

YEAR IN  
REVIEW

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60<sup>th</sup>

ANNIVERSARY  
ISSUE



Bringing the Future  
of Cardiovascular  
Health to Life™

Bringing the Future  
of Cardiovascular  
Health to Life™





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*The mission of The Texas Heart Institute is to improve cardiovascular health today through trailblazing research, thought leadership, education, and patient care.*





*Joseph G. Rogers, MD - President and CEO, The Texas Heart Institute*



# INTRODUCTION

## *Message from the President and Chief Executive Officer*

For the past 60 years, The Texas Heart Institute has been recognized as a center of innovation, education, and clinical excellence in cardiovascular medicine, shaping a new landscape for patients with heart and vascular disease.

As we begin the next era in our storied history, The Texas Heart Institute continues to lead with pioneering research and a commitment to applying the latest advances to benefit patients across the globe.

In the pages that follow, many of our remarkable accomplishments over the past year are highlighted. We formally changed our name to The Texas Heart Institute to distinguish us from other organizations that treat heart and vascular disease and to highlight our stature earned through decades of work developing novel approaches to common and uncommon cardiovascular conditions. We also rebranded our clinical practice as The Texas Heart Institute Center for Cardiovascular Care and opened a new 19,000-square-foot office on the 26th floor of the Fannin Tower in Houston. The beautiful space offers our patients convenient access to the most advanced diagnostic and treatment modalities available today and is fully integrated with our research programs, providing those seeking our care with the newest therapies and clinical trials.

The Texas Heart Institute research teams have achieved impressive milestones as

well. Our long-standing focus on novel approaches to treat the failing heart has resulted in the completion of pre-clinical experiments of a new total artificial heart, a federally-funded development program of a mechanical heart for children, and progress with gene- and stem cell therapies that are extending our understanding of new biological treatments for heart disease. Our heart rhythm specialists have developed a novel biomaterial that can be used to pace the heart in a more natural manner than a traditional pacemaker, and our drug development researchers have synthesized a new compound that enhances the effectiveness of vaccines to opportunistic infections with serious cardiovascular consequences and also boosts the effectiveness of cancer immunotherapy.

The Texas Heart Institute remains vibrant, with an unwavering focus on exploring the boundaries of cardiovascular health and disease, challenging contemporary dogma, and discovering new approaches to improve the lives of our patients. We truly are “Bringing the Future of Cardiovascular Health to Life.”





*Celebrating*  
**60 YEARS**  
**OF EXCELLENCE**





# 60 Years of Breakthroughs

## A Pioneering Spirit To Improve Cardiovascular Health

The Texas Heart Institute is known for its spirit of innovation and tradition of excellence. The Institute is also known for its concrete, patient-focused application of basic-science insights and clinical observations to real-world health challenges. Throughout the decades, investigators at The Institute have been global leaders in cardiovascular drug trials and device development, innovators in new surgical procedures and treatment strategies, and mentors to generations of physicians, perfusionists, and scientists.

The clinical approaches developed here have become the standard of care, with a tremendous impact on the lives of patients with cardiovascular disease.

As The Institute enters its seventh decade, it will lead cardiovascular care into an era defined by heart and vascular disease awareness, disease prevention, and improved treatment options—into a future of cardiovascular health.



*An artist's rendering*

The Denton A. Cooley Building  
Houston, Texas



# BUILDING ON DECADES OF DISCOVERY AND INNOVATION

The milestones in The Institute's future will be built upon a six-decade-long foundation of fundamental scientific discoveries, clinical firsts, and institutional achievements like those highlighted below. As the practice of cardiovascular medicine has evolved, so have The Institute's areas of expertise. Our investigators are developing cell and gene-based therapies for heart failure, regenerative medicine approaches to expand transplant options, novel technologies for heart pacing, small-molecule drug compounds with broad medical applications, and magnetic levitation technology for total artificial hearts and heart-assist pumps—just to name a few areas where these teams are pushing the boundaries of cardiovascular science and medicine.



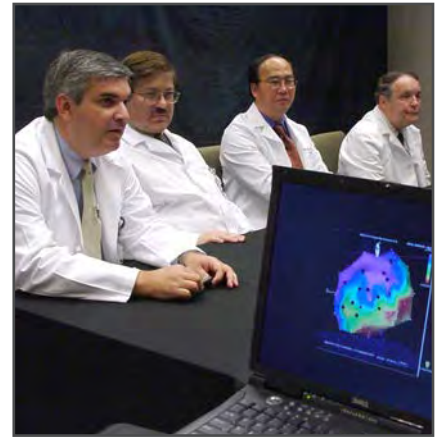
**1968**

First successful heart transplant in the United States



**1972**

The Cardiovascular Surgery Research Laboratories were established



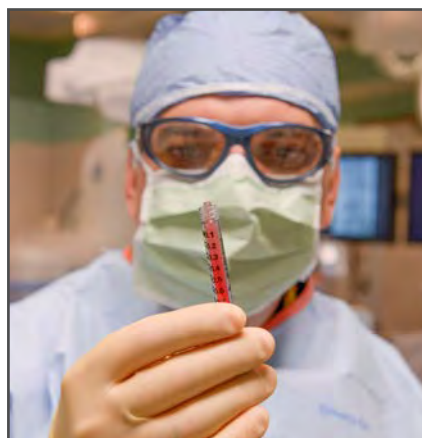
**2001**

Began pioneering the use of stem cells for treatment of heart failure and coronary disease



**2011**

First successful implantation of a continuous-flow total artificial heart in a human being



**2021**

DREAM-HF stem cell study presented at American Heart Association Scientific Sessions



**2022**

Center for Cardiovascular Care opens state-of-the-art clinic with advanced imaging suite



# *The Future of* CARDIOVASCULAR HEALTH

*“Our pioneering spirit continues as we deliver the future today. As researchers, cardiologists, and cardiac surgeons strive to manage an ever-evolving world of cardiovascular diseases, we must continue to reimagine a better future for cardiovascular health and turn that vision into reality.” – Joseph G. Rogers, MD*





The Texas Heart Institute and The Texas Heart Institute Center for Cardiovascular Care are profoundly focused on delivering the future of cardiovascular health. Our physicians, scientists, education faculty, and staff are united in support of The Institute's mission—to improve cardiovascular health today through trailblazing research, thought leadership, education, and patient care—and its vision to bring the future of cardiovascular health to life.

The future of cardiovascular health requires clinical excellence. The Institute has long been known for quality and excellence in patient care, with The Texas Heart Institute at Baylor St. Luke's Medical Center being consistently ranked

among the top cardiovascular centers in the United States by *U.S. News & World Report* since the publication's rankings were first launched more than 30 years ago. This commitment to care is echoed by the depth of our experience, with a volume of open-heart operations, cardiac catheterizations, and heart transplants that have been achieved by only a handful of care centers worldwide. Each case involves the trust of a patient and their family, reminding us that the positive impact of The Institute's mission extends beyond case numbers alone. As it continues to transform patient care, The Center for Cardiovascular Care recently celebrated the opening of its new patient care facility. The new space is designed to further enhance the patient experience by integrating advanced imaging, treatment, and clinical research areas into one suite.

The future of cardiovascular health depends on ground-breaking research. The Institute continues to innovate at the leading edge of basic, preclinical, and clinical cardiovascular research. Efforts of individual scientific teams are amplified by internal partnerships and strong relationships with academic

and industry collaborators across the Texas Medical Center, around the country, and throughout the world. The fundamental purpose of these research endeavors is to improve human health. The Institute emphasizes translational research to transform laboratory discoveries into improved treatment options for patients, through invention, development, testing, and commercialization. Clinical research is a crucial part of bringing approved innovations to patients with cardiovascular disease.

The future of cardiovascular health relies on the clinical workforce of tomorrow. The Institute is instrumental in training clinical fellows and allied health professionals, and in providing the latest clinical information to healthcare providers through continuing medical education programs. The Institute's fellowship programs are competitive and prestigious; physicians who train here learn all aspects of cardiovascular medicine and are exposed to the newest diagnostic and therapeutic technologies available. They also graduate with the ability to integrate research and lifelong education into their clinical practice, as leaders in advancing the future of cardiovascular health.

*“Excellence in clinical care is our reality...we are a direct care offering that is now fully integrated with our world-class research and education arms.”*

*– Eduardo Hernandez, MD*

*“When it comes to research, we push the boundaries of discovery to tackle the most challenging problems in cardiovascular medicine.”*

*– Emerson C. Perin, MD, PhD*







*Celebrating*

**BREAK-  
THROUGHS**



Dr. [Name]  
[Title]  
[Department]

CHI St. Luke's  
[Title]  
[Department]

CHI St. Luke's  
[Title]  
[Department]

THE NEXT FIRST  
Texas Heart Institute

EMERGENCY



# Regenerative Medicine Research and Biorepository Core

## New Insights Into Improving Cell Therapy Outcomes

Cell therapy has been studied for years as an alternative way to treat heart disease, but its effectiveness has been inconsistent. The Regenerative Medicine Research Department and the Biorepository and Biospecimen Profiling Core Laboratory, both under the direction of Dr. Camila Hochman-Mendez, have combined their expertise to provide new insights into patient-related factors that may affect clinical outcomes after cell therapy for heart disease. Their findings suggest that the types of factors that patients' cells secrete (their "secretome") are important in determining whether a patient will benefit from cell therapy.

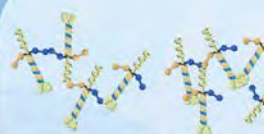
The Regenerative Medicine team is trying to unravel the ways that cells injected to a patient's heart improve its function. The Biorepository Core stores and processes biological materials such as tissues and blood samples from investigators' research and clinical trials. For the study, the team examined bone marrow samples stored at the biorepository from the FOCUS-CCTRN clinical trial, which was conducted by the National Institutes of Health (NIH) Cardiovascular Cell Therapy Research Network and examined the use of autologous cell therapy (cells obtained from a patient's own bone marrow) in patients with chronic heart failure.

Investigators previously studied the bone marrow composition of patients in the trial and reported differences in overall cell makeup in the bone marrow before treatment in patients who did and did not improve. This time, the team specifically characterized differences in the mesenchymal stromal cells (MSCs) between patients who improved and those who declined in heart function.

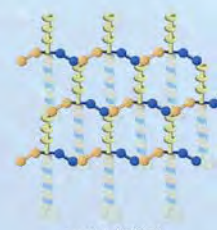
The study showed significant differences in the two groups' secretome profiles; the secretome of patients who improved contained specific factors related to various signaling pathways and cell structure components that were lacking in non-improved patients. The study may be helpful in eventually identifying patients most likely to respond to this treatment. Dr. Hochman-Mendez explains, "Studying the secretome of MSCs may provide important clues to better understand how intrinsic patient characteristics affect outcomes after autologous cell therapy. Our results can be used to design better clinical trials to study cell therapy, with an ultimate goal of delivering personalized medicine for patients with heart failure."



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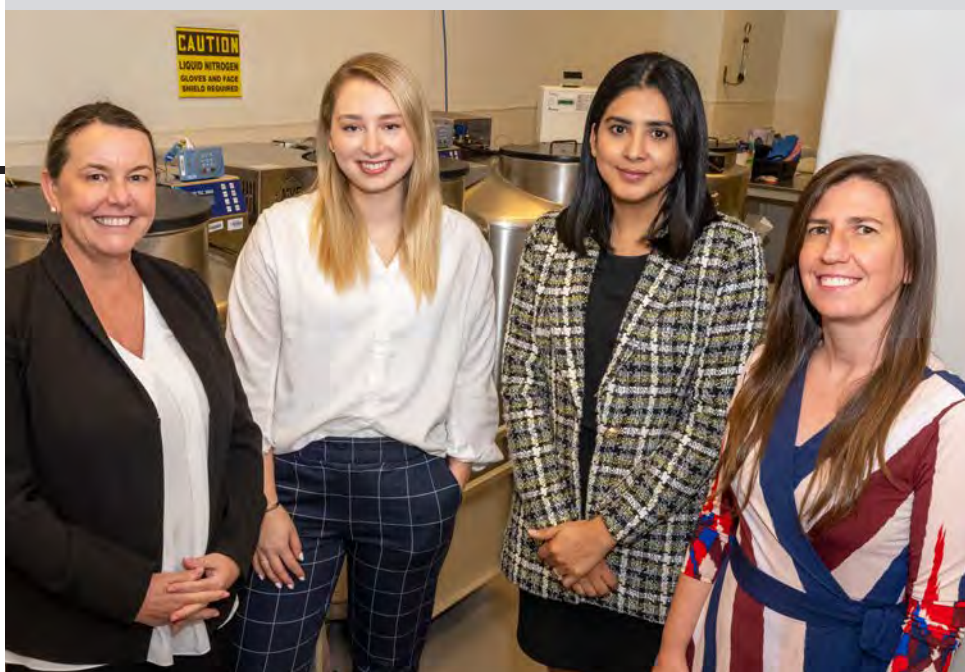
**Camila Hochman-Mendez, MSc, PhD**

*Assistant Investigator, The Texas Heart Institute*

*Director, Regenerative Medicine Research*

*Director, Biorepository and Biospecimen Profiling Core Laboratory*

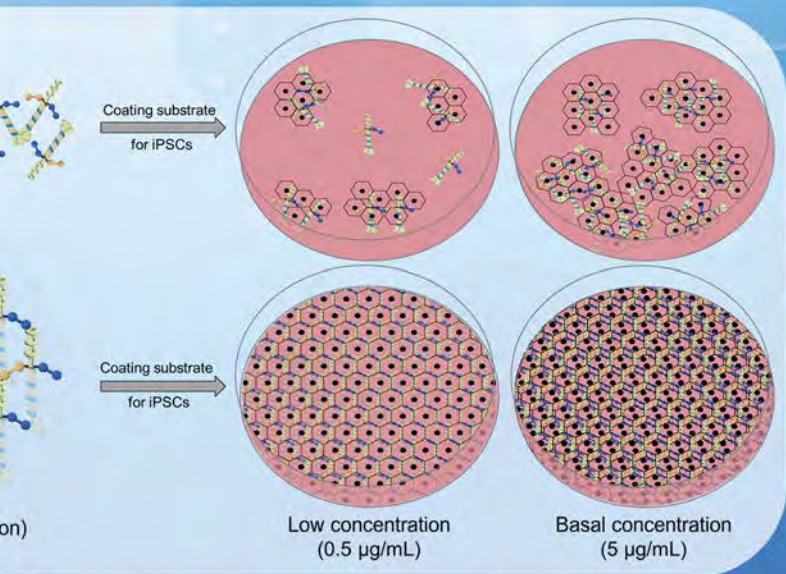




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# minin 521: A New Mine for hiPSC nsion

## Breakthrough Method for Stem Cell Expansion

The Regenerative Medicine Research team is working to further refine the science of creating bioengineered organs and tissues. As such, they recently discovered a novel method to increase human-induced pluripotent stem cell populations (hiPSCs) in culture using a polymerized extracellular matrix protein, polyaminin 521. The details of these groundbreaking findings were published in *Cells*, with a figure illustrating their key discovery featured on the issue cover.

