression of these targets decreases tumor growth and progression. Current research is directed toward identifying the pathways through which these molecules affect tumor progression. In addition to these translational studies, Dr. Nuchtern is involved in clinical research on neuroblastoma in infants. Through the Children's Oncology Group, he designed and implemented a prospective international study investigating the safety and efficacy of expectant observation as the primary treatment modality for infants with low risk adrenal tumors.

97



**Kristy Rialon, MD** Assistant Professor of Surgery Pediatric Surgery Baylor College of Medicine



### Keywords

- Vascular anomalies
- Graduate medical education
- Surgical oncology

### **Contact Information**

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# Scan for Publications



### **Research Interests**

During her residency, Dr. Rialon was awarded a research grant from the National Institutes of Health to study pancreatic cancer. She also subsequently completed a research fellowship in Vascular Anomalies at Boston Children's Hospital.

## **Contact Information**

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#### **Ruben Rodriguez, MD, MMSc** Assistant Professor of Surgery Pediatric Surgery Baylor College of Medicine

### **Research Interests**

Dr. José Ruben Rodríguez is a general pediatric surgeon whose research interests include improving outcomes and quality of care for pediatric trauma patients, and clinical trials to improve outcomes following general pediatric surgical operations.





**Sohail Shah, MD, MSHA** Associate Professor of Surgery and Pediatrics Baylor College of Medicine

Chief Surgical Officer, West Campus Texas Children's Hospital



### Keywords

- Pediatric surgery outcomes
- Patient-centered outcomes
- Healthcare delivery

### **Contact Information**

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### **Research Interests**

Dr. Shah's research interests focus on enhancing pediatric surgical outcomes, healthcare delivery, improving and evidence-based practice establishing guidelines. He has authored numerous peerreviewed articles, written book chapters, and given dozens of presentations to national and international audiences on a full range of pediatric surgery topics. He is currently a candidate for a Master of Science in Clinical Research from the University of Kansas Medical Center.

## **Contact Information**

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#### **Yan Shi, MD** Assistant Professor of Surgery Baylor College of Medicine

### **Research Interests**

Dr. Yan Shi earned his undergraduate degree in cell biology and molecular genetics from the University of Maryland in College Park. He went on to complete a medical degree from the University of Arkansas for Medical Sciences followed by a residency in general surgery at Baylor College of Medicine. During his residency, he completed a fellowship in pediatric surgical oncology research at Baylor College of Medicine and Texas Children's Hospital. After his residency training, Dr. Shi completed a fellowship in pediatric surgery at Cohen Children's Medical Center/Northwell Health in Hyde Park, New York.

An avid researcher, Dr. Shi has written several academic papers on topics relating to pediatric malignant tumors, oncology surgery and treatment of solid pediatric tumors. He has also published several noteworthy studies related to the treatment of malignant tumors in children.



### **Shawn Stafford, MD** Assistant Professor of Surgery Pediatric Surgery Baylor College of Medicine

Associate Chief of Surgery Surgical Director, Adolescent Bariatric Surgery Surgical Lead for Quality Surgical Lead for Simulation Texas Children's Hospital The Woodlands



### Keywords

- Minimally invasive surgery
- Congenital anomalies

### **Contact Information**

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# Scan for Publications



# Research Interests

During his time at LSU he was involved in research looking at angiogenesis and its impact on malignancy and wound healing. Additionally, he was instrumental in the development of a novel injectable for sentinel lymph node dissection.

### Keywords

- Pediatric surgical oncology
- Neuroblastoma
- Pediatric liver cancer

## **Contact Information**

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#### **Sanjeev A. Vasudevan, MD** Associate Professor of Surgery Pediatric Surgery Baylor College of Medicine

#### **Research Interests**

Dr. Vasudevan's laboratory focuses on validation of potential therapeutic targets found in pediatric solid tumors and cancer, in particular neuroblastoma and hepatoblastoma. During his postdoctoral training in the Texas Children's Cancer Center with Drs. Jed G. Nuchtern and Jianhua Yang, Dr. Vasudevan cloned two novel genes, NDSP and DUSP26, which were found to be specifically expressed in neuroblastoma and play critical roles in neuroblastoma tumor growth and chemosensitivity. Dr. Vasudevan is furthering this work as a prinicipal investigator by focusing on the function and regulation of the p53 pathway in both neuroblastoma and hepatoblastoma. He is also helping to develop patient derived xenografts for these tumors in order to better study the biology and develop patientspecific therapies. Dr. Vasudevan's lab hopes to validate multiple targets in order to find novel and less toxic therapeutic agents to improve outcomes in neuroblastoma and hepatoblastoma.



Adam Vogel, MD Associate Professor of Surgery Pediatric Surgery Baylor College of Medicine



### Keywords

- Goal directed hemostatic resuscitation
- Pediatric trauma
- Extracorporeal life support

### **Contact Information**

6701 Fannin St. Suite 1210 Texas Children's Hospital Phone: 832 822-3135

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### **Research Interests**

Dr. Vogel's research focuses on improving clinical outcomes in critically ill children. He investigates the use of viscoelastic monitoring techniques in goal-directed hemostatic resuscitation and massive transfusion to improve outcomes in severely injured patients. His research focuses on the impact of nutritional adequacy on outcomes and techniques for optimizing systemic anticoagulation and mechanical ventilation during ECLS. Dr. Vogelis an active participant in several multicenter collaborative research networks whose goal is to improve the care and outcomes of pediatric surgical patients.

### Keywords

• Pediatric liver cancer

### **Contact Information**

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#### **Sarah Woodfield, PhD** Assistant Professor of Surgery Pediatric Surgery Baylor College of Medicine

#### **Research Interests**

Dr. Woodfield began as a postdoctoral trainee in the Pediatric Surgical Oncology Laboratory under the mentorship of Dr. Sanjeev A. Vasudevan, associate professor in the Division of Pediatric Surgery. Dr. Woodfield stayed in the PSOL as a coprincipal investigator with Dr. Vasudevan and was a previous recipient of the Michael E. DeBakey Department of Surgery Seed Grant and the Clayton Award from the Texas Children's Department of Surgery. Her work on pediatric liver cancer CTCs was philanthropically funded this past year by the Owls for Avery Foundation, now resulting in federal funding for this important work.



# Pediatric Plastic Surgery

Cleft palate repair has been an established surgical procedure for over 50 years, faculty are implementing newly developed technology to bring this highly impactful procedure to children in low-resource communities around the world. As chairman of the medical board for Smile Train, Dr. Larry Hollier helps to oversee more than 2000 surgeons in 85 different countries, ensuring that cleft care is not only sustainable and scalable, but also of the highest quality. Under his leadership, Smile Train is pioneering the use of highly effective computerized simulation training, accelerating the number of qualified surgeons and support staff able to provide surgical cleft care safely. Newly integrated web-based platforms are enabling oversight of remote surgeries, providing evidence for effective and safe outcomes.

With refinement and value creation in craniofacial surgery as a focused priority among department faculty, our faculty are improving the care of patients with facial injuries and congenital impairments. Better treatments for mandibular fractures is one focus of the division, including studies evaluating the biologic response to resorbable plate and screw fixation, which enables realignment and stabilization while sidestepping future issues related to longterm metal implant complications.





#### **Edward Buchanan, MD** Professor and Chief, Pediatric Plastic Surgery Baylor College of Medicine

Melvin Spira Endowed Professor in Plastic Surgery Chief, Plastic Surgery Texas Children's Hospital

### Keywords

- Cleft Lip and Palate
- Craniosynostosis
- Craniofacial syndromes
- Microtia Reconstruction
- Craniofacial Oncologic Reconstruction

### **Contact Information**

Texas Children's Hospital Wallace Tower 6621 Fannin Street, Suite 610.00 Mail Stop: BCM340 Houston, Texas 77030

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### **Research Interests**

Dr. Buchanan's primary research interest is in the evaluation and analysis of surgical outcomes in patients treated for cleft and craniofacial conditions. These patients suffer from specific anatomical malformations that need to be addressed at specific time points with specialized procedures. The success of these interventions is important for long-term health and quality of life. Dr. Buchanan's research focuses on understanding the best timing and types of operations for patients with cleft and craniofacial related issues.