One of the crucial requirements for the reconstruction of new tissues is an abundance of stem cells that give rise to the various cell types that compose the tissue. Scientists had difficulty growing enough hiPSCs—which can become almost any cell type in the human body—in a way that is cost-effective for the large-scale production of the multibillion cells required for tissue and organ bioengineering.

By growing cells on laminin converted into polyaminin 521, the team discovered a new way to support stem cell culture expansion. Dr. Hochman-Mendez shared, “This cost-effective method of expanding hiPSCs has important implications for the creation of bioengineered tissues and for other areas of regenerative medicine, such as disease modeling, drug discovery, and human developmental biology.”



# Molecular Cardiology Research Laboratories

Combining molecular understanding  
and chemistry expertise



Investigators in the Molecular Cardiology Research Laboratories approach advances in cardiovascular care using a very special skillset—they combine expertise in molecular biology with extensive experience in the development of small-molecule and cell-based therapeutics to both understand the molecular mechanisms of heart disease and devise new treatments.

The group's research interests are broad, including the development of new non-invasive diagnostic imaging technologies, stem-cell therapies for pulmonary hypertension and peripheral vascular disease, and computer-aided modeling to predict individualized stroke risk based on a patient's imaging data. One key area of research, however, is poised to benefit patients with cardiovascular disease and improve the treatment of many other disease targets. The team's application of small-molecule therapeutics—specifically inhibitors and activators that target the integrin family of cell adhesion receptors involved in cell trafficking and immune responses—has the potential to detect and treat atherosclerosis and inflammatory vascular disease, enhance responses to vaccines for influenza and Chagas disease, increase the effectiveness of immunotherapy products targeting solid tumors, and improve engraftment of stem cells for transplant and regenerative medicine applications.

Two of these applications garnered special attention in 2022. Together with The University of Texas MD Anderson Cancer Center and 7 Hills Pharma LLC, Molecular Cardiology researchers released a study in *The Journal of Clinical Investigation* describing the use of a novel integrin activator to convert “cold” or non-immunogenic tumor microenvironments to a “hot,” T cell-enriched state, improving the effectiveness of immune checkpoint blockade for cancer treatment. The compound, 7HP349, is a member of a family of small-molecule integrin activators discovered by Institute scientists Drs. Peter Vanderslice, Ronald J. Biediger, and Darren G. Woodside.

Dr. Vanderslice cited the important roles of multidisciplinary teams and interinstitutional partners in the breakthrough, stating, “Our goal is to bring more effective, less toxic immunotherapy treatments to cancer patients, and we are proud to see our unique approach to immune augmentation validated with this publication.”

The investigators at 7 Hills Pharma and The Institute worked with MD Anderson's Dr. Yared Hailemichael to explain the biology underlying these first-in-concept integrin activators. “Our findings shed light on a new approach to improving cancer immunotherapy,” Dr. Hailemichael said. “We are excited to help move this therapeutic a step closer to additional clinical studies.”



## DRUG DISCOVERY FOR CARDIOVASCULAR DISEASE AND BEYOND

*“Our small-molecule integrin activator is what is known as a ‘first-in-class’ compound, making it unique. The positive results from our recent Phase I human-safety trial indicate this compound is potentially poised to benefit multiple patient groups.” – Peter Vanderslice, PhD*



**Peter Vanderslice, PhD**

*Senior Investigator, The Texas Heart Institute  
Director, Molecular Cardiology Research*

7 Hills has obtained both FDA Fast Track and Orphan Drug designations for 7HP349 in advanced melanoma, highlighting the significant unmet needs of these patients. The investigators also recently completed a Phase I clinical trial on 7HP349, funded by the National Institutes of Health (NIH), demonstrating that the drug is safe and can be taken by mouth.

Also in 2022, Drs. Vanderslice and Biediger were awarded a grant from the NIH to optimize their unique integrin activator to expand treatment options for patients who need a bone marrow transplant. With this two-year, \$1.1 million award, Drs. Vanderslice and Biediger join a community of investigators in the NIH’s Catalyze Program, an innovative translational research support mechanism.

Bone marrow transplantation may be needed for people who have cancers of the blood, bone marrow, or lymph nodes, or those with certain genetic disorders. Umbilical cord blood transplantation is sometimes used as an alternative approach to conventional bone marrow transplantation; due to the nature of the cord blood cells, the matching of the donor to the recipient is less stringent, enabling treatment of patients



**Darren G. Woodside, PhD**

*Vice President for Research  
Director, Flow Cytometry and Imaging Core,  
Molecular Cardiology Research*

who could not be perfectly matched to a bone marrow donor. However, for adult patients, the relatively low number of stem cells found in cord blood may lengthen the time it takes for the patient’s transplanted immune system to become fully functional, increasing their risk of infection.

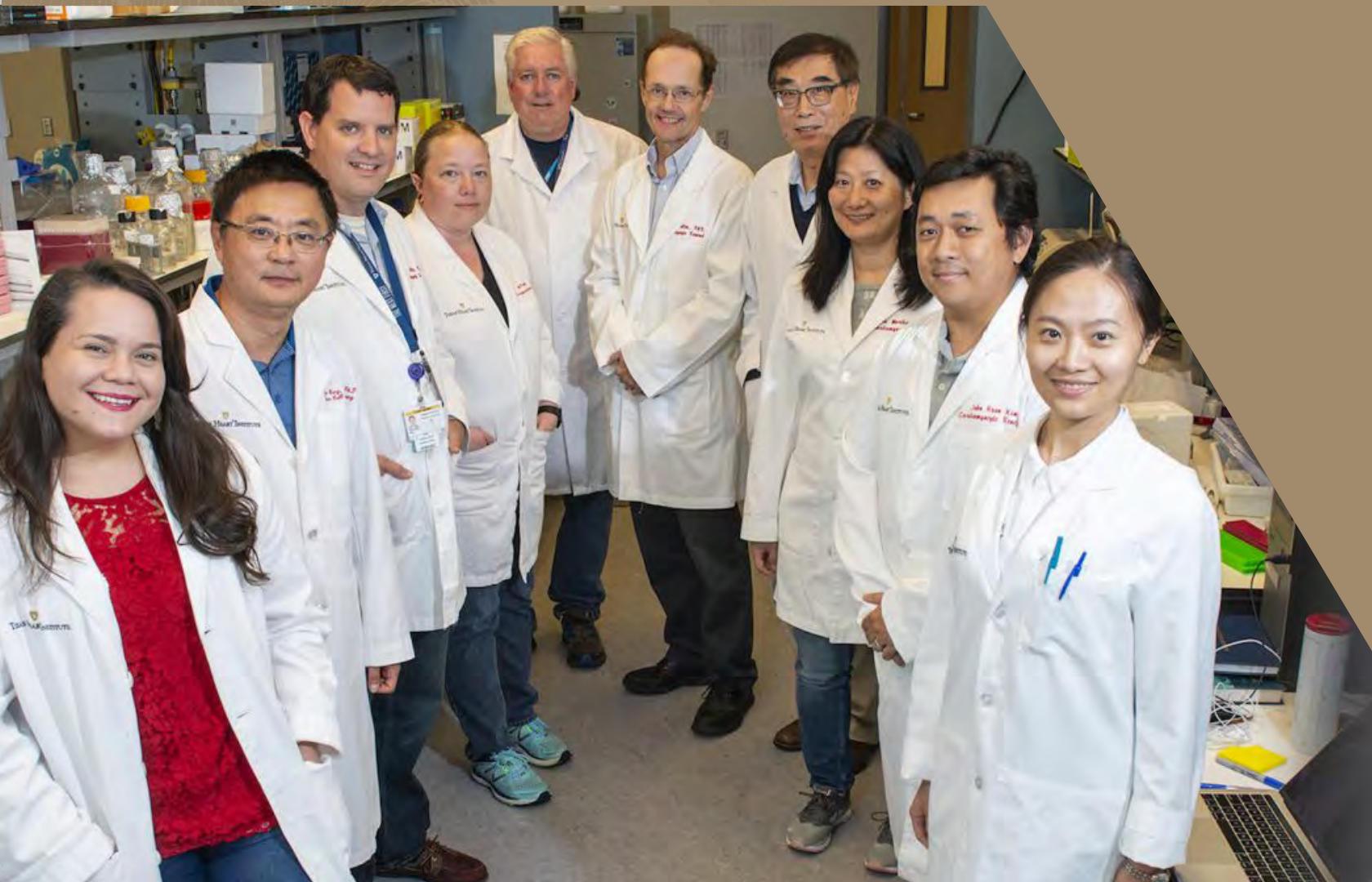
In preclinical studies, the team showed that their integrin activator enhances the results of cord blood transplantation. Their small-molecule activator of cell adhesion improves the homing of the transplanted cells to the recipient’s bone marrow and improves the rate of cell engraftment, decreasing the time to restoration of a functional immune system. This approach could lead to improved outcomes, especially for those adult patients who otherwise could not find a suitable cell donor.

By modifying the compound’s chemical structure, the researchers will create a version optimized for use in cord blood transplantation. At the end of the experimentation and testing process, they hope to select an improved compound for Investigational New Drug-enabling studies, an important step before clinical trials in humans can begin.

# CARDIOMYOCYTE RENEWAL LABORATORY

*Innovative Study Uncovers New Insights Into Congenital Heart Disease*

*“How this disease develops and progresses is poorly understood, so we are trying to better understand the molecular nature of congenital heart disease. Eventually, we hope our work can be used to develop individualized therapies for these patients.” – James F. Martin, MD, PhD*







## Multi-Institutional Collaboration Published in *Nature*

Researchers in the Cardiomyocyte Renewal Laboratory, directed by James F. Martin, MD, PhD, are working to understand how genetic pathways function in the heart. By obtaining an in-depth understanding of these pathways, Dr. Martin and his team hope to develop new techniques for preventing and treating heart disorders.

The investigators recently collaborated with teams at Texas Children's Hospital and Baylor College of Medicine to uncover new insights into the mechanisms underlying the progression of congenital heart disease (CHD) -- a spectrum of heart defects that develop before birth and remain the leading cause of childhood death. The research published in *Nature* represents the first reported sin-

gle-cell genomics evidence of unique differences in heart muscle cells and immune systems of CHD patients. Uncovering these key differences and how these diseases progress provides an opening for researchers to devise new ways to treat CHD. While the eventual outcome of heart failure in CHD is well documented, the underlying cause of declining heart function in these patients is still poorly understood. That knowledge gap in understanding has led to roadblocks in developing new therapies capable of extending a patient's life. To address these questions, Dr. Martin collaborated with Baylor College of Medicine faculty members Iki Adachi, MD, Director of the Mechanical Circulatory Support Program at Texas Children's, and Diwakar Turaga, MD, PhD, a Texas Children's Hospital pediatric cardiac critical care specialist, to profile heart and blood samples from CHD patients. The team studied patients with hypoplastic left heart syndrome, tetralogy of Fallot, and dilated and hypertrophic cardiomyopathies undergoing heart surgery. They also studied samples from blood donors of various ages. "Using several exciting new technologies such as single-cell RNA sequencing, we were able to interro-

gate samples from congenital heart disease patients at the single-cell level. One of our goals is to improve the natural history of this terrible disease afflicting children," said Dr. Martin.

By examining gene expression in each heart sample, they found differences in the cell types in donor and CHD hearts and identified gene expression patterns unique to the type of CHD. In CHD heart samples, they found evidence of cells active in regeneration and observed enhanced cell-to-cell interactions compared to donor samples. By analyzing gene expression in the blood samples, they uncovered evidence of a weakened immune response in the blood cells of the patients, supporting other studies showing that these patients often develop infection and cancer. The researchers also detected an increase in signals related to heart development and inflammation being sent from blood cells to heart cells of CHD patients.

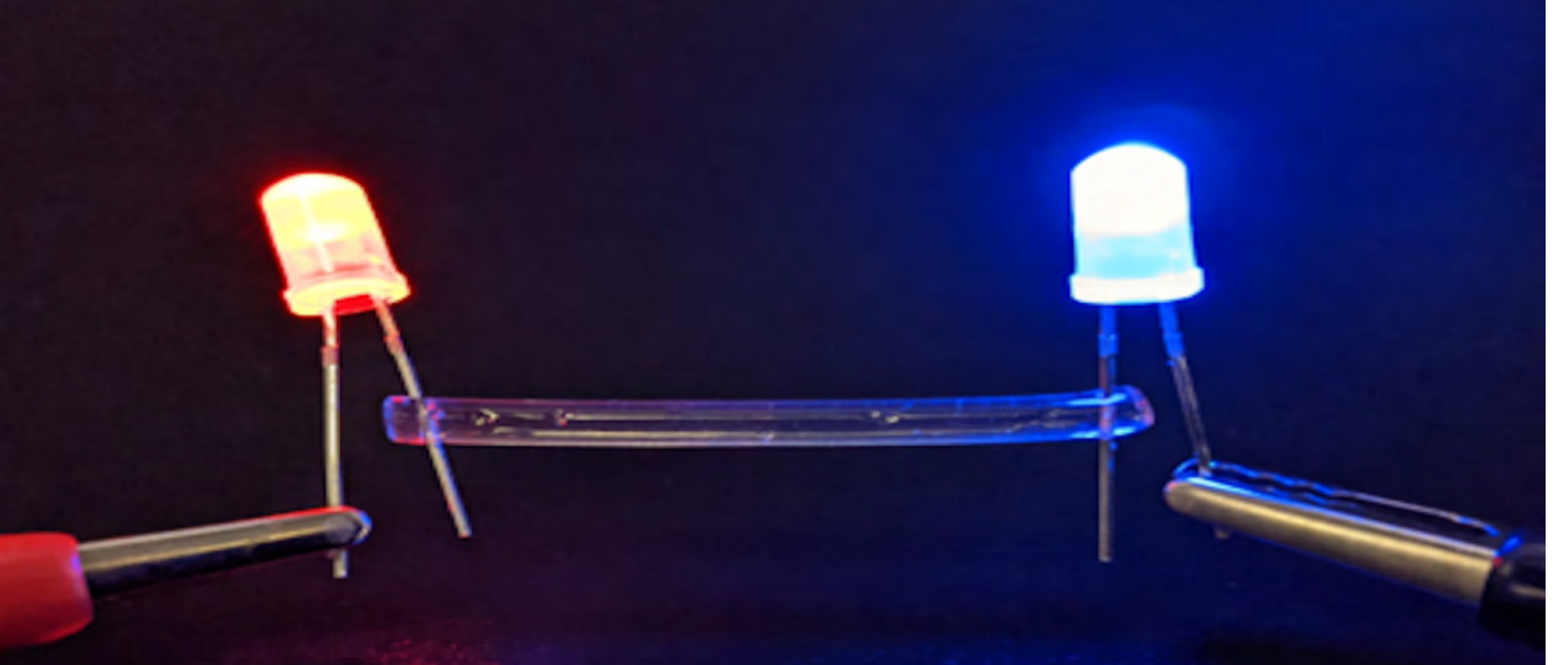
These findings should provide a new roadmap to develop personalized treatments for CHDs, as well as a critical scientific resource of rare pediatric heart samples that will drive further discoveries and deepen understanding of CHD.

**James F. Martin, MD, PhD**

*Director, Cardiomyocyte Renewal Laboratory,  
The Texas Heart Institute  
Vivian L. Smith Professor in Regenerative  
Medicine, Baylor College of Medicine*



Hill MC, Kadow ZA, Long H, Morikawa Y, Martin TJ, Birks EJ, Campbell KS, Nerbonne J, Lavine K, Wadhwa L, Wang J, Turaga D, Adachi I, Martin JF. Integrated multi-omic characterization of congenital heart disease. *Nature*. 2022 Aug;608(7921):181-191. doi: 10.1038/s41586-022-04989-3. Epub 2022 Jun 22.



# ELECTROPHYSIOLOGY CLINICAL RESEARCH & INNOVATIONS

*Engineering Novel Approaches To Help Patients  
With Heart Rhythm Disorders*

The Electrophysiology Clinical Research & Innovations group, led by Mehdi Razavi, MD, is advancing technologies and therapies to treat arrhythmias (heart rhythm disorders) by taking their ideas “from the napkin to the podium.” This concisely describes the multistep process needed to translate their pioneering ideas into U.S. Food and Drug Administration (FDA)-approved treatment options for patients. The inventive team’s recent work focuses on novel conductive, injectable hydrogel pacing electrodes. They are collaborating closely with the laboratory of Elizabeth Cosgriff-Hernandez, PhD, at The University of Texas at Austin, using novel chemistry and bioengineering methods to improve heart pacing.

Cardiac arrhythmias, such as ventricular fibrilla-

tion, are the leading cause of sudden cardiac death. Arrhythmias can occur when the conduction of electrical signals through the heart tissue is disrupted, including by scar tissue, which often forms after a heart attack. Cardiac electrotherapy treatments to restore normal conduction, including pace-making, defibrillation, and cardiac resynchronization therapy, involve the delivery of electrical impulses to the heart tissue through lead electrodes, which are surgically inserted in and around the heart. Cardiologists place lead electrodes in areas where they will electrically stimulate or “capture” as much heart tissue as possible; the more tissue captured, the greater the influence of the electrotherapy and the less damaging the effects of the arrhythmia.





## New “Liquid Wire” Electrode Technology

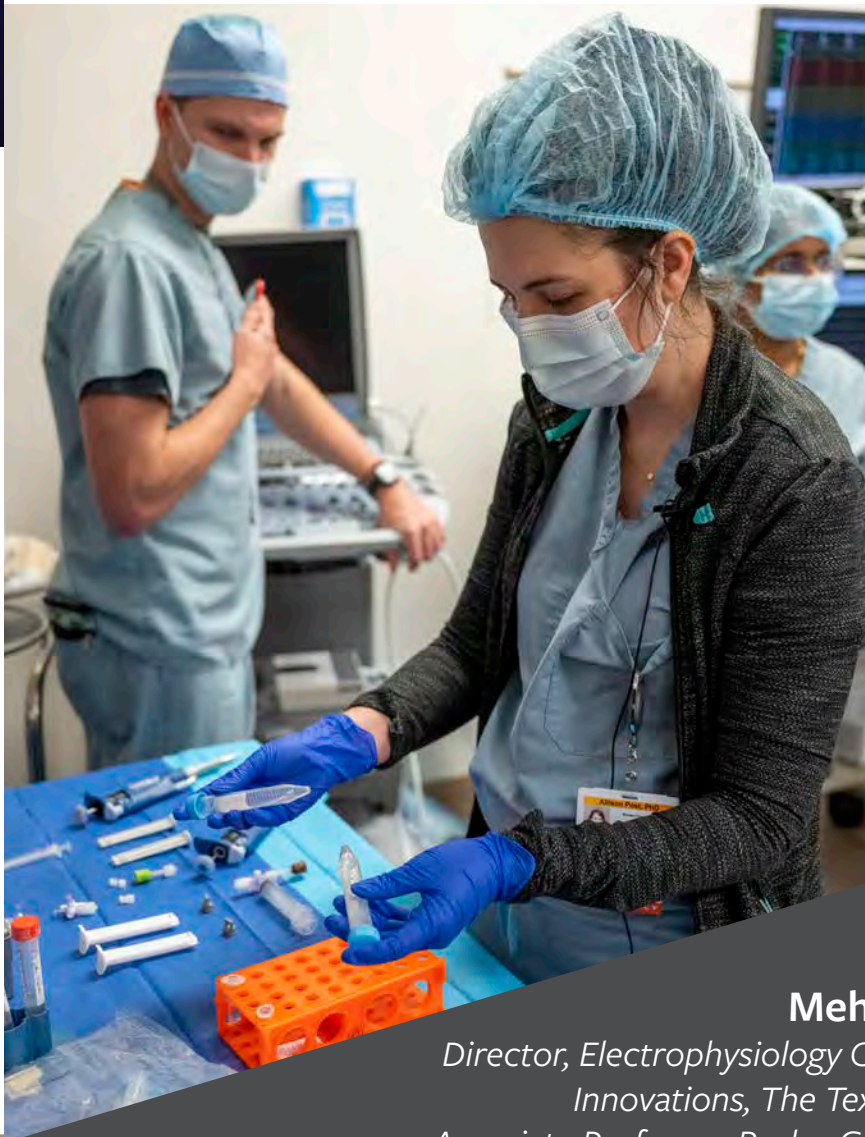
### Injectable Hydrogels Offer Potential Improvements for Pacing Across Scarred Heart Tissue

Some complex arrhythmias are treated by placing lead electrodes into cardiac veins, which is often the safest way to access the left side of the heart. Anatomical challenges to lead placement can reduce tissue capture and limit electrotherapy effectiveness. Thus, the team sought to create a new type of electrode capable of traversing more deeply into the cardiac veins than current leads. Their novel approach uses injectable hydrogel electrodes, composed of polymer networks that swell, with soft-tissue-like properties. A hydrogel solution—created by combining two precursor components— injected into a cardiac vein can flow deep into the smallest vessel branches before solidifying into the conductive hydrogel electrode. In this way, the hydrogel electrode can reach much farther into the heart’s deepest and smallest venous branches than standard pacemaker leads, resulting in increased capture potential. The collaborating biomedical engineers developed a new type of conductive hydrogel for this purpose, combining conductivity with flexibility, durability, and biocompatibility.

In preclinical models, the team tested the heart’s response to the delivery of electrical stimuli, comparing the use of a standard metal surface electrode and a hydrogel electrode injected into a large vein. To assess the relative effectiveness of pacing from the different electrode types, the researchers examined electrograms, which are the electrical signals from the heart as it beats. Their results showed an exciting pattern: although stimulus from both electrode types caused the heart to beat, the electrograms resulting from stimuli delivered via the injected hydrogel matched those resulting from natural heartbeats,

better mimicking native conduction.

There are numerous potential applications of the novel hydrogel electrode that warrant further investigation. For example, the hydrogel electrode could be placed in a vein that crosses scarred heart tissue, bridging zones of healthy tissue and restoring healthy conduction. This technology may also provide a potentially painless way to provide shocks to failing hearts and therefore improve the quality of life for patients who have implantable cardioverter defibrillators (ICDs). Much work remains to be done to translate these exciting early results into a therapy that can be used reliably in human patients, including refining the hydrogel chemistry, showing its long-term stability, and developing a reliable catheter-based system for precursor solution injection.



### Mehdi Razavi, MD

*Director, Electrophysiology Clinical Research & Innovations, The Texas Heart Institute  
Associate Professor, Baylor College of Medicine*





# Innovative Device & Engineering Applications (IDEA) Lab

Engineering and Evaluating the Next Generation of Cardiovascular Medical Devices



## Yaxin Wang, PhD

*Assistant Investigator,  
The Texas Heart Institute  
Director, Innovative Device &  
Engineering Applications*

The Innovative Device & Engineering Applications (IDEA) Lab, led by biomedical engineer Yaxin Wang, PhD, and cardiovascular surgeon O.H. Frazier, MD, is focused on developing and evaluating cutting-edge cardiovascular medical devices. The lab specializes in minimally invasive left ventricular assist devices (LVADs) and various cardiovascular testing/training models for mechanical circulatory systems and interventional medical devices. The team has built strong connections with internal, domestic, and international collaborators, including investigators from Japan and the United Kingdom. The IDEA Lab is also strongly invested in mentoring future engineers and scientists, encouraging significant project involvement from student scholars and other trainees.

## NeoVAD: A Fully Implantable Pediatric Heart Pump

IDEA Lab engineers and their physician collaborators are dedicated to developing novel cardiovascular devices to expand treatment options for patients with heart failure, congenital heart defects, and other heart conditions. By combining decades of institutional experience in mechanical circulatory assist device research with state-of-the-art engineering expertise, the team led by Drs. Yaxin Wang and O.H. Frazier has developed a new class of ventricular assist devices (VADs) with the potential to benefit multiple patient populations.

To address unmet needs for patients with heart failure, the team has been refining the design for their miniaturized partial-support intra-atrial blood pump (MicroVasc), meant to be placed in the wall of the heart between its two upper chambers. This LVAD uses a magnetically levitated bearing system and is small enough to be delivered through a catheter puncture into a large vein. The pump is intended to reduce the workload of the left ventricle (left lower heart chamber); if used for early intervention in heart failure management, this could slow the progression of the disease and promote cardiac remission, or restoration of lost heart function.

The group recognized that the miniature size of this pump might be ideal for pediatric heart-failure patients, whose device options are currently extremely limited. With grant funding from the National Institutes of Health, they are now working on the first fully implantable VAD (NeoVAD) for infants and young children, to help the failing heart in these patients until a suitable donor heart is available. The NeoVAD also offers the potential of adjustability as the child grows. The device should provide higher blood flow and pressure to fit the child's size and development, replacing the need for repeated procedures to change the VAD or implant increasingly larger donor hearts. The new device should also reduce the risk of stroke, bleeding, and infection, improving the children's chances of survival.

The team is currently refining the device's magnetic levitation system design to optimize the pump's compatibility with blood cells and other blood components.





# Fontan Circulation Assist Device

## New Pump Designed for Patients Born With Single-ventricle Heart Defects

The IDEA Lab strives to identify unmet clinical needs and engineer new devices to answer them. The team's work on a new Fontan Assist Device (FAD) is the latest example of this approach.

The Fontan surgical procedure is performed for children born with congenital heart diseases like hypoplastic left heart syndrome, tricuspid atresia, and double outlet right ventricle—diseases in which the child has a single functioning heart ventricle, as opposed the two ventricles needed to pump blood to the lungs and the body. The procedure modifies the child's anatomy so that the blood from the lower body goes to the lungs, and the highly oxygenated blood goes to the heart, allowing the single ventricle to pump highly oxygenated blood to the body. Fontan circulation is palliative, not curative; adults with this type of circulation often face organ system failure and premature death. IDEA Lab investigators are therefore designing a circulatory support device for this patient

population, with the goal of improving their longevity and quality of life.

The team is using their expertise in miniaturized, magnetically levitated blood pump technology to develop a new device that would be placed in the pulmonary artery of patients with Fontan circulation. The device would increase the blood flow going into the lungs and balance circulatory system pressures, recreating a blood flow system that functions more like biventricular circulation. With grant support from the John M. O'Quinn Foundation, the team has designed a prototype device and developed a computer model of Fontan circulation to evaluate the performance of the assist device under different conditions.

As a next step, the team will evaluate the compatibility of the new device with blood components and blood cells, using a custom mock-circulatory loop. Further design refinements and preclinical testing will bring this new assist device closer to clinical use.







# CENTER FOR CLINICAL RESEARCH

*Bringing New Treatment Options to Patients With  
Cardiovascular Disease*

The Texas Heart Institute's Center for Clinical Research (CCR), led by Emerson C. Perin, MD, PhD, and Casey Kappenman, MS, CCRC, is home to a team of skilled professionals who support the clinical research and clinical trials performed by Institute investigators. These studies test the safety and effectiveness of new drugs, devices, procedures, cell and gene therapies, and wearable technology for the treatment and detection of cardiovascular disease—representing a critical step in the regulatory approval process that provides new treatment options to patients. The team also supports registry and database-driven research to provide new clinical insights and improve strategies for cardiovascular disease prevention, diagnosis, and treatment.

The center works closely with study sponsors from industry, federal agencies, academic institutions, and entities within the Texas Medical Center, and supports relevant internal collaborations involving Institute research labs and cores. According to Kappenman, indus-

try-sponsored clinical trials represent approximately 65% of CCR's clinical research funding, highlighting The Institute's broader role in evaluating potential medical advances for cardiovascular disease. Principal investigator (PI)-initiated studies—those based on ideas originating from The Institute's physicians—are also an important and increasing portion of CCR's research portfolio. These pilot clinical studies can lead to larger, federally funded research programs.

Dr. Perin recently summarized the motivation driving the clinical research effort, citing Dr. Mehdi Razavi's Saranas® Early Bird® bleed monitoring device as just one example of an idea originating at The Institute, based on an observed unmet clinical need, that has been developed and is now readily available to clinicians as an FDA-approved product.

The Institute has been a leader in clinical research for decades, particularly in stem cell-based therapies for heart and vascular disease, beginning with pioneering pilot



## LEADERSHIP IN CARDIOVASCULAR CLINICAL TRIALS

*“We are here to contribute to humanity and do things that have not been done.”*

*– Emerson C. Perin, MD, PhD*



**Emerson C. Perin, MD, PhD, FACC**  
*Medical Director, The Texas Heart Institute  
Director, Center for Clinical Research*

studies performed over 20 years ago. Continuing this leadership, Dr. Perin served as Co-PI of the DREAM-HF (Double-Blind Randomized Assessment of Clinical Events With Allogeneic Mesenchymal Precursor Cells in Heart Failure) trial, sponsored by Mesoblast Inc. The findings were published in *Journal of the American College of Cardiology* in February 2023.