As the head of the Cleft and Craniofacial Center at Texas Children's Hospital, I take a specific interest in patient centered outcomes. One of my primary goals is to ensure that our patients receive the world's best treatment. In order for me to do this, I must understand how the treatment experience affects them during every stage of their care. By thoroughly understanding the patient experience, their expectations, satisfactions and quality of life, our craniofacial team can truly take care of the whole patient. By studying patient centered outcomes, health care delivery can become more efficient and effective.





#### **Larry H. Hollier Jr, MD** Professor of Surgery Pediatric Plastic Surgery Baylor College of Medicine

S. Baron Hardy Chair in Plastic Surgery Surgeon-in-Chief Texas Children's Hospital

### Keywords

- Reconstructive pediatric surgery
- Facial trauma
- Distraction osteogenesis

## **Contact Information**

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### **Research Interests**

Dr. Hollier has a broad background in craniofacial reconstruction procedures. As the chief of the largest group of full-time, academic craniofacial surgeons in the United States, he believes he has an opportunity to substantially contribute to this subject.

He has undertaken an enormous research effort focused on quantifying outcomes in craniofacial surgery. He and other senior researchers in the department are currently applying for a new NIH funded project, which will allow them to take that effort to the next level by stratifying craniosynostosis patients according to their unique genetic background. By accurately defining the true underlying genetic causes, procedures can be custom tailored for each patient and patients can be properly educated regarding their expected course of treatment. Dr. Hollier feels that this is something that has been sorely lacking in plastic surgery. For too long, plastic surgery has been a specialty where outcomes are deemed acceptable so long as the patient and their family are happy. He believes plastic surgery should be elevated to the next level of scientific scrutiny, and is dedicated to leading the endeavor.





**Renata Maricevich, PhD** 

Associate Professor of Surgery Pediatric Plastic Surgery Director, Plastic Surgery Integrated Residency Program Baylor College of Medicine



### Keywords

- Cleft lip and palate
- Pierre Robin Sequence
- DiGeorge Syndrome
- Craniosynostosis
- Vascular Anomalies
- Breast Surgery

# **Contact Information**

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# **Research Interests**

Dr. Maricevich's current research interests are in Morphology in Cleft, Pierre Robin Sequence and Craniosynostosis patients, speech outcomes on DiGeorge population, outcomes on Pediatric Breast Surgery as well as challenges in Vascular Anomalies.

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# Keywords

- Clinical outcomes
- Quality of life
- Cleft lip and palate

# **Contact Information**

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**Laura Monson, MD** Assistant Professor of Surgery Pediatric Plastic Surgery Baylor College of Medicine

Chief Quality Officer for Surgery Texas Children's Hospital

### **Research Interests**

Dr. Monson's current research focus is on investigating the clinical outcomes of our pediatric plastic and craniofacial patients, especially our cleft patients from infancy through adulthood.





**Shola Olorunnipa, MD** Assistant Professor of Surgery Pediatric Plastic Surgery Baylor College of Medicine



### Keywords

- 3DMD
- Cleft
- Telemedicine

### **Contact Information**

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### **Research Interests**

Dr. Olorunnipa received his undergraduate degree at Harvard University before obtaining his medical degree at Stanford University School of Medicine. He then entered the combined Plastic Surgery Residency at New York Presbyterian/Columbia and New York Presbyterian/ Weill Cornell Medical Centers in New York City. After residency, he completed additional fellowship training in craniofacial and pediatric plastic surgery at Baylor College of Medicine/Texas Children's Hospital in Houston.

### Keywords

- Craniofacial development
- Pre-surgical infant orthopedics
- Cleft lip and palate orthodontics

### **Contact Information**

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#### John Wirthlin, DDS, MSD Associate Professor of Surgery Pediatric Plastic Surgery Baylor College of Medicine



# Surgical Oncology

Division researchers, in collaboration with the Dan L Duncan Comprehensive Cancer Center, specialize in translational research designed to move laboratory discoveries into the clinic to better diagnose, treat, and care for our patients. These research approaches include tissue and biomarker studies to learn more about the molecular processes that drive various diseases, development of new diagnostic devices and surgical techniques, and clinical trials for pharmaceutics and cancer immunotherapies. Our breast surgeons are investigating management of pre-cancers of the breast and how to minimize surgery with the same outcomes by helping lead multicenter efforts to study both the development and the best method to treat ductal carcinoma in situ, a condition that can develop into breast cancer.

The pancreatic clinical research program has recently lead two NIH-funded investigatorinitiated multicenter randomized clinical trials that generated practice-changing impact on the use of drains during pancreatectomy, and the subsequent development of a multicenter pancreatic surgery outcomes consortium. Our pancreas center is also a leader in correlative studies to improve diagnosis and management of CP and pancreas cancer. Our basic science lab has studied the influence of gastrointestinal hormones on pancreatic cancer growth, the relationship between diabetes and pancreatic cancer, and genomic analysis of pancreatic cancer, resulting in hundreds of recent peerreviewed publications.







Ghanashyam Acharya, PhD

Associate Professor of Surgery and Ophthalmology Surgial Oncology Baylor College of Medicine



### Keywords

- Translational Nanomedicine
- Nanofabricated Drug Delivery Systems
- Ocular Drug Delivery
- Ocular Nanomedicine

#### **Contact Information**

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### **Research Interests**

Dr. Acharya's research program focuses on the development of translational nanomedicine by integrating nanofabrication, 3D-nanolithography, and controlled drug delivery strategies. He works at the interface of medicine, bioengineering, chemistry and pharmaceutics. He is currently working on developing controlled release nanowafer therapeutics, nanodrug delivery systems for wound healing and pain management, and theranostics for image-guided drug delivery. Dr. Acharya's research program is funded by NIH, CPRIT, and Alkek award for the Development of Experimental Therapeutics.

# **Contact Information**

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#### Samir S. Awad, MD, MPH

Professor of Surgery Vice Chair for Surgical Quality and Safety Baylor College of Medicine

Operative Care Line Executive and Chief of Surgery Michael E. DeBakey VA Medical Center

#### **Research Interests**

Dr. Awad's research interests include investigating sepsis, decreasing surgical site infections, quality outcomes in robotic surgery, as well as investigating intraabdominal and mesh infections.

Dr. Awad has authored more than 100 peerreviewed and invited publications, and is the recipient of numerous awards for surgical and research achievements. Dr. Awad is certified by the American Board of Surgery and Surgical Critical Care.



**Omar Barakat, MD** Associate Professor of Surgery Surgical Oncology Baylor College of Medicine

Medical Director, Neuroendocrine Tumor Program Baylor St. Luke's Medical Center

### Keywords

- Neuroendocrine tumors
- Artificial liver

### **Contact Information**

The Elkins Pancreas Center Dan L Duncan Comprehensive Cancer Center 7200 Cambridge St, 7th floor Houston, Texas 77030

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### **Research Interests**

Dr. Barakat has developed new surgical techniques to minimize the complication rate and blood loss following pancreatic and liver surgeries. He utilizes imageguided therapies, such as radiofrequency ablation, microwave ablation, irreversible electroporation (Nanoknife system), transarterial chemotherapy, and selective internal radiotherapy (SIRT) with Yttrium-90 microspheres, to treat liver tumors while minimizing trauma to the patients.

Dr. Barakat's clinical and basic science research interests also include the study of neuroendocrine tumors and the development of off-the-shelf bio-artificial liver organs that can be suitable for liver transplantation in patients with end-stage liver disease.