DREAM-HF was a phase 3 trial performed at 51 sites in 565 patients with chronic heart failure due to low ejection fraction, who were also on standard-of-care heart failure treatment—the largest cell therapy trial to date in this patient population. The study was designed to examine the effects of mesenchymal precursor cells (MPCs) on the number of hospitalizations and major adverse cardiovascular events in heart failure. MPCs are a good candidate for use in heart failure with low ejection fraction because they have potent anti-inflammatory, pro-angiogenic, and pro-healing effects. The cells were obtained from the bone marrow of healthy adult donors. Cell-treated patients in the study received direct cardiac injections of MPCs, and control patients underwent a “sham” or mock procedure with no injections. MPC-treated patients showed significant strength-



**Casey J. Kappenman, MS, CCRC**  
*Administrative Director,  
Center for Clinical Research*

ening of the left ventricular muscle within the first 12 months as measured by an increase in left ventricular ejection fraction, which measures the heart’s pumping ability and is one of the metrics used to assess overall heart function. Over a mean follow-up of 30 months, treatment with MPCs reduced the risk of cardiovascular death, heart attack, or stroke, with a greater decrease in patients with increased inflammation. MPC treatment reduced the rate of heart attack or stroke by 58%, and the benefit rose to 75% in patients who had high levels of a blood marker for inflammation. Similar to what was seen with these major adverse cardiovascular events, improvement in ejection fraction was even more pronounced in patients with higher inflammation levels. The DREAM-HF findings of long-term improvements in outcomes for patients with chronic heart failure due to low ejection fraction and poor pump function are an important milestone in the field of cell therapy for cardiovascular disease. The results help in identifying those heart failure patients with inflammation who are at greatest risk and most likely to benefit from MPC therapy, and these findings will be confirmed in future studies.

# CENTER FOR PRECLINICAL SURGICAL AND INTERVENTIONAL RESEARCH

*Improving Patient Care Through Innovation*



**O.H. Frazier, MD**

*Director, Cullen Cardiovascular Research  
Laboratory, Center for Preclinical Surgical  
& Interventional Research*







## Team Leverages Unique Expertise in Translational Research

Experts in the Center for Preclinical Surgical & Interventional Research help researchers translate their novel ideas into clinical practice. The team of physicians and researchers is focused on the development and preclinical testing of new medical devices, tools, and procedures. With the shared goal of providing new treatment options for patients with cardiovascular diseases, the center advances projects in partnership with internal labs, other academic institutions, and outside companies.

The center leads sponsored-research testing of mechanical circulatory-assist devices, total artificial hearts, minimally invasive heart pumps, and devices to improve organ transplantation; collaborative innovations in in-

terventional cardiology technologies; and improvements to preclinical models of cardiovascular disease, which will broadly benefit the development of new therapies and devices. The center facilitated research projects for over 25 sponsors in 2022 alone.

With the publication of two notable reviews in 2022 in collaboration with Emerson C. Perin, MD, PhD, team members have also positioned themselves as thought leaders in two rapidly evolving cardiovascular device areas: wearable technologies for heart attack detection and new device-based treatments for heart failure.

The team reviewed the status of wearable technology for solving a significant challenge in the detection and management of heart attack: up to a third of people do not experience chest pain at the onset of a heart attack, so they often delay seeking treatment. The Apple Watch series 4 may offer wearers help with this problem by providing the technology to self-record an electrocardiogram (ECG), which is the traditional first diagnostic step in confirming a heart attack. In small studies, the Apple Watch has reliably produced a 9-lead ECG by having the wearer perform multiple maneuvers to capture the electrical activity of the

heart. According to Dr. Perin, “Larger studies are needed to ensure that the Apple Watch can provide accurate results similar to those obtained with a standard 12-lead ECG in helping to identify or rule out a heart attack.” They suggest developing a procedure that involves only 3 to 4 recordings, to minimize the time required for the ECG and the risk of making mistakes.

The team also reviewed a new class of devices being developed to provide therapeutic options for patients at an intermediate stage of heart failure, who are not ill enough to benefit from mechanical cardiac support but whose disease cannot be controlled with medication. To fill that gap, new device-based treatments are being developed to treat specific pathways in patients with rapidly worsening heart failure; the recent DRI<sub>2</sub>P<sub>2</sub>S classification describes the devices based on their mechanism. The team reviewed the new devices in development and provided updated results of relevant clinical trials and proof-of-concept studies in preclinical models. The majority of these devices were preclinically tested in the center.

### Abdelmotagaly (Abdou) Elgalad, MD, PhD

*Assistant Research Investigator,  
The Texas Heart Institute  
Co-Director, Center for Preclinical Surgical &  
Interventional Research*

Li K, Elgalad A, Cardoso C, Perin EC. Using the Apple Watch to Record Multiple-Lead Electrocardiograms in Detecting Myocardial Infarction: Where Are We Now? *Tex Heart Inst J*. 2022 Jul 1;49(4):e227845. doi: 10.14503/THIJ-22-7845.

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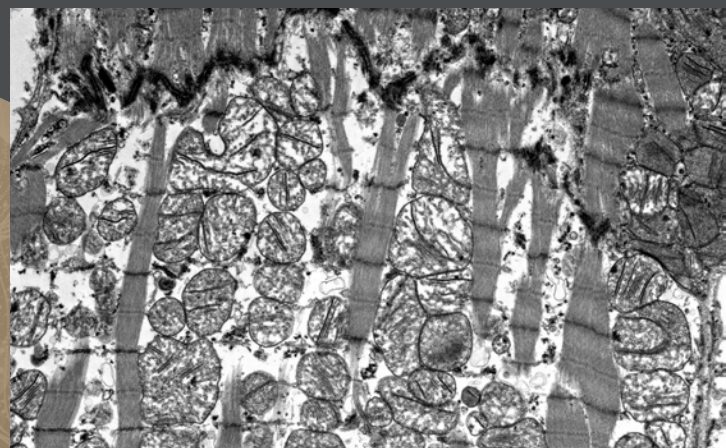
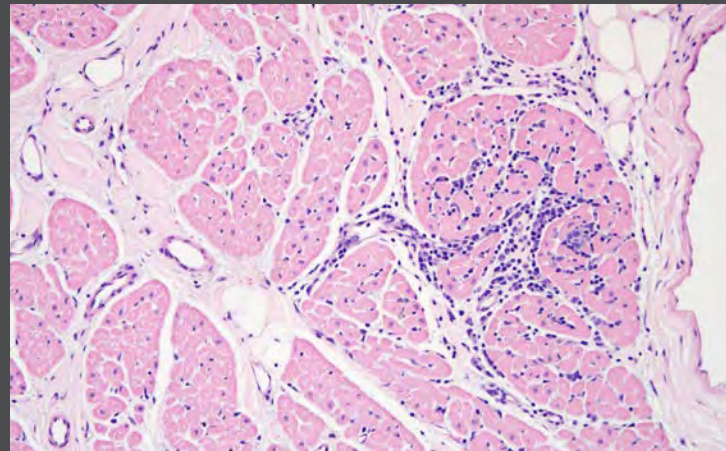


# CARDIOVASCULAR PATHOLOGY RESEARCH

*Advancing Biomedical Research Projects in the  
Texas Medical Center and Beyond*

The Texas Heart Institute Cardiovascular Pathology Research department and core laboratory has been providing specialized pathology and histology services for nearly 40 years. In addition to performing original research, the lab's experts support research projects for investigators within The Texas Heart Institute; from other academic institutions, including several in the Texas Medical Center; and from outside medical companies. The extensively experienced team is directed by the department's Chief, L. Maximilian Buja, MD, and its Administrative Director, Pamela J. Potts.

The Cardiovascular Pathology core provides Good Laboratory Practice (GLP)-compliant services in histology, histochemistry, immunohistochemistry, histopathology, electron microscopy, Faxitron radiography, and computer-aided morphometry and image analysis. The group has over 25 years of experience with scanning electron microscopy (SEM) and transmission electron microscopy (TEM). SEM is available in both low-vacuum and high-vacuum forms, and the TEM service is Clinical Laboratory Improvement Amendments (CLIA)-certified for diagnostic testing of human samples.



*Left: Ralph Nichols, EM Coordinator, operates the TEM scope. Top right: Hematoxylin and eosin (H&E)-stained section of porcine heart showing inflammatory cell infiltration in the sub-epicardium. Bottom right: TEM image, myofiber with myocytolytic changes.*





## L. Maximilian Buja, MD

*Chief, Cardiovascular Pathology Research  
Research Scientist Member, The Texas Heart Institute  
Professional Staff*



Although the facility was originally founded to support the pathology needs of investigators at The Texas Heart Institute, the Cardiovascular Pathology core's role in assisting outside research has greatly expanded over time. Deborah C. Vela, MD, MS, an Associate Research Investigator in the department, recently shared that a significant portion—approximately 80%—of the core's work is now performed for collaborators and clients beyond The Institute. As they pursue improved and expanded treatment options for patients, numerous research teams at The Institute and across the country have successfully leveraged the core's services to advance their efforts. Examples of ongoing cardiovascular research studies include trials of a gene therapy for

Danon Disease, a genetic disorder that can cause weakening of the heart muscle; a project on immune checkpoint inhibitor myocarditis, an inflammation of the heart muscle associated with the cancer treatment; studies of mitochondrial maturation in the aorta; and characterization of acute and chronic clot tissue in deep vein thrombosis. Because the group has established a strong reputation for the quality of its histopathological and electron microscopy studies, its services are increasingly sought by biomedical researchers in fields beyond cardiovascular medicine. These projects broaden the core's pivotal role in supporting research and medical advances.



*Celebrating*  
**CLINICAL  
CARE**









# Introducing The Texas Heart Institute Center for Cardiovascular Care



**Eduardo Hernandez, MD**

*President, The Texas Heart Institute Center for Cardiovascular Care*

*“The opening of The Texas Heart Institute Center for Cardiovascular Care brings together a level of expertise that attracts local, regional, and international patients. In our enhanced, state-of-the-art space, we’ll continue to enroll patients in leading clinical research studies, as well as serve as a vital teaching location for our trainees and a resource for other cardiologists and cardiac surgeons seeking expert opinions for their most challenging cases.” - Eduardo Hernandez, MD*


On December 6, 2022, the leadership of The Texas Heart Institute and its clinical care practice announced that the Texas Heart Medical Group had changed its name to The Texas Heart Institute Center for Cardiovascular Care.

The name change of the direct patient-care offering, which was launched in October 2020, signifies that the practice provides more value to patients than a traditional medical group. Over the past six decades, The Texas Heart Institute has been internationally recognized for delivering exceptional clinical care in a sophisticated, patient-centered atmosphere. The physicians and surgeons of The Texas Heart Institute Center for Cardiovascular Care are now fully integrated with The Institute, providing world-class care in addition to the newest and most innovative treatments for heart and vascular disease. The physicians’ first-hand access to The Institute’s pioneering research, training, and education benefits patients.

The name change also signals a moment of recommitment from the renowned cardiac institution to move towards a future with an increased focus on preventive cardiology—and to ensure that The Texas Heart Institute Center for Cardiovascular Care remains a leader within the field.

The practice includes 15 physicians specializing in all areas of cardiac care and vascular disease, including programs focused on general and preventative cardiology, heart valve care, coronary artery disease, cardiac arrhythmias, heart failure, aortic aneurysms, peripheral vascular disease, and vein care. The practice also includes a Women’s Heart Center that treats heart conditions arising during pregnancy, as well as other heart and vascular conditions that disproportionately affect women. Physicians at The Texas Heart Institute Center for Cardiovascular Care are also experienced in the use of minimally invasive treatments such as transcatheter aortic valve replacement (TAVR) procedures.





# Delivering the Future of Cardiovascular Care Today

## *Practice Unveils New Clinic Suite*

The announcement, which was broadcast live to The Texas Heart Institute community, was made from a brand-new clinic space. Aligned with the name change, the multidisciplinary cardiovascular center moved to a newly renovated location on the 26th floor at 6624 Fannin Tower on December 7, 2022. The new office nearly doubles the existing clinic's footprint and is designed to enhance and personalize a patient-centric experience, while providing state-of-the-art technology. A formal ribbon-cutting ceremony for the space is planned for

early 2023.

“We remain steadfast in our mission to improve cardiovascular health through trailblazing research, thought leadership, education, and patient care. With an emphasis on quality, a spirit of inquiry and discovery, and a willingness to take bold action, today we have furthered our vision to deliver the future of cardiovascular care with the opening of our newly renovated center and announcement of our new name,” said Joseph G. Rogers, MD, President and CEO of The Texas Heart Institute.



# EXPERT PHYSICIAN HIRES EXPAND CLINICAL PRACTICE IN 2022

In June 2022, the Texas Heart Medical Group, now The Texas Heart Institute Center for Cardiovascular Care, announced that Drs. James Livesay, Charles Hallman, and Jennifer Cozart from Surgical Associates of Texas, P.A., had joined the practice. “Our surgeons are experienced members of the surgical team founded by Dr. Denton A. Cooley at the world-renowned Texas Heart Institute in Houston’s Texas Medical Center,” said Eduardo Hernandez, MD, President of the practice. “Over the years, this team performed more than 115,000 open-heart surgeries, a record unmatched by most surgical teams around the world.”

Dr. Livesay received his medical degree from Baylor College of Medicine (BCM) and completed a general surgery residency and research fellowship in cardiac physiology at UCLA. After completing a thoracic and cardiovascular surgery residency at The Institute under Dr. Cooley’s mentorship, Livesay joined Cooley’s surgical group in 1981.

Dr. Hallman completed medical school at BCM and is also a graduate of the cardiovascular surgery program founded by Dr. Cooley. He has been a member of The Institute’s Professional Staff since 1992 and is the faculty director of the Cardiovascular Surgery Fellowship Program at The Institute and Baylor St. Luke’s Hospital.

Dr. Cozart earned her medical degree and completed a general surgery residency at The University of Texas Medical Branch at Galveston. She then completed a cardiothoracic surgery residency at The Institute and BCM. In 2011, she joined Surgical Associates of Texas and The Institute’s Professional Staff. She recently developed and implemented a Hybrid Atrial Fibrillation Program in collaboration with cardiac electrophysiology colleagues.

“Dr. Cooley made it his life’s work to conquer the challenges of cardiovascular disease



*Nikolaos A. Diakos, MD, PhD, is an interventional cardiologist and specialist in heart failure.*





*“Drs. Livesay, Hallman, and Cozart bring remarkable surgical expertise and innovation...their commitment to excellence and quality aligns perfectly with our practice and brings a critical dimension to the care we provide.” - Joseph G. Rogers, MD*

through research, education, and clinical care, and these attributes remained the foundation and character of the Surgical Associates of Texas, P.A., practice,” said Dr. Livesay.

Dr. Nikolaos A. Diakos, an interventional cardiologist and specialist in heart failure and mechanical cardiac support, joined the practice in September 2022. “Dr. Diakos strengthens our longstanding commitment to clinical excellence in the modern diagnosis and management of heart failure and the use of the most contemporary and innovative tools to treat patients with coronary artery disease,” said Dr. Hernandez.

Dr. Diakos received his medical and doctoral de-

grees from the University of Athens. He completed a translational research fellowship and a residency in internal medicine at the University of Utah, a clinical and research fellowship in cardiovascular disease at Tufts Medical Center, a fellowship in advanced heart failure and transplantation at New York Presbyterian Hospital-Columbia University, and interventional cardiology training at Montefiore Medical Center, Bronx, New York.

“Dr. Diakos has remarkable clinical and research expertise that aligns with our mission and vision of delivering the highest quality care and maintaining a culture of innovation, discovery, and excellence in patient care,” added Dr. Joseph G. Rogers.