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**E. Ramsay Camp, MD** Professor and Chief, Surgical Oncology Olga Keith Wiess Chair of Surgery Baylor College of Medicine

#### **Research Interests**

Dr. Camp leads an active externally funded research laboratory supported by a VA Merit Award with a focus on mechanisms of chemotherapy and radiation resistance in pancreatic and colorectal cancer. In addition, the research program is supported by an industry award from Merck to investigate a novel chemo-immunotherapy strategy for pancreatic cancer. His translational research program is focused on three overlapping concepts including: 1) Understanding the role of sphingolipid dysregulation in mediating therapy resistance for colorectal cancer; 2) Development of humanized mouse pancreatic ductal adenocarcinoma (PDAC) model to explore novel immunotherapy; and 3) Investigating ways to enhance anti-tumoral immunity for pancreatic cancer by manipulating the tumor microenvironment. His team employs a wide range of standard and advanced techniques including flow cytometry, cancer stem cell isolation and analysis, patient derived tumor organoid (PDTO) and organoid biobank establishment, Patient derived xenografts (PDX), human Tumor infiltrating lymphocyte (TIL) culture, TIL mediated immunotherapy and humanized mouse models of rectal and pancreatic cancer.

### Keywords

- Pancreatic cancer
- Colorectal cancer
- Immunotherapy
- Chemotherapy resistance

### **Contact Information**

Dan L Duncan Comprehensive Cancer Center 7200 Cambridge Street Houston, TX 77030





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**Stacey Ann Carter, MD** Assistant Professor of Surgery Surgical Oncology Baylor College of Medicine

### Keywords

- Clinical outcomes in breast cancer
- Oncoplastic surgery
- Pre-menopausal breast cancer
- Geriatric breast cancer

### **Contact Information**

Dan L Duncan Comprehensive Cancer Center 7200 Cambridge St, 7th floor Houston, Texas 77030



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### Keywords

- Quality improvement
- Psychoneuroimmunology
- Preoperative optimization of cancer patients

### **Contact Information**

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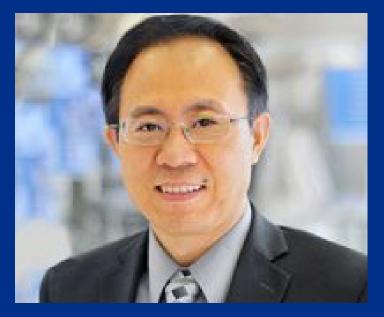
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#### **Christy Yoon-Hee Chai, MD** Associate Professor of Surgery Surgical Oncology Baylor College of Medicine

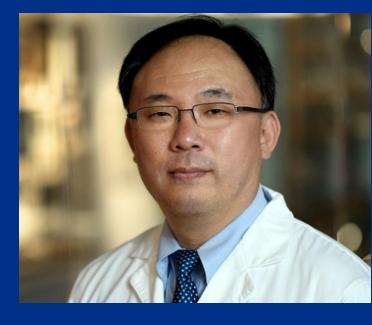
Chief, Section of General Surgery and Surgical Oncology Michael E. DeBakey VA Medical Center

Dr. Christy Chai is a board-certified general surgeon with advanced training in Surgical Oncology and is a fellow of American College of Surgeons. She earned her B.A in Physics and Biology from Washington University in St. Louis where she received Howard Hughes Research Scholarship and graduated with Magna Cum Laude. She continued on her education at Loma Linda University School of Medicine in California. She completed her general surgery residency at Baylor College of Medicine in Houston, TX and surgical oncology fellowship at Moffitt Cancer Center in Tampa, FL. Dr. Chai also served in the US Air Force providing cares to military service members, their dependents and veterans as a faculty at San Antonio Military Medical Center, TX. Since she separated from military service, she continues to serve our veterans at Michael E. DeBakey Veteran Affairs Medical Center as a section chief for the general surgery & surgical oncology.



Changyi Chen, MD, PhD

Professor of Surgery Surgical Oncology Director, Basic Science and Translational Labs Baylor College of Medicine



### Keywords

- Pancreatic cancer
- Hyperuricemia and uric acid-lowering drugs
- LGA-PEI based nanotechnology
- ACE2 inhibitors and drug discoverie

## **Contact Information**

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### **Research Interests**

Dr. Chen's laboratory is actively conducting several basic science and translational research projects that are highly relevant to clinical cardiovascular disease and pancreatic cancer. Cardiovascular risk factors and their molecular mechanisms in cardiovascular disease:

We are investigating the effects and the molecular mechanisms of several cardiovascular risk factors, including HIV protease inhibitors, the adipokine resistin, soluble CD40L, and uric acid, on biochemical pathways associated with endothelial cell functions. Some of the biochemical pathways under investigation are the endothelial nitric oxide synthase system, the oxidative stress system, and signal transduction pathways. We are carrying on these investigations using several experimental models, such as myographies, organ cultures, mouse models, human tissue samples, and different types of endothelial cells. Based on the molecular mechanisms we uncover, we develop effective therapeutic strategies to treat endothelial dysfunction and atherosclerosis.

## Keywords

- Metastasis
- Cell Signaling
- Gastrointestinal Cancers
- Soft tissue sarcoma
- GIST
- Melanoma

# **Contact Information**

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### **Research Interests**

Dr. Choi's research interests include the signaling mechanisms of GI cancer and soft tissue sarcoma metastasis and development of novel drug therapies for peritoneal malignancies.





#### Livia Schiavinato Eberlin, PhD

Surgical Oncology Director, Translational and Innovations Research Baylor College of Medicine

### Keywords

- Mass spectrometry
- Cancer diagnosis
- Medical devices

### **Contact Information**

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Dr. Eberlin and her research team are the recipients of many honors and awards for their scientific research, including a NIH/ NCI K99/R00 Pathway to Independence Award, a Forbes 30 under 30 listing in the Healthcare category, a Moore Inventor Fellowship, and a MacArthur Fellowship in 2018. Her research group is funded by grants from the NIH, CPRIT and other research foundations. Additionally, Dr. Eberlin has published more than 80 peer-reviewed research articles in top-rated journals such as *PNAS*, *Science Translational Medicine*, *Nature Communications*, *Cancer Research*, and *Clinical Chemistry*.

Dr. Eberlin's research program centers around the development and application of novel mass spectrometry technologies in health-related research, with a particular focus on disease detection and diagnosis to improve patient care and clinical outcomes.



### William E. Fisher, MD Professor and Vice-Chair for Clinical Affairs

Department of Surgery Director, Elkins Pancreas Center George L. Jordan, M.D. Chair in General Surgery Baylor College of Medicine

Vice President, Medical Staff Baylor St. Luke's Medical Center

# Keywords

- Pancreatic cancer
- Gene sequencing
- Clinical trials/outcomes/quality

# **Contact Information**

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### **Research Interests**

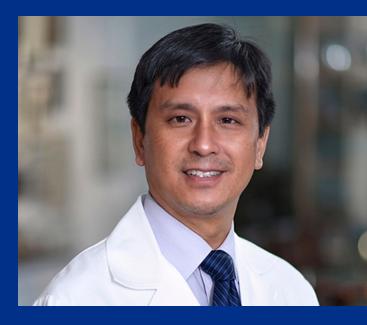
Dr. Fisher has focused his entire career on pancreatic cancer and is internationally known for his clinical work as a pancreatic surgeon, basic science research and clinical research in pancreatic cancer. As Director of the Elkins Pancreas Center at Baylor College of Medicine (BCM) he has developed and coordinates clinical care for a large pancreatic cancer patient population as well as basic science and clinical research related to pancreatic cancer being performed at BCM. Dr. Fisher established a pancreatic cancer tissue resource and extensive clinical database which serve as a vital resource for research. Dr. Fisher's lab has studied the influence of gastrointestinal hormones, particularly somatostatin and its receptors, on pancreatic cancer growth, and the relationship between diabetes and pancreatic cancer. Dr. Fisher has also collaborated on projects examining the role PDX-1 as an oncogene, gene therapy, oncolytic virotherapy, vaccination with virus-like particles, and adoptive T-cell immunotherapy for pancreatic cancer. Dr. Fisher is also actively collaborating with investigators in the Human Genome Sequencing Center at BCM on studies sequencing the genome of pancreatic cancer and the detection of circulating DNA in pancreatic cancer patients. Dr. Fisher leads a team of research clinicians dedicated to translating discoveries from the bench to the bedside and has served as principal investigator on more than 15 clinical trials for patients with pancreatic cancer.