# SAVING LIVES DURING THE COVID CRISIS

*Texas Medical Center's Extracorporeal Membrane Oxygenation Specialists Team Up*

*“We had daily conference calls to ensure that all three institutions had enough beds, equipment, and staff to provide ECMO to every patient who needed it.”*

*- Subhasis Chatterjee, MD*







## Multi-institutional Coordination to Care for the Sickest Patients

From the early stages of the COVID-19 pandemic, critical care medicine professionals on clinical teams across the Texas Medical Center (TMC) collaborated to provide life-saving support to severely ill patients with the virus. In 2022, the cooperating hospital systems published their experience with the use of extracorporeal membrane oxygenation (ECMO) in patients with respiratory failure due to COVID.

COVID-19's deadliest effect on the human body is lung damage, with fatalities often resulting from pneumonia and acute respiratory distress syndrome caused by the virus. Patients with the most severe

cases of COVID develop pulmonary failure to the point that they can no longer get enough oxygen even with mechanical ventilation. Their best chance of survival is the use of ECMO: a technique of pumping blood out of the body, removing carbon dioxide, adding oxygen, and reinfusing the blood, essentially taking over the function of the lungs. This treatment requires specialized equipment and personnel with special training.

For this reason, the COVID-19 pandemic created a crisis in the TMC. Many COVID patients came here for treatment, but only a few TMC hospitals could provide ECMO.

To meet the needs of patients with severe COVID, ECMO specialists in the TMC's three largest hospital systems—St. Luke's, Houston Methodist, and Memorial Hermann—collaborated to ensure that all patients who needed ECMO could receive it. Dr. Subhasis Chatterjee, a cardiothoracic surgeon/intensivist with Baylor-St. Luke's Medical Center and a member of The Texas Heart Institute's Professional Staff, was one of the leaders of this effort.

"We had daily conference calls to ensure that all three institutions

had enough beds, equipment, and staff to provide ECMO to every patient who needed it," said Dr. Chatterjee. "If one hospital's ECMO facilities were at capacity, patients could be directed to a different one. We also talked about selection criteria, techniques and strategies for cannulating patients, and the lessons we were learning as we went. Above all, this was a team effort at each center with nurses, perfusionists, intensivists, and the cardiologists and surgeons involved. We had to collaborate within our hospital and within the TMC."

Between March 15 and May 30, 2020, the three hospitals used ECMO to support 35 patients with severe hypoxemic respiratory failure due to COVID, with 23 of those surviving to hospital discharge. All of them were still alive 1 year later. "Given that these were the most desperately ill COVID patients, a sixty-six-percent survival rate is impressive," Dr. Chatterjee said, noting that ECMO patients in the subsequent, Delta variant-driven wave had a much higher mortality rate. "Nonetheless, our collaboration kept a lot of patients alive who might not have survived otherwise."

### Subhasis Chatterjee, MD, FACS

*Department of Cardiovascular Surgery,  
The Texas Heart Institute*

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



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# CONTINUING A TRADITION OF EXCELLENCE

## *The Institute Welcomes Cardiothoracic Surgeons, Drs. Moon and Barron*

In February 2022, Marc Moon, MD, was named Chief of the Division of Cardiothoracic Surgery at Baylor College of Medicine, Chief of Adult Cardiac Surgery section at Baylor St. Luke's Medical Center, and Chief of Adult Cardiac Surgery at The Texas Heart Institute. He is a member of The Institute's Professional Staff and has been honored by the St. Luke's Foundation as the Denton A. Cooley, MD, Chair in Cardiac Surgery. Dr. Moon came to Houston from Washington University School of Medicine in St. Louis, where he served as chief of cardiac surgery and led multiple clinical programs. He specializes in aortic and valve surgery and performs some of the most complex cardiac surgeries, including cardiac procedures in pregnant women. He is also a leading advocate for diversity in the field of cardiac surgery.

"Dr. Moon is a world-class surgeon, and we are excited

to welcome him to our department and division," said Dr. Joseph Coselli, Vice Chair of Surgery at BCM. "We know he will contribute to and support our leadership in a way commensurate with the reputation and history of the department."

"I'm excited to be joining these three institutions," said Moon. "I have spent my career to date at some of the most historic cardiac centers in the world, but none compared to the heritage of it all here at Baylor College of Medicine, Baylor St. Luke's, and The Texas Heart Institute. We have come to the point where cardiac surgery is considered routine in many circumstances, but it's never routine for the patient who's undergoing that operation. It's our duty as cardiothoracic surgeons in an academic medical center to continue to advance the field and develop new research to make it even safer for the future."





## Clinical Expertise and Leadership for an Evolving Specialty

Emphasis on Patient Care and Educating the Next Generation of Surgeons

Dr. Moon completed his medical training at Wayne State University School of Medicine and went on to train at the Medical College of Wisconsin, Stanford University School of Medicine, and the University of Oxford. He served as president of the American Association for Thoracic Surgery, considered the world's most prestigious professional society for cardiothoracic surgery, in 2020. Dr. Moon is also a member of numerous national and international scientific organizations, including the American College of Surgeons and the Society of Thoracic Surgeons.

“Cardiothoracic surgery is an incredible field to be a part of and I’m looking forward to the future and

learning what we’re going to be doing 25 years from now that we’re not doing now. Moving forward, cardiothoracic surgery is going to continue to become more complex, but less invasive at the same time. The combination of those two makes the field very unique,” Moon said.

“Dr. Moon’s remarkable clinical expertise coupled with his outstanding abilities to collaborate, mentor, and lead are in keeping with the rich history of cardiac surgery at The Texas Heart Institute, Baylor College of Medicine, and Baylor St. Luke’s Medical Center,” said Dr. Joseph G. Rogers.

Lauren Barron, MD, also joined the Baylor College of Medicine’s Division of Cardiothoracic Surgery in 2022. She specializes in coronary artery bypass grafting, aortic surgery, aortic valve surgery, and alternative access transcatheter aortic valve surgery. A native Texan, Dr. Barron earned her bachelor’s degree from Hawai’i Pacific University in Honolulu and her medical degree from Texas A&M Health Science Center in College Station. She then completed her training with a surgical residency at Washington University School of Medicine, a National Institutes of Health-funded research fellowship, and cardiothoracic surgery fellowships at Washington University and The Royal College of Surgeons of Edinburgh. Dr. Barron serves as Assistant Program Director, Education Research in Baylor College of Medicine’s Department of Surgery and is a Physician Associate member of The Institute’s Professional Staff.



**Lauren Barron, MD**

*Assistant Professor of Surgery,  
Baylor College of Medicine*

*Physician Associate, Cardiothoracic Surgery,  
The Texas Heart Institute Professional Staff*





*Celebrating*

**CLINICAL**

**EDUCATION**





TEXAS HEART INSTITUTE  
School of Perfusion Technology  
certifies that  
**Kyle Samuel Guster**  
has successfully completed the  
Post-Baccalaureate Course in Perfusion Technology  
June 18, 2022

TEXAS HEART INSTITUTE  
School of Perfusion Technology  
certifies that  
**Zachary Daniel Warts**  
has successfully completed the  
Post-Baccalaureate Course in Perfusion Technology  
June 18, 2022

TEXAS HEART INSTITUTE  
School of Perfusion Technology  
certifies that  
**Duc Nguyen**  
has successfully completed the  
Post-Baccalaureate Course in Perfusion Technology  
June 18, 2022

TEXAS HEART INSTITUTE  
School of Perfusion Technology  
certifies that  
**Kelsey Anne Greiner**  
has successfully completed the  
Post-Baccalaureate Course in Perfusion Technology  
June 18, 2022

TEXAS HEART INSTITUTE  
School of Perfusion Technology  
certifies that  
**Sydney Kor**  
has successfully completed the  
Post-Baccalaureate Course in Perfusion Technology  
June 20, 2022





# CARDIOVASCULAR DISEASE FELLOWSHIP

*Training the Future Leaders of Cardiovascular Care*

Over the past six decades, The Texas Heart Institute's cardiology and advanced subspecialty fellowship programs at Baylor St. Luke's Medical Center have been some of the most prestigious training grounds in the country. The fellowship has graduated over 490 fellows since its inception in 1962. Fellows originally trained for two years, but now train for three years in the general cardiology program, which is currently led by Program Director, Dr. Stephanie Coulter, and Associate Program Director, Dr. George Younis.

From their first day in the program, the fellows are exposed to the newest diagnostic and therapeutic technologies in cardiovascular care and are trained in every relevant procedure.

Many pursue additional study in one of the many subspecialty disciplines that make up the complex field of cardiology.

On June 10, 2022, the program celebrated 13 talented graduates—six in General Cardiology and seven with additional training through subspecialty fellowships in Interventional Cardiology (three graduates; led by program director Dr. R. David Fish), Electrophysiology (two graduates; led by program director Dr. Mohammad Saeed), and Advanced Heart Failure and Transplant Cardiology (two graduates; led by program director Dr. Andrew Civitello). Of the six General Cardiology graduates, five will continue their subspecialty training at The Institute.



*Graduating fellows celebrated with their families and faculty mentors at the June 2022 investiture ceremony.*



*“By the time they complete the three-year program, they have participated in all clinical interventions and followed patients from consult to post-op. They understand every type of intervention’s complexities, risks, and potential complications. They know what to do and how to do it. They also know what not to do and why.”*

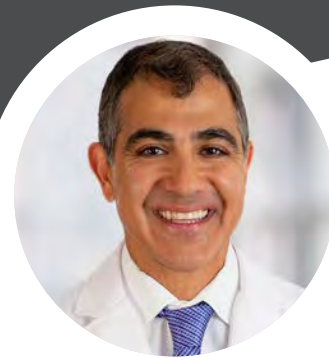
*- George Younis, MD*



**Stephanie Coulter, MD, FACC, FASE**  
*Program Director, Cardiovascular Disease Fellowship  
Director, Cardiology Education*

General cardiology program graduate Dr. Mitch Tan was honored as the Tauber Outstanding Fellow of the Year. He will complete an additional two years of training through The Institute’s advanced fellowship in Electrophysiology.

In July 2022, the programs welcomed six incoming first-year Cardiology fellows and one new Advanced Heart Failure fellow. Fellows are exposed to the latest technologies available in cardiovascular care, including both durable and short-term percutaneous devices, 3D echocardiography imaging, advanced fluoro-less electrophysiology studies utilizing 3D mapping systems, and progressive transcatheter aortic valve replacement (TAVR) protocols developed at The Institute. According to Dr. Younis, “Fellows receive hands-on experience from day one of their fellowship. The fellows benefit from excellent procedural



**George Younis, MD**  
*Associate Program Director,  
Cardiovascular Disease Fellowship*

volumes and clinical experience with a variety of pathologies from the diverse Houston-area population.”

For Match Day 2022, the fellowship announced the names of six exceptional young physicians who will matriculate in July 2023. The fellowship program at The Institute recruits from the top medical residency programs in the country, attracting 80 percent of the candidates applying for cardiology fellowships in the United States—about 925 applicants vying for just six training spots.

“Physicians who come to The Texas Heart Institute for training seek a learning environment where they can train in every aspect of cardiovascular medicine—patient care as well as research and education—in a collaborative, intellectually-stimulating clinical environment where they learn in real time, on real cases,” said Dr. Coulter.

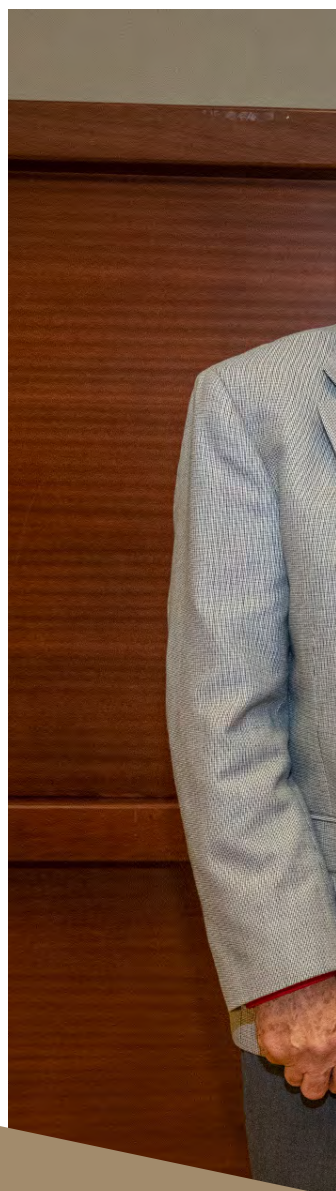


# School of Perfusion Technology

## Celebrating 50 Years of Perfusion Innovation

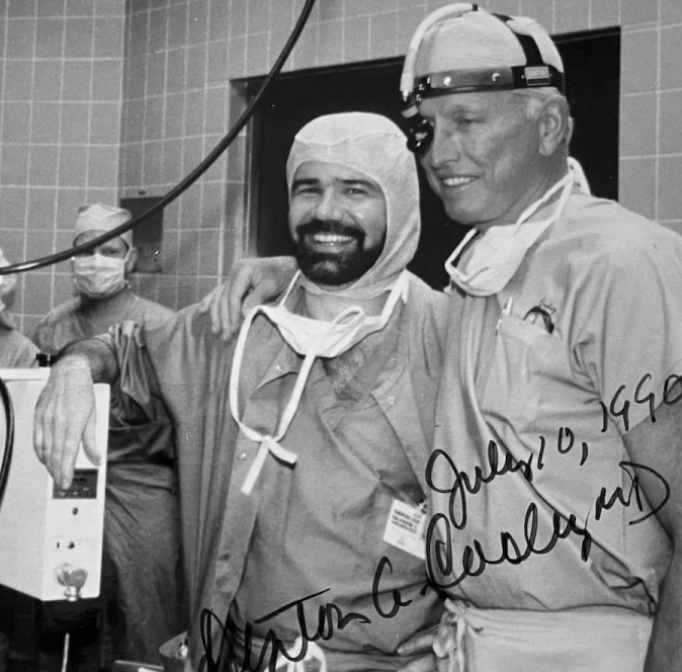
In 2022, The Texas Heart Institute School of Perfusion Technology celebrated the 50th anniversary of the school's founding and commemorated the historic event at its Annual Perfusion Conference, held on June 2-4, 2022. The professional education conference provides a forum for expert presentations by the school's leadership, faculty, students, alumni, collaborating physicians, and visiting perfusionists. In addition to the event's many technical presentations, Terry Crane, CCP Emeritus and the school's former Director, gave an overview of the training program's early history and milestone achievements. Dr. Denton A. Cooley originally recognized the need for well-trained professionals to operate the heart-lung machines used during cardiac surgery, so he hired perfusionist and instructor Charles C. (Charlie) Reed to lead a new training program they established together in December 1971. The original class of four students started in January 1972. Crane also described the evolution of the field, from the Cooley "Coffeepot" oxygenator, constructed from restaurant-supply items, to the modern perfusion equipment used today. Deborah Lowery Adams, MA, LP, CCP, the current Director, highlighted the school's key role in developing the national accreditation and certification standards for perfusionists. In a special part of the conference, Crane and Adams presented a memorial bronze bust of Charles C. Reed to his son, Charles Reed, PhD, RN, CNRN.