**Raymon Grogan, MD, MS** Associate Professor of Surgery Surgical Oncology Baylor College of Medicine

Section Chief, Endocrine Surgery Baylor St. Luke's Medical Center



### Keywords

- Parathyroid
- Thyroid
- Hyperparathyroidism

#### **Contact Information**

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### **Research Interests**

Dr. Grogan runs a well-known translational research program. He has a Master of Science with a focus on epidemiology and biostatistics. He is the Principal Investigator and founder of the North American Thyroid Cancer Survivorship Study, which is a longitudinal cohort study that currently has nearly 3,000 participants enrolled and continues to expand. Through this work Dr. Grogan has published several novel findings related to thyroid cancer survivorship and has helped start a national discussion on ways to improve quality of life in these patients. In addition to this Dr. Grogan has published several papers on health outcomes related to endocrine surgery as well as translational papers on the genetics and epidemiology of endocrine diseases. Most recently Dr. Grogan has begun research on the relationship between the human microbiome and thyroid disease. In 2017 he was awarded the prestigious Paul LoGerfo Research Grant from the American Association of Endocrine Surgeons to study this relationship.

### Keywords

- Breast Surgery
- Surgical Oncology
- Clinical Trials

### **Contact Information**

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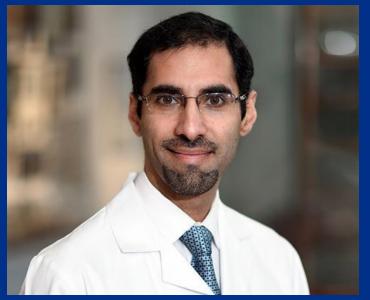
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**Cary Hsu, MD** Assistant Professor of Surgery Surgical Oncology Baylor College of Medicine

#### **Research Interests**

Dr. Hsu earned a degree in Cellular and Molecular Biology at the University of Michigan and completed medical school at Temple University School of Medicine. He completed his residency at UCLA and a clinical fellowship at the National Cancer Institute. Dr. Hsu received fellowship training in surgical oncology at MD Anderson Cancer Center.

Dr. Hsu's clinical interest is in the multidisciplinary management of solid tumors. The multidisciplinary team at Ben Taub is committed to providing evidencebased, state of the art care for all cancer patients. Dr. Hsu is also engaged in the training of students and residents at the Baylor College of Medicine. Dr. Hsu's research interests include clinical outcomes in surgical oncology, translational research, and clinical trials.



#### Atif Iqbal, MD

Associate Professor and Chief, Section of Colorectal Surgery Division of Surgical Oncology Baylor College of Medicine



### Keywords

- Health-science
- Outcomes
- Colorectal cancer
- Inflammatory Bowel Disease

### **Contact Information**

Dan L Duncan Comprehensive Cancer Center 7200 Cambridge St, 7th floor Houston, Texas 77030



### **Research Interests**

Dr. Iqbal's research interests focus on health services & outcome-based translational research in colorectal pathology with a focus on rectal cancer outcomes, inflammatory bowel disease markers and institution of enhanced recovery programs after surgery. Other interests include quality improvement projects to improve colorectal infection and leak rates, evaluating newer surgical techniques and integrating artificial intelligence into real-time surgery. He has >130 research publications, presentations and posters.

Dr. Iqbal is a member of Alpha Omega Alpha medical honor society. He is recognized nationally as a colorectal cancer expert and is currently serving as an elected surgical expert on the NCI Rectal-Anal Task Force and the Colon task force of the GI steering committee. He is actively involved with the American College of Surgeons (ACS), American Society of Colon and Rectal Surgeons, and NRG Oncology. He has earned honors for his research presentations to the ACS, Society of American Gastrointestinal and Endoscopic Surgeons and the Commission on Cancer.

@BCM\_Surgery

### Keywords

- Colon and rectal cancer
- Inflammatory bowel disease
- Pelvic floor disorders

## **Contact Information**

Baylor St. Luke's Medical Center McNair Campus 7200 Cambridge Street Houston, Texas 77030



#### **Yesenia Rojas-Khalil, MD** Assistant Professor of Surgery Surgical Oncology Baylor College of Medicine

#### **Research Interests**

Dr. Rojas-Khalil has authored and coauthored many original research publications, in addition to contributing to surgical textbook chapters in Current Surgical Therapy, Scientific American Surgery, and The SCORE Curriculum for resident education. She is also the Spanish Video Commentator and Contributing Abstract Translator for Diseases of the Colon and Rectum (DC&R), the official journal for the American Society of Colon and Rectum Surgeons (ASCRS). Dr. Rojas-Khalil is an active member of the American College of Surgeons (ACS) and American Society of Colon and Rectum Surgeons (ASCRS).



**Crystal S. Shin, PhD** Assistant Professor of Surgery Surgical Oncology Baylor College of Medicine



### Keywords

- 3D-Fabrication
- Biomaterials
- Drug Delivery

### **Contact Information**

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### **Research Interests**

Dr. Shin's translational research program focuses on developing biomaterials for pharmaceutical and surgical applications. By integrating nanotechnology and 3D-fabrication technology including 3D bioprinting and electrospinning, she has developed broadly applicable drug delivery systems with enhanced therapeutic efficacy. Her current research focus is to develop biopolymer-based antimicrobial wound dressings and surgical meshes to improve clinical outcomes.

### Keywords

- Solid organ malignancy
- Resident training

### Contact Information

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#### Eric J. Silberfein, MD

Associate Professor of Surgery Division of Surgical Oncology Associate Director, General Surgery Residency Program Baylor College of Medicine

Chief of Surgical Oncology Ben Taub Hospital

#### **Research Interests**

Dr. Silberfein's research interests include the natural history of solid organ tumors as well as the multidisciplinary therapy of solid organ malignancy. Further interests include the education of residents and medical students by improving knowledge and skills through formal curriculum.





James W. Suliburk, MD Associate Professor of Surgery Surgical Oncology Chief, Endocrine Surgery Medical Director, Center for Ambulatory Surgery Therapeutics Baylor College of Medicine

### Keywords

- Mobile Technology
- Patient Engagement
- Safety & Quality in Surgery

### **Contact Information**

Dan L Duncan Comprehensive Cancer Center 7200 Cambridge St, 7th floor Houston, Texas 77030 suliburk@bcm.edu



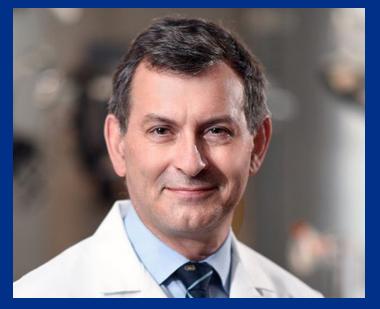
#### **Research Interests**

Dr. Suliburk's research program offers opportunities in translational science, clinical outcomes and technology development/innovation. Research interests include clinical outcomes in endocrine surgery, outcomes in acute care and trauma surgery, surgical disparities and application of mobile technology to improve peri-operative surgical care, patient engagment and communication. The research comes from the establishment of a comprehensive and multidisciplinary treatment of endocrine surgical program at Ben Taub Hospital and Baylor St. Luke's Medical Center.

Translational research opportunities include development of novel molecular markers to predict outcome in endocrine surgical disease (thyroid cancer, hyperthyroidism, hyperparathyroidism, and adrenal tumors) as well as metabolic markers of the endocrine response in severely injured major trauma patients. Clinical research includes outcomes analysis of access to care for underserved populations undergoing endocrine surgery along with developing novel percutaneous surgical approaches to treat thyroid, parathyroid and adrenal disease and ongoing refinement of hemorrhagic shock resuscitation strategies to improve survival in our trauma patients.

Exciting work has recently begun in technology and innovation. Mobile technology has become an ever-present part of daily life and we have now begun to study and apply methods of utilizing automated mobile technology to improve communication with patients for detection of impending complications and to supplement peri-operative care for surgical patients. Finally and perhaps most importantly, we have launched a program to enhance safety in surgery through the a human factors engineering based approach to analyze surgical complications across the entire adult hospital system of Baylor.