The 50th anniversary provided an opportunity for the Perfusion School family to reflect on its accomplishments and honor the individuals integral to its success; however, the school remains steadfastly focused on the future of perfusion technology and providing excellence in patient care. The nationally recognized post-baccalaureate certificate training program celebrated the graduation of 13 students in 2022, with 6 graduates in June and 7 graduates in December. The 18-month program educates students on the use of the cardiopulmonary bypass machine and other equipment associated with open-heart surgery, preparing them to work in cardiovascular surgery suites throughout the country. "We're incredibly proud of this excellent group of students, and we're happy to share that each graduate has secured a position that will allow them to use their training to help surgical patients," said Adams.



**Deborah Lowery Adams, MA, LP, CCP**  
*Director and Clinical Coordinator  
School of Perfusion Technology*

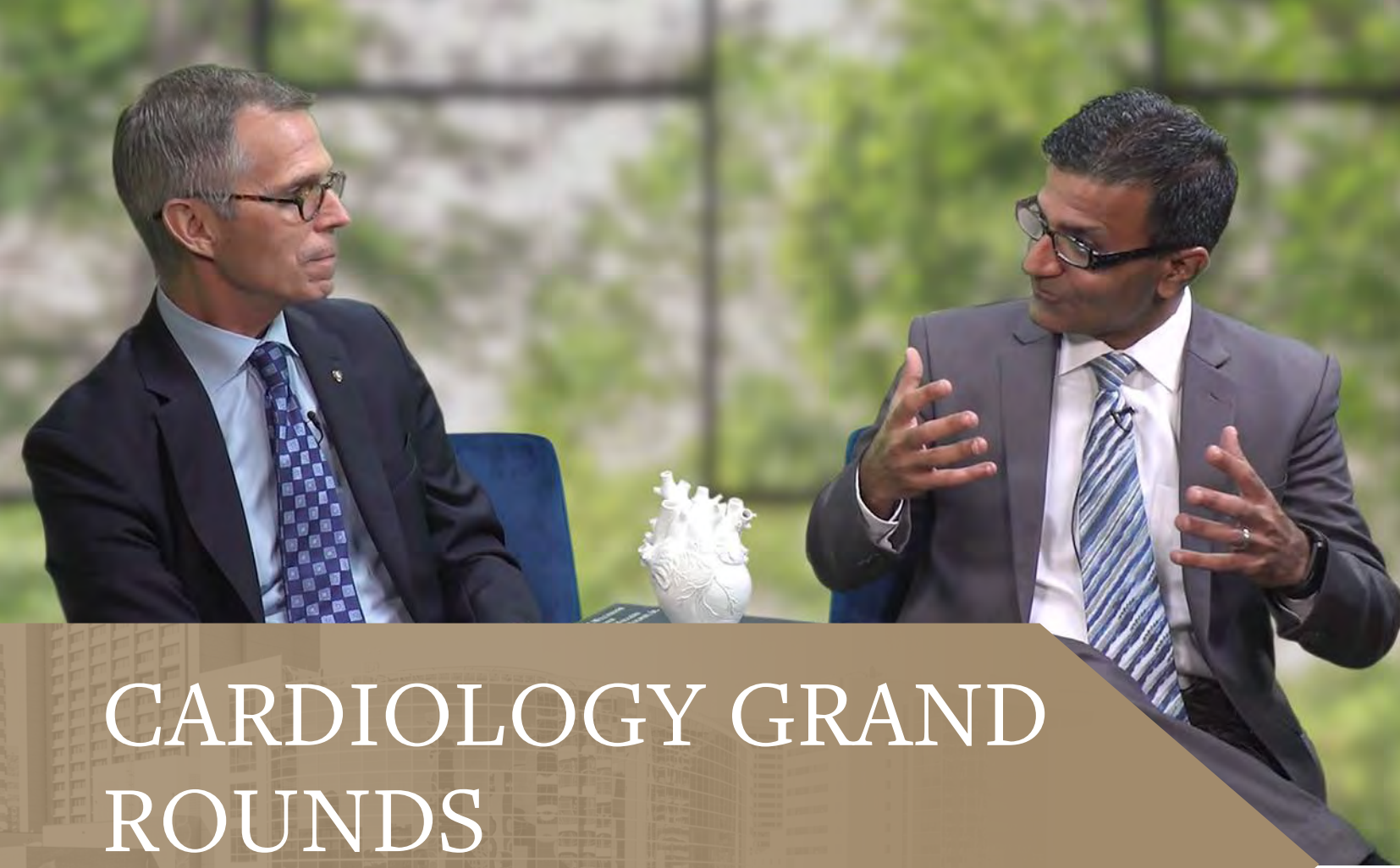




## Inaugural Sal Guercio Memorial Scholarship

On June 3, 2022, the Perfusion School honored Kyle Guster with the inaugural Sal Guercio Memorial Scholarship. The award celebrates the memory of Sal Guercio—Perfusion School alumnus (Class of 1987), staff perfusionist for 27 years, and respected clinical instructor—and recognizes an outstanding student enrolled in the program. Ann Guercio, CCP, LP, MBA, who championed the creation of the scholarship to honor her late husband's commitment to teaching, led the scholarship's selection committee and presented the award. "The committee and I were impressed with all the applicants. In talking to the perfusion staff and surgeons, Kyle emerged as the front runner who best embodied Sal's attributes towards THI and Perfusion Education," she said. Guster is a member of the school's June 2022 graduating class. Before enrolling, he worked as a perfusion assistant for two years; this experience furthered his appreciation of the teamwork necessary within an operating room to achieve the best possible patient care, which he cites as "the ultimate goal." Having worked with perfusionists trained by Mr. Guercio, Guster hopes to carry on his legacy of sharing knowledge and shaping careers.





# CARDIOLOGY GRAND ROUNDS

## *The Texas Heart Institute Tradition Returns in 2022*

In keeping with The Texas Heart Institute's strong commitment to education, its accredited Office of Continuing Medical Education (CME) offers a range of weekly seminars, annual symposia, and special events to provide emerging clinical information to healthcare professionals. The Institute's Cardiology Grand Rounds is an esteemed tradition that attracts leading experts in cardiovascular medicine and science from around the world. The weekly seminar series provides an opportunity for the audience to learn from leading medical and surgical experts on the latest advances in cardiovascular care. Attendees also hear from scientists and engineers whose discoveries lead to the development of new cardiovascular therapies and devices. The COVID-19 pandemic temporarily halted this professional fellowship. To maintain its educational

programs in the absence of in-person meetings, The Institute successfully adopted virtual-conference approaches to continue its professional training and fellows' education. Applying this experience, Grand Rounds resumed in January 2022, initially using a virtual-conference approach. Throughout the season, presentations transitioned from Zoom/Vimeo conferences to hybrid events, which combined webcasts of the presentations—either live in the Denton A. Cooley Auditorium or from the speaker's home institution—with limited in-person seating. The webcast format also broadened the weekly conference's reach, including viewers from across the country and from the nationwide CommonSpirit Health system, with which Baylor St. Luke's Medical Center is affiliated. The presentations are available online for on-demand CME credit.





## “Inside the Studio” Debuts

### Interview Series Highlights Latest Developments in Cardiovascular Care and Science

The 2022-2023 Cardiology Grand Rounds season launched on September 16, 2022, and has continued to use the hybrid presentation format to educate both in-person and remote audiences. In conjunction with the new season, The Institute debuted a new “Inside the Studio” video series. In each episode, President and CEO Joseph G. Rogers, MD, interviews guests visiting The Institute, including leaders in cardiovascular medicine, biomedical science, and the community.

Visiting Grand Rounds speakers have used these discussions with Dr. Rogers to highlight the greater implications of their presentations and emphasize what they hope clinical practitioners—and for some topics, the public—should take away as key points. The interviews are designed to amplify current trends in research, education, and collaborations aimed to improve health. Episodes from the Fall 2022 series included interviews with Dr. John Mandrola of Baptist Health Louisville, Dr. Ourania Prevezza of Baylor St. Luke’s Medical Center, Dr. Salim Virani of Baylor College of Medicine, Dr. Ambarish Pandey of UT Southwestern Medical Center, Dr. Carolyn Lam of Duke-National University of Singapore, and Dr. Robert Lustig of UC San Francisco. Darren Woodside, PhD, Vice President of Research, has also contributed to the series by interviewing visiting research experts who specialize in cardiovascular science and hope to translate their basic research findings into new therapies for patients with heart and vascular disease. His first guest was Dr. Anthony B. Firulli of Indiana University School of Medicine. These conversations often underscore the importance of the “bedside to bench to bedside” research process in which clinical need drives

discovery science and translational research advances.

Furthermore, as an extension of The Institute’s community outreach efforts, special episodes of “Inside the Studio” feature conversations between Dr. Rogers and leaders of Houston-area nonprofits, healthcare institutions, and academic institutions. These discussions centered on efforts to improve community health and healthcare equity, particularly through accessible fitness options like Fit Houston’s #WALK30 walking campaign. For these episodes, Dr. Rogers interviewed Stephen Ives, MBA, President and CEO, Greater Houston YMCA; Dr. Ann Barnes, President and CEO, Episcopal Health Foundation; Dr. Roberta Schwartz, Executive Vice President and Chief Innovation Officer, Houston Methodist Hospital; Claudia Aguirre, CEO and President, Baker Ripley; Lisa Wright, CEO and President, Community Health Choice; and Reginald DesRoches, President, Rice University.



**Keri Sprung, MBA**  
*Vice President for  
 Communication and Education*





# The Texas Heart Institute Journal

## Inaugural James T. Willerson, MD, Editor's Choice Awards



**Zvonimir Krajcic, MD**

*Editor-in-Chief*

*The Texas Heart Institute Journal*

For nearly 50 years, *The Texas Heart Institute Journal* has been published as part of The Institute's medical education program. The bimonthly, peer-reviewed journal is read by a global audience of physicians, scientists, and healthcare professionals who contribute to the prevention, diagnosis, and treatment of cardiovascular disease. *The Journal* has been an online-only publication since 2014, with the full archive available at PubMed Central.

In 2022, Joseph G. Rogers, MD, was appointed to the position of Associate Editor and Briana Costello, MD, became *The Journal's* first Social Media Editor.

On June 17, 2022, *The Texas Heart Institute Journal* presented its inaugural James T. Willerson, MD, Editor's Choice Awards to three groups of authors to recognize outstanding articles published in *The Journal* in 2021. Dr. Zvonimir Krajcic, *The Journal's* Editor-in-Chief, and Dr. Joseph G. Rogers, Associate Editor and The Institute's President and CEO, presented the awards at a special Cardiology Grand Rounds in the Denton A. Cooley Auditorium.

The Editor's Choice Awards were created to honor Dr. Willerson, *The Journal's* former Editor-in-Chief and The Institute's President Emeritus who, until his passing in the fall of 2020, remained committed to providing physicians and healthcare professionals with information related to all aspects of treating patients who have cardiovascular disease. Dr. Willerson's standards for excellence in research and scientific publishing were unsurpassed, and today *The Journal's* readership continues to grow because of the strong foundation he and his predecessors built.

The Editor's Choice Awards are made possible by The Texas Heart Institute Board of Trustees and a gift from Morton Cohn. The winning articles exemplify *The Journal's* intended purpose to provide physicians and healthcare professionals with quality and timely information related to the treatment of patients with some of the most complex cardiovascular conditions. "The purpose of this award is to acknowledge excellence in scientific discovery and medical writing," said Dr. Krajcic. "Dr. Willerson was truly one of the greatest beacons as far as Texas Heart Institute is concerned...he published many books and manuscripts, he was a researcher and a scientist, but above all, he was an excellent physician and took good care of his patients. Very few of us will achieve the accolades and recognition that Dr. Willerson achieved in his lifetime."

"*The Texas Heart Institute Journal* has a long and storied history of providing clinically meaningful contributions to the medical literature. *The Journal* also encourages new authors to submit original work and gain experience with the medical publication process," stated Dr. Rogers.





The top image shows three men standing in front of a wood-paneled wall. The man on the left is wearing a blue suit and a red patterned tie. The man in the center is wearing a dark suit, glasses, and a red and blue striped tie, and is holding a framed certificate that reads "WILLERSON, MD" and "AWARD". The man on the right is wearing a white lab coat with "TEXAS HEART INSTITUTE" on it and a stethoscope. A large grey graphic of a hand pointing to the right is overlaid on the image.

# Winning Articles for 2021

*Continuous-Flow Left Ventricular Assist Device Support in Patients with Ischemic Versus Nonischemic Cardiomyopathy*  
Chou BP, Critsinelis A, Lamba HK, Long G, Civitello AB, Delgado RM, Chatterjee S.

*Tex Heart Inst J.* 2021 Sep 1;48(4):e207241. doi: 10.14503/THIJ-20-7241.

Among cardiomyopathy patients supported by a continuous-flow LVAD, ischemic versus nonischemic cardiomyopathy appeared to have little relationship to outcomes save that ischemic cardiomyopathy was associated with more frequent gastrointestinal bleeding.

*“Simple” Transcatheter Aortic Valve Replacement With Conscious Sedation: Safety and Effectiveness in Real-World Practice*  
Postalian A, Strickman NE, Costello BT, Dougherty KG, Krajcer Z.

*Tex Heart Inst J.* 2021 Sep 1;48(4):e207528. doi: 10.10453/THIJ-20-7528.

A fast-track method of selecting and treating patients who require transcatheter aortic valve replacement (TAVR) produced outcomes comparable to those of standard TAVR performed at other centers.

*Ultrafast Computation of Left Ventricular Ejection Fraction by Using Temporal Intensity Variation in Cine Cardiac Magnetic Resonance*

Pednekar AS, Cheong BYC, Muthupillai R.

*Tex Heart Inst J.* 2021 Sep 1;48(4):e207238. doi: 10.14503/THIJ-20-7238.

A new algorithm for acquiring and processing cardiac magnetic resonance with minimal user interaction method produced comparable clinical results to those of standard, manual processing.



# INAUGURAL GLOBAL CARDIOVASCULAR FORUM

*Showcases Excellence in Continuing Medical Education*



**Joseph G. Rogers, MD**

*President and CEO,  
The Texas Heart Institute*

*John M. O'Quinn/James T. Willerson, MD,  
Endowed Chair in Cardiology*

VIRTUAL SYMPOSIUM

*Inaugural*

## **GLOBAL CARDIOVASCULAR FORUM**

CELEBRATING 60 YEARS OF EXCELLENCE  
AT TEXAS HEART INSTITUTE

**FEB 12, 2022**

[texasheart.org/globalforum](https://texasheart.org/globalforum)

*Presented by Texas Heart Institute at Baylor St. Lukes Medical Center*



**Baylor St. Luke's  
Medical Center**

Baylor  
College of  
Medicine



TEXAS HEART<sup>®</sup> INSTITUTE







## Collaboration Reaches International Audience of Cardiovascular Care Professionals

Commitments to excellence in education and patient care are hallmarks of The Texas Heart Institute's mission. In keeping with these goals, and as part of its 60th anniversary celebration, The Institute's leadership and Office of Continuing Medical Education (CME) collaborated with the Baylor St. Luke's Medical Center Cardiovascular Service Line and International Office to host the inaugural Global Cardiovascular Forum on February 12, 2022. Drs. Joseph G.