# Alastair Thompson, BSc, MBChB, MD

Professor and Chief, Breast Surgery Division of Surgical Oncology Olga Keith Wiess Chair of Surgery Co-Director, Lester and Sue Smith Breast Center Dan L Duncan Comprehensive Cancer Center Baylor College of Medicine



### Keywords

- DCIS
- Triple Negative Breast Cancer
- Clinical translational trials

### **Contact Information**

Dan L Duncan Comprehensive Cancer Center 7200 Cambridge St, 7th floor Houston, Texas 77030

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### **Research Interests**

Dr. Thompson has served as principal investigator on landmark breast cancer clinical trials, including SOLE, MA 32, MINDACT and KRISTINE trials. He currently chairs the Translational Medicine Breast Group of the Southwest Oncology Group (SWOG); co-chairs the Loco-regional Steering Group of the Translational Breast Cancer Research Consortium (TBCRC), is a member of the NCI BOLD taskforce and of the Early Breast Cancer Trialists' Collaborative Group, is national coinvestigator and correlative science lead for the Comparison of Operative to Monitoring and Endocrine Therapy (COMET) trial for low-risk DCIS, and co-chairs the NCI-Breast Cancer Steering Committee-proposed "no surgery" clinical trial planning committee. Dr. Thompson also continues to chair the Sloane Project (the NHS Breast Screening Programme non-invasive prospective cohort study of 13,000 women), which is the largest prospective study of screen detected DCIS in the world. He is co-author of over 350 publications.

### Keywords

- Pancreatic cancer
- Gastrointestinal malignancies
- Whipple procedure

### **Contact Information**

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#### **George Van Buren, II, MD** Associate Professor of Surgery Surgical Oncology

#### **Research Interests**

Dr. Van Buren's primary area of interest is pancreatic cancer and gastrointestinal malignancies including gastric cancer and neuroendocrine tumors. I am interested in development of clinical trials, analysis of clinical outcomes in pancreatic cancer patients, and genomic analysis of pancreatic cancer patients. Currently he is involved in a Clinical Trial of a Phase III Study of FOLFIRINOX with or without HyperAcute®-Pancreas (algenpantucel-L) Immunotherapy in Subjects with Borderline Resectable or Locally Advanced disease. He is also involved with collaborations to perform genomic analysis of pancreatic cystic fluid and analysis of serum in pancreatic adenocarcinoma patients for circulating tumor cells. He also has an interest in evaluation of patients with pancreatitis and predicting pancreas cancer in that population.



#### Qizhi Cathy Yao, MD, PhD

Professor of Surgery Surgical Oncology Baylor College of Medicine

### Keywords

- Pancreatic cancer
- HIV
- Immunotherapy

### **Contact Information**

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# Scan for Publications



- Mesothelin
- MicroRNA
- Nanoparticle targeted delivery
- Vaccine

42

### **Research Interests**

Dr. Yao's research programs include HIV vaccine development, pancreatic cancer pathogenesis, and therapy.

#### HIV Vaccines

My lab is interested in developing non-infectious HIV virus-like particles (VLPs) as candidate HIV mucosal vaccines for both preventive and therapeutic purposes. In preclinical studies, VLPs formed by structural proteins are highly immunogenic and capable of inducing protective immunity against various viral infections. We have modified vaccine immunogens into chimeric HIV VLPs which contain influenza viral surface glycoprotein HA or other immunologically functional molecules. We have shown that the chimeric HIV VLPs can induce enhanced humoral and cellular immune responses against HIV in a mouse model.

We have also studied the basic mechanisms of VLP-induced humoral and cellular immune responses, and other factors that affect these responses. For example, we found that VLP vaccines activate conventional B2 cells and promote B cell differentiation to IgG2a producing plasma cells; that VLP vaccines travel to the lymph nodes upon immunization and can be directly visualized by optical imaging techniques; and that intradermal immunization generates improved responses and might be a preferable delivery route for viral and cancer immunotherapeutic studies involving VLPs.

Since dendritic cells (DCs) have long been known to be pivotal in initiating immune responses, we are also interested in how VLPs modulate DC functions and will evaluate the efficacy of VLP-pulsed DC vaccines. In addition, we are testing the efficacy of modified chimeric VLP oral-mucosal immunization with novel vaccine adjuvants in non-human primates.



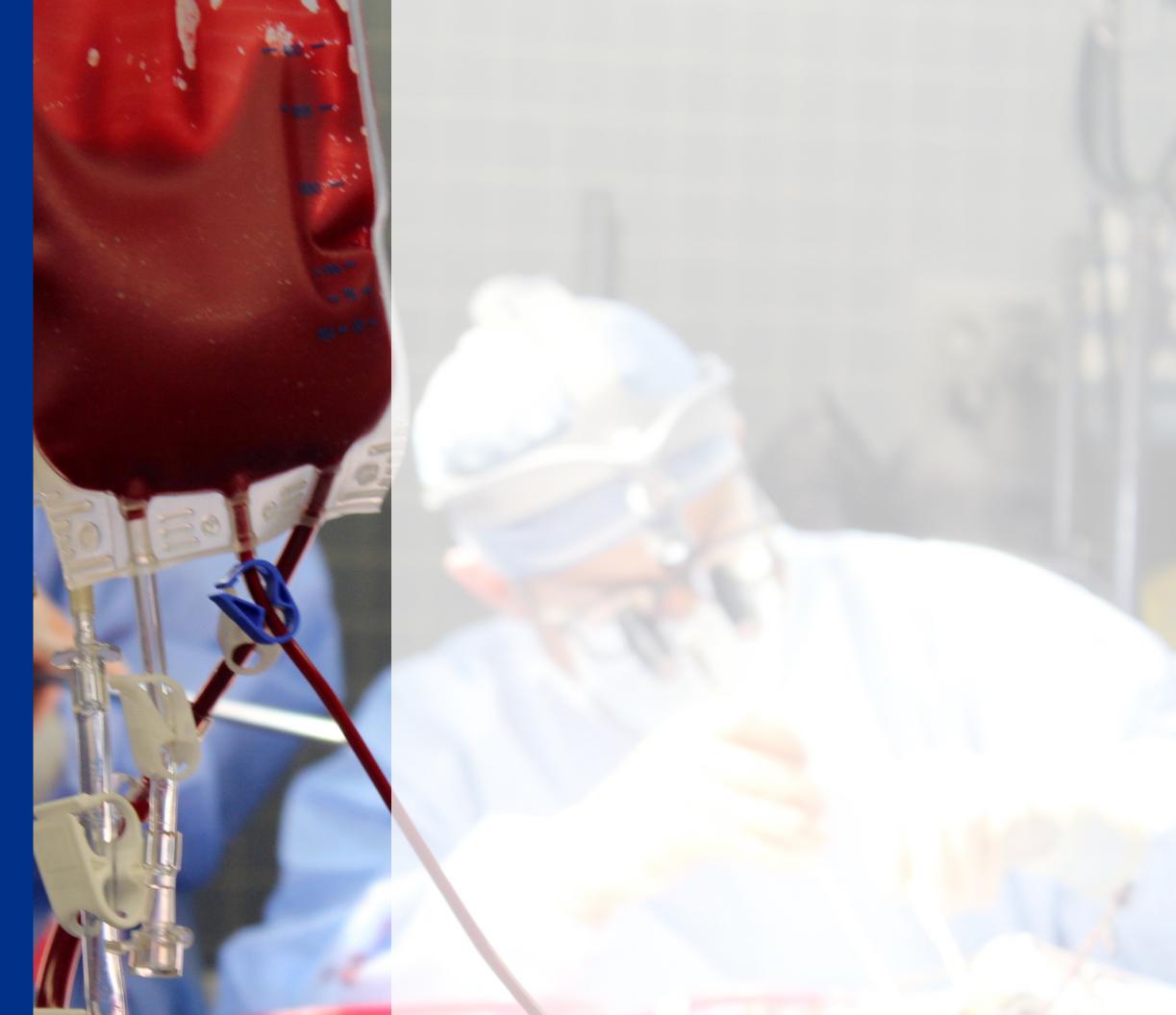
#### Pancreatic cancer pathogenesis and therapy

Pancreatic cancer has one of the highest mortality rates and ranks as the third leading cause of cancer death in North America. Survival is poor because there are no reliable tests for early diagnosis and no effective therapies to treat metastatic disease. There is a need to better understand the molecular mechanisms of pancreatic cancer tumorigenesis and to develop effective treatments. My lab currently focuses on the study of key molecules in pancreatic cancer, including mesothelin (MSLN), trop2, and semaphorin 3E, and in their mechanisms of regulation. I am also interested in the involvement of microRNAs (miR-198) in pancreatic cancer, and how their dysregulation leads to pathogenesis. We are also currently exploring tumor-associated molecule targeted therapies and RNA interference delivery by liposomes and nanoparticles in vivo. Our group has shown that vaccinating mice with chimeric virus- like particles containing MSLN significantly inhibited tumor progression, suggesting a new therapeutic vaccine strategy whereby MSLN is targeted to attempt to control pancreatic cancer progression. We are also employing a K-ras mutation spontaneous pancreatic cancer mouse model, humanized tumor-bearing mouse model, and patient-derived xenograft (PDX) model to study prevention and the potential of our therapeutic regimens in pancreatic cancer.

# Trauma and Acute Care Surgery

Our faculty are leaders in their field through their contributions to the advancement of surgical practice. The whole gamut of surgical research is embraced by our division members from basic science research, to outcomes research, to leadership on multicenter randomized clinical trials. As a result of our research efforts, patients receive specialized diagnostic assessment; access to the newest treatment modalities, including clinical trials of new pharmacologic therapies and emerging surgical techniques; and coordinated follow-up of their care at all of our clinical sites.

Faculty provide important evidenced-based care for some of Houston's most acutely injured patients. Faculty from the Division of Trauma and Acute Care Surgery staff the trauma center at Harris Health's Ben Taub Hospital. Our surgeons integrate the best of science and innovative technology with sound outcomes research as they treat patients suffering life-threatening injuries caused by blunt and ballistic trauma. Patients with acute surgical illness due to causes other than trauma at Ben Taub, the Michael E. DeBakey VA Medical Center, and Baylor St. Luke's Medical Center are treated by division clinicians who specialize in emergency general surgery and the management of critically ill patients in the intensive care unit.





**Subhasis Chatterjee, MD** Assistant Professor of Surgery Trauma and Acute Care Surgery Cardiothoracic Surgery

Director, Thoracic Surgical ICU & ECMO Program Baylor St. Luke's Medical Center



# Keywords

- ICU scoring systems
- LVAD
- ECMO

# **Contact Information**

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### Research Interests

Dr. Chatterjee's basic science areas of investigation included an NIH-sponsored grant for gene therapy in ischemia-reperfusion injury after myocardial infarction. He has participated and served as an investigator in a number of clinical trials. His clinical focus in research is in mechanical circulatory support, resource utilization, and critical care scoring systems for the care of cardiothoracic surgical patients.

# Keywords

• Global surgery

# **Contact Information**

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### Rachel W. Davis, MD

Assistant Professor of Surgery Trauma and Acute Care Surgery Director, Global Surgery Resident Track Baylor College of Medicine

Director, Strategic Planning Division of Global Surgery Texas Children's Hospital

### **Research Interests**

Dr. Rachel W. Davis attended Baylor College of Medicine for both medical school and residency, where she was elected to the Alpha Omega Alpha Honor Medical Society and the Gold Humanism Honor Society. As a general surgery resident, she created and developed the Global Surgery Residency Track, the first dedicated global surgery training program in the NRMP match. Since 2014, she has worked with the Department of Surgery to build educational opportunities in global surgery for trainees and professionals, including the Diploma Course in Tropical Surgery, Obstetrics, and Gynecology in conjunction with the National School of Tropical Medicine. Dr. Davis has worked toward expansion of surgical access in Ecuador, Guatemala, Malawi, Mongolia, Nepal, and Tanzania. She is chair of the American College of Surgeons Resident and Associate Society (RAS-ACS) Global Surgery Work Group and a member of the Houston Global Health Collaborative Board of Directors.



Marcus Hoffman, MD Assistant Professor of Surgery Trauma and Acute Care Surgery Baylor College of Medicine

Assistant Director, UME Simulation Programs Department of Surgery



# **Contact Information**

Ben Taub Hospital 1504 Taub Loop Mail Stop: BCM390 Houston, Texas 77030 (713) 873-2000

### **Research Interests**

Dr. Hoffman's research interests include frailty and debility of trauma and critical illness. Dr. Hoffman has a strong interest in medical student and resident education.

# **Contact Information**

Jamail Specialty Care Center 1977 Butler Blvd. Suite E6.100 Houston, Texas 77030

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### Michele Loor, MD

Associate Professor of Surgery Trauma and Acute Care Surgery Chair, Social Equity Committee Baylor College of Medicine

Medical Director, Surgical Intensive Care Unit Baylor St. Luke's Medical Center

# **Research Interests**

Dr. Loor's research interests include surgical critical care, surgical infections, preoperative optimization, and enterocutaneous fistulas.





**Claire F. Ozaki, MD** Associate Professor of Surgery Trauma and Acute Care Surgery Baylor College of Medicine

Chief, General Surgery Section Baylor St. Luke's Medical Center



# Keywords

• Liver Disease

### **Contact Information**

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### **Research Interests**

Dr. Ozaki, was born in St. Louis, Missouri and grew up in Hawaii and Nebraska. In 1984, she received her M.D. degree from the University of Nebraska College of Medicine in Omaha. After completing a 6-year surgical residency which included one year of research, she stayed at the University of Nebraska and completed a two year transplant surgery fellowship, specializing in liver, kidney and pancreas transplantation.

Dr. Ozaki is board certified in general surgery and has been performing complex abdominal surgeries since 1990. She now specializes in acute care general surgery. Dr. Ozaki and the acute care surgery team apply the most innovative surgical techniques and evidence-based care delivery methods, work as a team to be readily available to our patients, and achieve the highest published standards of surgical outcomes.

# **Contact Information**

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# Bradford G. Scott, MD

Professor of Surgery Vice Chair for Education Trauma and Acute Care Surgery Baylor College of Medicine

# **Research Interests**

Dr. Scott's clinical and research studies focus on surgical education, resuscitation of the trauma patient, care for the open abdomen, methodologies for complex abdominal wall reconstruction, invention of novel materials repair of hernias and as well as surgery of the foregut.





Catherine Seger, MD Assistsant Professor of Surgery Trauma and Acute Care Surgery **Baylor College of Medicine** 



### **Keywords**

### **Contact Information**

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### **Research** Interests

Catherine Seger, MD, received her medical degree from University of Texas Medical School at Houston. She completed her residency at Baylor College of Medicine in general surgery.

Dr. Seger completed her training with a fellowship in surgical critical care at University of Tennessee Health Science Center in Memphis, where she subsequently remained as a faculty physician before returning to Baylor College of Medicine.

# Keywords

- Trauma
- Immune function
- Infection

# **Contact Information**

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# **Robert Ellis Southard, MD**

Assistant Professor of Surgery Trauma and Acute Care Surgery **Baylor College of Medicine** 

Director, Surgical Critical Care Baylor St. Luke's Medical Center

# **Research Interests**

Dr. Southard's research interests involve determining why critically ill and injured patients develop hospital-acquired infections.





**Galina Toneva, MD** Assistant Professor of Surgery Trauma and Acute Care Surgery Baylor College of Medicine

### Keywords

• Myocardial depression in septic shock

### **Contact Information**

Baylor College of Medicine Medical Center 7200 Cambridge Street, 6B Houston, Texas 77030

### **Research Interests**

Dr. Galina Toneva graduated from Rice University with a B.S. in Biochemistry and Cell Biology in 2008 and earned her M.D. from the University of Alabama School of Medicine in 2013. Following medical school, Dr. Toneva completed the General Surgery Residency Program as well as the Surgical Critical Care Fellowship (2018-2019) at Baylor College of Medicine.