Rogers and Juan Carlos Plana led the effort as the program's Course Directors.

The partnership focused on providing targeted updates on recent changes to the practice of cardiology for a national and international audience of medical professionals who care for patients with cardiovascular disease. The half-day event, held on Zoom, leveraged the CME Office's experience with hosting virtual educational symposia, honed by necessity during the COVID-19 pandemic and now used to provide broader access to The Institute's professional educational offerings.

Presentations from invited faculty affiliated with The Institute, Baylor St. Luke's Medical Center, and Baylor College of Medicine focused on guideline-directed care, integrative cardiology, and special considerations in cardiovascular disease. The talks highlighted new guidelines, new

approaches, new technologies, and new procedures for cardiovascular patient care. Physician experts provided updates on topics that included heart failure management, heart disease in women, percutaneous management of valvular diseases, minimalist approaches to transcatheter aortic valve replacement (TAVR), and others.

Panel discussions at the end of each session were led by members of The Institute's Professional Staff in conjunction with international physicians, including those from Latin America and the Middle East, who joined virtually to contribute their perspectives on recent developments in patient care. Over 200 viewers from 33 countries participated in the Zoom event. Based on the success of the symposium, the Global Cardiovascular Forum will become an annual educational offering.

### Juan Carlos Plana Gomez, MD

*Chief, Cardiovascular Service Line,  
Baylor St. Luke's Medical Center*

*Don W. Chapman, MD, Endowed Chair of  
Cardiology, Baylor College of Medicine*





*Celebrating*

**CAREERS**





**G. Howard Frazier**  
CARDIOVASCULAR &  
Attending Physician  
Baylor St. Luke's Medical  
OH St. Luke's  
Health  
Oscar  
Frazier, M.D.  
Professor





# An Official Day for Dr. Strickman

## Celebrating 40 Years of Medicine and Teaching

Dr. Neil Strickman, Texas Heart Institute fellowship graduate (1982) and Professional Staff Member, was honored in 2022 by the Mayor of Houston, Sylvester Turner, with *Dr. Neil E. Strickman Day*. Council Member Sallie Alcorn put forward the proclamation, citing Dr. Strickman's 40 years of service to medicine in Houston's Texas Medical Center through his expertise in interventional cardiology and his passion for teaching. His family members and several longtime colleagues were present at City Hall when the Mayor recognized July 19, 2022, in Houston as *Dr. Neil E. Strickman Day*.

Dr. Strickman came to Houston in 1977 after graduating from medical school at SUNY Upstate Medical Center College of Medicine at Syracuse. He completed his residency at the University of Texas Health Science Center at Houston and a cardiology fellowship at The Texas Heart Institute in 1982. Dr. Strickman has taken great care of the hearts of Houstonians and patients from around the country in the Texas Medical Center ever since, making 2022 his 40th year as a practicing cardiologist.

Colleagues celebrated the milestone with a baseball park-themed gathering at Hall-Garcia Cardiology Associates, in keeping with Dr. Strickman's love of sports. On June 10, 2022, Dr. Strickman was recognized by The Texas Heart Institute's 2022 graduating cardiology fellows with the Dr. Robert J. Hall teaching award. This award honors the fellows' favorite instructor and is presented each year by the third-year cardiology fellows. Dr. Strickman's commitment to training was also noted by the city in the proclamation.

Dr. Strickman practices interventional cardiology with interests in peripheral vascular disease, non-surgical aortic valve replacement (TAVR), and non-surgical aneurysm repair (EVAR). He served as co-director of the non-invasive department at St. Luke's Episcopal Hospital from 1982-1985. He is a Clinical Professor of Medicine in Cardiology at Baylor College of Medicine. Dr. Strickman has also been an active member of the International Society for Endovascular Specialists (ISEVS) since 1982.



**Neil E. Strickman, MD, FACC, FSCAI, FACP**

*Interventional Cardiologist, Hall-Garcia Cardiology Associates*

*Physician Member, Cardiology, The Texas Heart Institute Professional Staff*





## Remembering Tomas Klima, MD (1931-2022)

The Texas Heart Institute family was saddened by the passing of its longstanding member, Dr. Tomas Klima, on July 7, 2022. He was a pathologist at Baylor St. Luke's Medical Center (then St. Luke's Episcopal Hospital) and The Institute.

Dr. Klima was born in Baltimore, Maryland in 1931 while his father, a Czech physician, was completing a fellowship. He returned to Czechoslovakia with his parents when he was 10 months old and did not return to the United States for nearly 37 years. Dr. Klima was a Holocaust survivor.

He earned his medical degree in Prague from Charles University and then continued his clinical training there, completing an internship and residency in pediatric pathology. After repeatedly seeking opportunities to further his training in the U.S., Dr. Klima finally received permission to accept a fellowship in pediatric pathology at Texas Children's Hospital in 1968.

After his fellowship, Dr. Klima completed another pathology residency at St. Luke's in 1972 and remained a part of that division for the rest of his medical career. He was a member of the THI Professional Staff and a valued reviewer for *The Texas Heart Institute Journal*. His collaborations with The Institute's cardiologists and surgeons resulted in a wide range of cardiovascular publications. Of the many things that Dr. Klima liked about living in Texas, he said that "Texas friendship in a free America probably says it best." L. Maximilian Buja, MD, Chief of Cardiovascular Pathology Research, shared, "Dr. Klima leaves a legacy of commitment to the ideals of medical professionalism, citizenship, and collegiality. We are thankful for the opportunity to know and learn from him."





# DR. LUFCHANOWSKI

## *Retired After 60 Years in Medicine*

The Texas Heart Institute's Dr. Roberto Lufschanowski announced his official retirement on October 14, 2022. He practiced medicine for over 60 years and cardiology for 52 years, helping patients and families from around the world.

Dr. Lufschanowski completed his fellowship at Baylor College of Medicine and has been associated with The Institute since 1969. Specializing in general and adult congenital heart disease, he was a founding member of the Texas Heart Medical Group in 2020.

Dr. Lufschanowski graduated from

the University of Buenos Aires Medical School in 1960, then completed his internship at Mount Sinai Hospital in Chicago, and his residency at the VA Hospital in Washington, DC. He has been a member of several professional medical societies, published numerous articles and abstracts on cardiovascular disease in peer-reviewed academic journals, and been on the Editorial Board for *The Texas Heart Institute Journal*. He also served on the teaching staff for The Texas Heart Institute Cardiovascular Disease Fellowship.



*Friends and family gathered to celebrate Roberto Lufschanowski, MD.*





*“We all admired his good sense of humor and optimism that helped me, and many others, through challenging situations.” - Zvonimir Krajcer, MD*

“When I came to The Texas Heart Institute as a fellow in 1975, he was one of the first physicians that I had the opportunity to interact with. He taught many of us about patient management and treatment of congenital heart disease – and how to speak proper Spanish. We all admired his good sense of humor and optimism that helped me, and many others, through challenging situations. He is a dear friend whom I will cherish for the rest of my life,” said Dr. Zvonimir Krajcer.

Dr. Lufschanowski’s friends and family gath-

ered to celebrate his career in medicine at a retirement party held on November 18, 2022, in the Ansary Atrium of the Denton A. Cooley Building. Guests wore bow ties to honor Dr. Lufschanowski’s signature style; many of those in attendance were amused to see that he wore a necktie to the event instead. Speeches, stories, and toasts from The Institute’s leadership, family members, and longtime clinical partners highlighted his dedication to his patients, ability to inspire trainees and colleagues, and legendary sense of humor.



*Celebrating*

**TRAINEES**







# Recognizing the Next Generation of Research and Health Care Professionals

In 2022, trainees represented The Texas Heart Institute and its mission through publications, presentations, and outreach—around the world.



## **Rich Gang Li, PhD**

*Cardiomyocyte Renewal Laboratory  
McGill Gene Editing Laboratory*

Postdoctoral Research Associate, Rich Gang Li, PhD, earned the award for “Best Oral Presentation” for his platform talk at the international Weinstein Cardiovascular Development & Regeneration Conference, held May 12-14, 2022, in Marseille, France. The award recognized Dr. Li’s presentation titled “Spatial transcriptomics reveal a colocalized cellular triad required for heart renewal.” He and his collaborators have determined that interactions among at least three specific cell types are needed for heart tissue renewal and repair. The conference brings together experts in cardiac biology and development, contributing substantially to the current understanding of heart formation and congenital heart diseases.

Dr. Li works closely with James F. Martin, MD, PhD, Director of the Cardiomyocyte Renewal Laboratory, and Xiao Li, PhD, Assistant Investigator in the McGill Gene Editing Laboratory. They and their collaborators are using their molecular understanding of heart development pathways to devise new treatments for heart disease, particularly new options for patients with heart damage, like those who have experienced a heart attack, or those who have malformed hearts due to a congenital defect. They are interested in the gene expression programs that regulate heart development, the interactions of various heart and immune cell types within heart tissue, and the ways in which those interactions are disrupted in patients with heart failure. By using state-of-the-art technologies, including single-cell genomics and genome editing, they are investigating the

heart’s responses to injury. These insights will help the team improve heart failure prevention strategies and develop new treatments for heart diseases.

Dr. Li’s work is an integral part of this research effort. At the Weinstein Conference, Dr. Li shared findings about the co-localization of heart cell types within the cardiac microenvironment during regeneration and repair. He explained, “Our findings suggest that at least three types of cells are required for cardiac renewal, specifically cardiomyocyte, fibroblast, and macrophage cell subpopulations. We identified marker genes for these special populations, which allows us to study them further and eventually develop therapies to amplify these pro-renewal cells following cardiac injury.”

The therapeutic potential of these scientific insights is significant. According to Dr. Martin, “Dr. Li is using the most cutting-edge methods to make important discoveries relating to cardiomyocyte renewal. His work will lead to better heart disease treatments in the future.”

Dr. Li also received the second annual Richard A. F. Dixon, PhD, Early-Stage Investigator Award at The Texas Heart Institute’s annual Research Symposium on October 20, 2022. The accolade recognized Dr. Li as the lead presenter among those giving the symposium’s Rapid-Fire Early-Stage Investigator Presentations, for his presentation “YAP Drives Assembly of a Spatially Colocalized Cellular Triad Required for Heart Renewal.”



*“Regardless of how tough it was, I would definitely do it again, and again, and again.”*

*- Frances Lewis, Perfusion Student,  
on her medical mission trip  
to Lebanon*

**Frances Lewis**

*School of Perfusion Technology*



Frances Lewis traveled to Al Rachaya, Lebanon, on a prestigious Perfusion Without Borders (PWOB) scholarship and shared a personal account of her experience, “Turning Passion into Practice,” at the Perfusion School’s annual conference, PerfCon 2022. The scholarship grant was awarded by the American Society of Extracorporeal Technology and enabled her to participate in a medical mission trip led by the Novick Cardiac Alliance, which seeks to provide care to children with congenital or acquired heart disease across the globe. Lewis collaborated closely with an international team of health care professionals and volunteers to provide cardiovascular surgical care to pediatric patients who would not have received treatment otherwise.

The global team of surgeons, perfusionists, nurses, anesthesiologists, medical students, and volunteers performed 13 pediatric cardiovascular surgeries in 14 days, with patients ranging in age from 17 days to 15 years old. Lewis detailed many of the challenges related to delivering care in an economically distressed environment, including mechanical issues with perfusion equipment, a lack of air conditioning, and limited supplies. The problems that she and the team encountered were beyond those normally seen in a well-equipped operating room, and finding solutions required cooperation, extreme flexibility, and advanced problem-solving skills.

Despite these challenges, Lewis emphasized the benefits

of being part of the care team and the continuity of the experience with her patients. “One of the most gratifying aspects of mission trips is that you are not just in the OR; we work with the ICU staff, we work with interventionists, we work with everybody. You see your patient beforehand, and see them after the procedure, and know that they are safe—know that they are doing better.”

Lewis characterized the mission work as “very tough,” but shared the satisfaction that comes from knowing that the team helped many people who would not have received care otherwise, and gratitude for the educational and emotional aspects of the experience. For her future career plans, she said, “I am now thinking about doing international or pediatric perfusion because there are so many other ways to help different people, in different places.”

Deborah Lowery Adams, LP, CCP, the School’s Director and Clinical Coordinator, described the value of Lewis’ scholarship trip, saying, “Frances undertook this mission as a dedicated, service-minded individual with an already global viewpoint. This trip helped broaden her international health care experience and expand her view of her potential career paths. I am extremely proud that she could use her training to help these children and embody the emphasis on excellence that our program instills in our graduates.”



# Celebrating Our Trainees

The Texas Heart Institute continues to honor its impressive group of future health professionals and researchers.



**Matthew Segar, MD, MS**  
*Cardiovascular Disease Fellowship*

In his first two years as a Cardiology Fellow, Matthew Segar, MD, MS, has carried on The Texas Heart Institute's strong tradition of clinical research. First, he represented The Institute at the American College of Cardiology's national meeting, ACC.22, in Washington, DC, held April 2-4, 2022. On behalf of an international team of clinical investigators, Dr. Segar presented a moderated poster in the Prevention and Health Promotion category titled, "Efficacy of ertugliflozin on heart failure hospitalization and HF death across the WATCH-DM risk score: a secondary analysis of the VERTIS CV trial." Dr. Segar's participation in the ACC meeting was part of the organization's Fellows-in-Training (FIT) program, which supports career development for fellows, residents, and medical students.

In July 2022, Dr. Segar and his collaborators were awarded Grand Prize in a research competition hosted by the American Heart Association (AHA) and the Association of Black Cardiologists. The six-month data challenge encouraged researchers to use two AHA resources—AHA's Get With The Guidelines® – Heart Failure Registry and AHA's Precision Medicine Platform—to investigate the relationships between heart failure and health disparities, social determinants of health, and structural determinants of health.

Dr. Segar and investigators at The University of Texas Southwestern Medical Center in Dallas, including Ambarish Pandey, MD, MS, won the challenge's top prize for their study "Impact of Social and Structural Determinants of Health on Hospital Length of Stay Among Heart Failure Patients According To Race." The research team used the AHA registry data to identify key parameters of social determinants of health, at the ZIP code level, that are significantly associated with an extended length of stay following hospitalization for heart failure.

At the AHA's 2022 Scientific Sessions on Saturday, November 5, 2022, Dr. Segar was named the winner of the Samuel A. Levine Early Career Clinical Investigator Award competition by the AHA's Council on Clinical Cardiology for his presentation "Development and Validation of a Phenomapping Tool to Identify Patients With Diuretic Resistance in Acute Decompensated Heart Failure: A Multi-Cohort Analysis." The award recognizes and rewards innovative clinical research by early career investigators and trainees and promotes careers in clinical cardiovascular investigation.