### Barbara W. Trautner, MD, PhD

Professor of Surgery Director of Clinical Research Department of Surgery Baylor College of Medicine

# Keywords

- Urinary tract infections
- Healthcare-associated infections
- Antimicrobial stewardship

# **Contact Information**

Center for Innovations in Quality, Effectiveness, and Safety (IQuESt) 2002 Holcombe Boulevard (152) Houston, Texas 77030 (713) 440-4438 trautner@bcm.edu

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Dr. Trautner is an infectious diseases clinician-investigator at Baylor College of Medicine and the Michael E. DeBakey Veterans Affairs Medical Center, affiliated with the Center for Innovations in Quality, Effectiveness, and Safety (IQuESt). Her primary research interest is the development of new strategies for the prevention of catheter-associated urinary tract infection (CAUTI). She has worked in this area for the past 17 years, supported first by an NIH K23 award and then by a VA Career Development Award. While on career development award support, Dr. Trautner obtained her PhD in clinical investigation from Baylor College of Medicine Graduate School of Biomedical Sciences. Her interest in CAUTI prevention has led her to develop two productive branches of investigation, one in health services research and one in microbiology translational research.

Dr. Trautner's outcomes research has focused on reducing antimicrobial overuse, particularly for the extremely common condition of catheter-associated asymptomatic bacteriuria. Her team completed a successful VA Health Services Research and Development merit review project utilizing guidelines implementation to decrease inappropriate treatment of catheter-associated asymptomatic bacteriuria and is now disseminating this intervention, both inside and outside the VA.





**R. Mario Vera, MD** Assistant Professor of Surgery Trauma and Acute Care Surgery Baylor College of Medicine



### Keywords

- Trauma surgery
- General surgery
- Acute care surgery
- Critical care

### **Contact Information**

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# **Research Interests**

Dr. Vera's interests are trauma, emergency general surgery, and critical care.

# Keywords

- Acute care surgery
- Trauma surgery
- Surgical critical care

# **Contact Information**

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## Jeremy Ward, MD

Assistant Professor of Surgery Trauma and Acute Care Surgery Program Director, Surgical Critical Care Fellowship Baylor College of Medicine

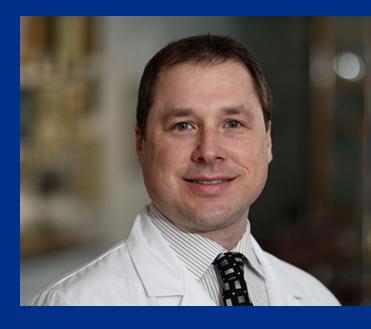
Medical Director, Trauma SICU Ben Taub Hospital





**Chad Wilson, MD, MPH** Associate Professor of Surgery Trauma and Acute Care Surgery Baylor College of Medicine

Trauma Director Ben Taub Hospital



### Keywords

- Trauma epidemiology
- Global surgery
- Healthcare disparities

# **Contact Information**

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# **Research Interests**

During surgical residency, Dr. Wilson he took a two year hiatus from clinical work to concentrate on research and completed the VA Outcomes Fellowship at the White River Junction VA in Vermont while simultaneously earning a MPH in 2006 from the Dartmouth Medical School's Center for the Evaluative Clinical Sciences in Hanover, New Hampshire.

# Keywords

- Hemorrhage resuscitation
- Small bowel obstruction
- Artificial Intelligence solutions

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# **Contact Information**

7200 Cambridge Street Houston, TX 77030

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### Martin D. Zielinski, MD Chief, Division of Trauma and Acute Care Surgery Baylor College of Medicine

Dr. Martin Zielinski received his undergraduate and medical degree at the University of Minnesota in Minneapolis. After his formal education was complete, he transitioned to Mayo Clinic in Rochester, MN as a resident in Surgery. He stayed at Mayo Clinic for additional training in Surgical Critical Care. He was then hired as a staff surgeon in the Division of Trauma, Critical Care and General Surgery. While there, he developed research interests in small bowel obstruction management and novel blood products for hemorrage resuscitation. He quickly advanced and was named the first Professor of Surgery within his Division. After 18 years at Mayo Clinic, he is excited to transition his career to leadership as the Chief of Trauma and Acute Care Surgery at Baylor Medical Center.



# Vascular Surgery and Endovascular Therapy

Our research ventures are broad and focus on the development of new technologies and methods to prevent and treat a variety of vascular conditions. This research covers a wide range of endeavors from preventing falls and measuring frailty with wearable technologies, to preventing amputations by developing novel endovascular techniques to treat peripheral artery disease, to developing novel open, hybrid and endovascular therapies. A major focus at all three institutions is limb salvage and amputation prevention, which is based on the internationally accepted SVS WIFI classification system, developed by our faculty, and utilizes seamless integration of vascular and podiatric care.

Our group is a leader in peripheral arterial disease (PAD), endovascular aneurysm repair (EVAR) and fenestrated EVAR (FEVAR) trials. One of our faculty, Dr. Panos Kougias, is the driving force and national PI of a \$17 million Federal grant to study postoperative anemia and the threshold for transfusion in vascular surgery patients. We collaborate with multiple facilities, analysts, and research teams worldwide to foster advances in the field of vascular health. Among many other grants funded by federal or non-governmental agencies, we recently completed a PCORI grant to reduce amputations and disparities within Harris Health System, our municipal health authority. Our faculty and trainees routinely present their work at the annual meetings of nearly all of the major vascular professional societies, with subsequent publications in the highest ranked surgical journals.







Neal R. Barshes, MD, MPH

Associate Professor of Surgery Associate Program Director Integrated Residency Programs Vascular Surgery and Endovascular Therapy Baylor College of Medicine

Chief, Vascular Surgery Section Michael E. DeBakey VA Medical Center



### Keywords

- Diabetic foot ulcers
- Diabetic limb salvage
- Infrainguinal bypass

### **Contact Information**

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### **Research Interests**

Dr. Barshes is an academic vascular surgeon who focuses on the treatment of foot infections and peripheral artery disease. His research activities have spanned the spectrum of care for this problem, including: foot ulcer prevention efforts; the microbiology of isolates involved in foot infections; patient selection for revascularization; the timing of soft tissue reconstruction after revascularization; and the cost-effectiveness of prevention and management strategies for peripheral arterial disease and non-healing foot ulcers. The clinical research methodologies used to investigate the research questions for these clinical topics have included randomized controlled trials, large database research, retrospective cohort studies with multivariate analyses and/or propensity scoring, and Markov model simulation with formal cost-utility analyses. Current efforts and plans for future direction include further studies are also focused on further optimizing the value of limb preservation efforts, especially through the improved coordination of multidisciplinary care within the context of a vertically-integrated health care system.

# Keywords

- Patient Quality and Safety
- Limb Salvage

# **Contact Information**

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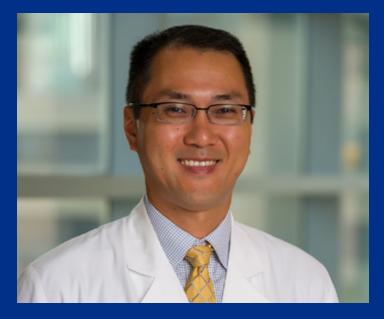
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### Justin Chin-Bong Choi, MD

Assistant Professor of Surgery Vascular Surgery and Endovascular Therapy Baylor College of Medicine

### **Research Interests**

Dr. Choi is a vascular surgeon specializing in all aspects of the diagnosis and treatment of vascular diseases, including a wide variety of arterial and venous disorders. Dr. Choi received his undergraduate degree in Biomedical Engineering with a focus on Cell and Tissue Engineering at The University of Texas at Austin and his medical degree from Baylor College of Medicine. He completed his internship, general surgery residency, and a postdoctoral research fellowship in the Division of Cardiothoracic Surgery at Baylor College of Medicine. He subsequently completed a fellowship in Patient Quality and Safety at the MEDVAMC. He then completed his vascular surgery fellowship at MedStar Washington Hospital Center/ Georgetown University.



# Jayer Chung, MD, MSc

Associate Professor of Surgery Vascular Surgery and Endovascular Therapy Medical Director, Vascular Surgery Baylor College of Medicine



# Keywords

- Diabetic foot
- Lower extremity revascularization
- Chronic critical limb ischemia

# **Contact Information**

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# Keywords

- Vascular and endovascular interventions
- New paradigms in hemorrhage control
- Blood vessel prosthesis implantation

# **Contact Information**

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### **Ramyar Gilani, MD** Associate Professor of Surgery Vascular Surgery and Endovascular Therapy Baylor College of Medicine

Chief, Vascular Surgery Medical Director, Vascular Lab Ben Taub Hospital

### **Research Interests**

Dr. Gilani's research interest is in the clinical outcome of vascular surgical reconstructions and endovascular interventions, specifically in endovascular treatment of aortic aneurysms, venous disease, and endovascular treatment of lower extremity occlusive disease.

Dr. Gilani has contributed numerous articles to scholarly and professional journals such as Journal of Vascular Surgery, Vascular and Endovascular Surgery, Vascular Journal, and Journal of Endovascular Therapy. He has written many book chapters related to vascular disease management.



**Erin Greenleaf, MD** Assistant Professor of Surgery Vascular Surgery and Endovascular Therapy Baylor College of Medicine



### Keywords

- Clinical outcomes
- Vascular surgery

### **Contact Information**

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### **Research Interests**

Dr. Erin K. Greenleaf completed her master's degree in forensic science at George Washington University in Washington, D.C., while working for the federal government. She received her medical degree from Jefferson Medical College of Thomas Jefferson University in Philadelphia and went on to complete a general surgery internship and residency at Penn State M.S. Hershey Medical Center in Hershey, Pennsylvania.

Dr. Greenleaf also completed a research fellowship in clinical outcomes, with academic contributions in the fields of vascular surgery and oncology. Following her residency, she completed her fellowship in vascular surgery at the Washington University School of Medicine in St. Louis. Dr. Greenleaf is certified by the American Board of Surgery in general surgery and is currently serving in the U.S. Army Reserves as a general surgeon.

# Keywords

- Limb salvage
- Tibial intervention
- Cerebrovascular disease
- Blood vessel prosthesis implantation



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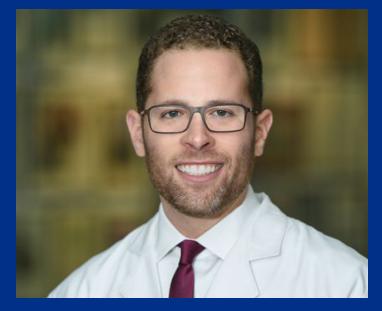
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### Natasha Hansraj, MD Assistant Professor of Surgery Vascular Surgery and Endovascular Therapy Baylor College of Medicine

### **Research Interests**

Dr. Natasha Hansraj has extensive experience in an array of endovascular procedures with a focus on aortic aneurysms and limb salvage. She is currently involved in a few key research projects including, "Gender and race disparities in early operations for symptomatic carotid disease in Texas Hospitals."

Dr. Hansraj has published 16 papers in major medical journals, over half as first author. She has also written three book chapters, including "Parathyroid Carcinoma" in the Textbook of General Surgical Oncology. Along with colleague Dr. Miguel Montero, associate professor in the Division of Vascular Surgery and Endovascular Therapy, she cocreated the Houston Technical Forum, which brings together different specialities to discuss complex cases in vascular disease.



**Brian D. Lepow, DPM** Assistant Professor of Surgery Vascular Surgery and Endovascular Therapy Baylor College of Medicine



- Diabetic foot
- Limb salvage
- Amputation prevention

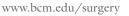
### **Contact Information**

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## Keywords

- Limb salvage/Diabetic Foot
- Peripheral artery disease (PAD)
- Vein graft stenosis
- Endovascular therapy
- AAA

### **Contact Information**

Baylor Medicine McNair Campus 7200 Cambridge Street, Suite 6E Houston, Texas 77030





### Joseph L. Mills Jr., MD

Professor and Chief Vascular Surgery and Endovascular Therapy John W. "Jack" Reid, M.D., '43 and Josephine L. Reid Endowed Professor of Surgery Baylor College of Medicine

Medical Director, Diabetic Foot and Wound Care Center Baylor St. Luke's Medical Center

### **Research Interests**

Dr. Mills has authored nearly 300 peerreviewed journal articles and book chapters, focused on his clinical and research interests in noninvasive diagnosis, vein graft stenosis, intimal hyperplasia and limb-salvage in patients with diabetes mellitus. He has been the principal investigator for over 40 clinical trials, including a number of current investigations.



### Bijan Najafi, PhD, MSc

Professor of Surgery Director, Clinical Research Vascular Surgery and Endovascular Therapy Director, Interdisciplinary Consortium on Advanced Motion Performance (iCAMP) Baylor College of Medicine



# Keywords

- Wearable technology
- Movement science
- Digital health
- Exergame/Exercise Science

### **Contact Information**

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# **Research Interests**

Dr Najafi has over two decades of experience in designing bio-inspired sensors for objective evaluation of healthy state of patients with locomotor dysfunctions, over 200 scientific publications in peer reviewed journals or conference proceeding with more than 5000 citations, 20+ issued or pending patents, and have been PI or a key investigator on over 50 industrial, national and international grants (\$50M+). He worked with a wide network of clinical and bioengineering collaborators across the globe primarily in the clinical areas of falls, frailty, gait, cognitive impairment, dementia, and diabetes and diabetic foot ulcers. He has assisted in successful translation of several innovative technologies for commercialization in the area of remote heath monitoring, precision medicine, and movement assessment including several wearable and mHealth technologies for activities monitoring, gait analysis, balance assessment, automatic fall detection, patient adherence, smart home design for people with dementia, and various technologies for foot problems management including prevention of diabetic foot ulcers and wound management.

# Keywords

- Vascular Ultrasound
- Hemodialysis Access
- Vascular Trauma

# **Contact Information**

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### **Zachary Pallister, MD** Assistant Professor of Surgery Vascular Surgery and Endovascular Therapy Medical Director, Office-Based Endovascular Lab Baylor College of Medicine

# **Research Interests**

Dr. Pallister's research interests involve clinical outcomes research in peripheral vascular intervention.





Jeffrey Alan Ross, DPM, MD

Associate Professor of Surgery Vascular Surgery and Endovascular Therapy Baylor College of Medicine

# Keywords

- Vascular Ultrasound
- Hemodialysis Access
- Vascular Trauma

## **Contact Information**

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Our comprehensive clinical trial management services, provided by the dedicated research support team housed in our department, allow us to offer you, as our research partner, an efficient, cost-effective, and high-fidelity way of performing clinical trials under a single IRB platform.

Our experienced research core team can be are source to you ingetting your products tested. Please, consider the Department of Surgery at Baylor College of Medicine as a potential partner in your next trial. For more information about our core or conducting a trial with us, feel free to contact Dr. Barbara Trautner, at surgicalresearch@bcm.edu.

### **Budget Planning**

In addition to the support with IRB preparation and actually carrying out the trial, our budget specialists stay on top of the invoicing process and keep the projects financially on track.

# **Our Team**

Clinical trial coordinators, regulatory experts, grants and contract managers, research nurses, a biostatistician, and a database expert are available to assist with performing clinical trials.

### **Clinical Sites**

Baylor College of Medicine currently has four potential sites for clinical studies, covered under one IRB: the Michael E. DeBakey Veterans Affairs Medical Center, Ben Taub Hospital, Texas Children's Hospital, and the Baylor St. Luke's Medical Center. Our coordinators are credentialed to enroll subjects at all these sites.

# **Clinical Research Support**

Our pool of research coordinators can help with clinical trials by working with a research partner to convey proposals all the way from IRB submission to enrollment of the final subject at one or all our 4 major clinical sites of Baylor College of Medicine. Our team includes research nurses, a physician assistant, and five trials management research assistants who are available to support clinical studies. These individuals are skilled at IRB submission, informed consent, clinical monitoring, completing case reports, regulatory compliance, and final report submission.

Baylor College of Medicine