Dr. Segar's work investigates diuretic resistance, which is commonly encountered in clinical practice but remains difficult to predict in patients. His presentation was a continuation of the research he performed at UT Southwestern with Dr. Pandey. Drs. Segar, Pandey, and their co-authors developed a phenomapping tool to help identify patients with acute decompensated heart failure who had a high probability of having diuretic resistance. Using machine learning, they identified key biological factors underlying diuretic resistance in this heart failure population. The research team was the first to identify a diuretic-resistant phenogroup and validate a diuretic resistance clinical risk score to better identify high-risk patients.





## Preston Peak

### *Innovative Device and Engineering Applications (IDEA) Lab*

Preston Peak, a former Student Scholar and now Research Engineer in The Texas Heart Institute's Innovative Device and Engineering Applications (IDEA) Lab, won first place in the Student Design Competition at the American Society for Artificial Internal Organs (ASAI)O's 67th Annual Conference, held in Chicago from June 8-11, 2022. As a finalist in the competition sponsored by the ASAIOfyi (for young innovators) program, Peak gave a platform presentation for his project "A Mock Circulatory Loop Controlled Using a Personalized Elastance Function." The Texas A&M University biomedical engineering major presented his work in a special session with other student finalists at the conference, which provides an annual forum for scientists, engineers, and physicians involved in basic and clinical research to develop innovative medical devices.

Peak's research is mentored by O. H. Frazier, MD, and Yaxin Wang, PhD, and centers on the development of improved methods to test and analyze the performance of cardiac assist devices. Mock circulatory loop testing—the use of a lab-bench based, mechanical testing system that simulates the human cardiovascular system—has become a crucial part of developing new cardiac assist devices such as ventricular assist devices (VADs) and total artificial hearts. Engineers seek improvements to loop performance that will more accurately reflect the complexity of the human cardiovascular system and provide more useful testing data.

Peak's circulatory loop design includes improvements that allow patient-specific modeling by adding in the personalized elastance function of a patient's heart. The elastance function describes how the heart contracts over the time of one cardiac cycle. His new system can create pressure-volume (PV) loops that are like those seen when a patient's heart beats. The ability to create these individualized PV loops allows the test system to simulate various disease states, such as heart failure, and will enhance the testing and refinement of future heart-assist devices.

Peak joined the undergraduate Student Scholar internship program at The Institute because of his interest in medical device design and research, specifically in cardiac assist devices. "I have learned so much working as a Student Scholar in both the Cardiovascular Pathology Lab and the IDEA Lab. I've received amazing mentorship, met incredible people, and discovered that I have a genuine interest in research. I don't know what the future holds, but I'm very happy to continue working on our incredible research projects as a member of the IDEA Lab," he shared.

Yaxin Wang, PhD, Director of the IDEA Lab, commented, "Preston is a brilliant and hard-working young engineer. I witnessed his transition from a new Texas A&M undergraduate Student Scholar working in the lab a year ago, to a junior-level research engineer who now leads his own project. I hope his story will inspire future Student Scholars."

*"I've received amazing mentorship, met incredible people, and discovered that I have a genuine interest in research."*

*- Preston Peak, Research Engineer, IDEA Lab, on his Student Scholar experience*



*Celebrating*  
**COMMUNITY**







# #WALK30: IMPROVING HEALTH, ONE STEP AT A TIME

*Center for Women's Heart & Vascular Health Partners With Fit Houston*

In December 2022, The Texas Heart Institute and Fit Houston announced their special partnership to promote #WALK30, a health campaign that combines The Institute's industry-leading research, thought leadership, education, and patient care with Fit Houston's strategy-led delivery of community wellness movements.

With lifestyle and activity levels playing a critical role in health outcomes, #WALK30 brings accessible, community-based solutions to deliver health transformations in Houston's neighborhoods and workplaces. "Regular physical activity reduces cardiovascular risk, improves mental health, and

reduces cancer risk. Fit Houston is laser-focused on facilitating free physical activity that is available in every community and is done through a positive wellness movement with cultural empathy," said Fit Houston Founder and Executive Director, Lharissa Jacobs.

"There is work to be done and improving fitness is critical to our success. As we relaunch and expand our Houston HeartReach community-wide outreach programs post-COVID, Fit Houston is a natural and perfect community partner," added Dr. Stephanie Coulter, Director of The Institute's Center for Women's Heart & Vascular Health.



*Community partners supported the launch of the Houston area-wide fitness campaign.*





*“We are willing to take bold action to realize our vision to deliver the future of cardiovascular health with partners like Fit Houston. The Fit Houston #WALK30 initiative underscores our commitment to reshaping health and wellness for our communities.”*  
– Keri Sprung, MBA

The #WALK30 campaign kicked off in January 2023 and creates a pathway for CEOs, organizational leaders, families, and individuals to “Take the Healthy Pledge” and inspire others to walk for 30 minutes each day, wherever they are, and then share walking activity and its impacts on personalized social media posts.

The inception of the campaign stemmed from the Fit Houston team’s successful Equity Pitch to prominent business and civic leaders who participated in the inaugural cohort of the Houston 2036 Taskforce on Equity. The Houston 2036 Taskforce on Equity is a citywide initiative that brings leaders together to create and act upon a powerful vision of social

justice for Houston’s future.

The campaign benefits from strong support from The Institute and its Greater Houston community partners. On special episodes of “Inside the Studio with Dr. Joseph G. Rogers,” leaders of Houston-area nonprofits and academic institutions joined The Institute’s President & CEO to describe their own strategies for promoting exercise and wellness for themselves, their employees, and their communities. City of Houston Mayor Sylvester Turner also lent his support to the challenge with a special video message. The program launch included a kickoff event at Arthur Storey Park on January 7, 2023, with over 100 walkers supporting the mission in person.



# Andre Scott Jr. Advocates for Food Security

## AHA “You’re the Cure” Teen Ambassador Visits The Texas Heart Institute

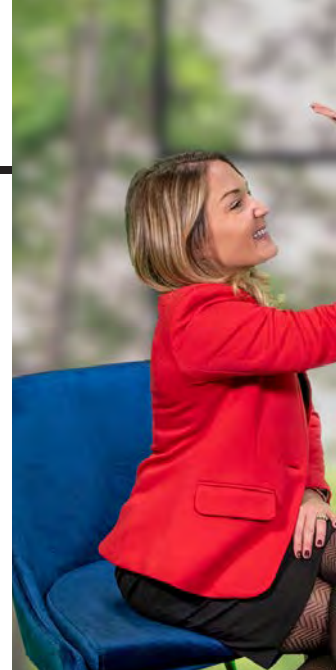
Andre Scott Jr., a student at Atascocita High School, is partnering with the American Heart Association (AHA) and other teen advocates who want to help reduce food insecurity and the prevalence of diet-related diseases such as diabetes, obesity, and hypertension. Andre is fascinated with cardiology and passionate about preventing cardiovascular disease in his home state of Texas and across the country.

In September of last year, Andre attended the White House Conference on Hunger, Nutrition, and Health in Washington, D.C., as a teen ambassador, and he is spreading awareness about cardiovascular health through blogs and hosted vlogs in partnership with the AHA “You’re the Cure” program. The White House conference’s goal is to end hunger and increase healthy eating and physical activity by 2030, so that fewer Americans experience diet-related diseases and health disparities. The “You’re the Cure” network supports grassroots advocacy for healthier communities and a reduction in the incidence of heart disease and stroke, with an emphasis on cardiovascular disease prevention, quality and value of care, access to care, heart disease and stroke research, and rehabilitation.

Recently, Andre invited Dr. Briana Costello, an interventional cardiologist with The Texas Heart Institute Center for Cardiovascular Care, to film an interview for his vlog “Heart Hype.” During his visit to The Texas Heart Institute in November 2022, he also shared his goal of becoming a cardiologist, including his dreams of remaining close to home and attending a Texas-based medical school, with Dr. Joseph G. Rogers, President and CEO of The Institute.

“We are honored to be a part of Andre’s project, as access to healthy food and physical activity can help reduce the chance of developing cardiovascular disease, diabetes, hypertension, and other severe conditions later in life,” said Dr. Rogers.

In addition to his time in The Institute’s video studio with Dr. Costello and his discussion with Dr. Rogers, Andre toured the cardiac catheterization lab and the Wallace D. Wilson Museum.



**Briana Costello, MD, FSCAI**

*The Texas Heart Institute Center for Cardiovascular Care*

*Social Media Editor, The Texas Heart Institute Journal*

*Physician Ambassador, Center for Women’s Heart & Vascular Health*





## “Heart Hype” to Prevent Cardiovascular Disease

Andre’s interview with Dr. Costello, featured as part of his “Heart Hype” outreach vlog series, focused on the relationship between food insecurity and heart health. The pair discussed the benefits of healthy eating, particularly fresh fruits and vegetables, and the importance of nutrition security—the consistent access, availability, and affordability of healthy foods—for heart health. Dr. Costello encouraged the development of healthy eating habits that young people will carry with them throughout their lives and described the negative impact of diabetes and obesity on cardiovascular health.

Andre shared the AHA’s efforts to improve Texans’ access to healthy food through the upcoming legislative session. He advocated for increased access to SNAP, the Supplemental Nutrition Assistance Program, a federal program that provides monthly benefits for low-income households to buy food. He and Dr. Costello discussed who can benefit directly from the SNAP incentive program, and the added value to communities through improved health and increased economic activity. Finally, Andre issued a call to action, sharing a texting campaign to contact Texas lawmakers to advocate for increasing food benefits for Texans.



# RAY C. FISH FOUNDATION MAKES PROFOUND IMPACT

*Celebrating 60 Years of Philanthropy*

When Denton A. Cooley, MD, founded The Texas Heart Institute in 1962, he relied entirely on the generosity of the Houston community to seed his vision. Although The Institute now receives funding from multiple sources—including industry, government grants, and most recently, its clinical practice—philanthropy is still a primary source of revenue.

As The Institute celebrates its 60th Anniversary, it also celebrates the generosity of its longtime philanthropic partners, especially Mr. Ray C. Fish and the Ray C. Fish Foundation. Although Mr. Fish died in 1962, the year The Institute was founded, the Ray C. Fish Foundation provided the initial gift of \$5 million needed to take The Institute from concept to reality. That gift, which is equivalent to approximately \$50 million today, was just the start of a longtime partnership between the board of the Ray C. Fish Foundation and The Texas Heart Institute.

Ten years after the initial gift was made, The Institute's most prestigious scientific award was named in honor of Mr. Fish. The Ray C. Fish Award for Scientific Achievement recognizes those whose innovations have made significant contributions globally to cardiovascular medicine and surgery. Since 1972, 40 remarkable clinicians and scientists have been recognized for their contributions to cardiovascular health and the important body of scientific knowledge that is propelling discovery and medical inventions to improve lives around the world.





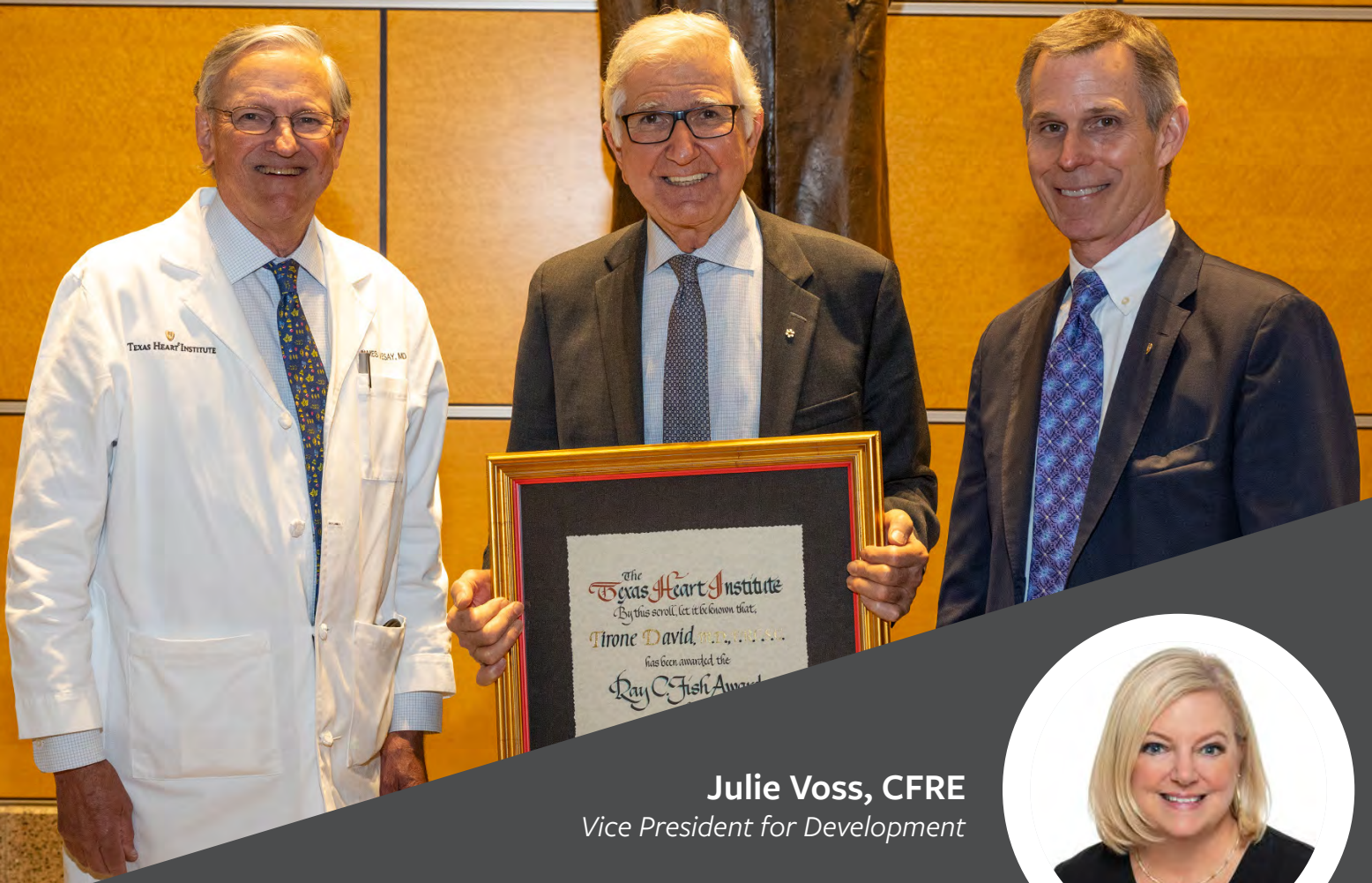
# Ray C. Fish Award for Scientific Achievement

## Surgeon Dr. Tirone E. David Honored

The Ray C. Fish Award for Scientific Achievement continues to be supported by the board of the Ray C. Fish Foundation. Through the board's generosity, the 2023 recipient, Tirone E. David, MD, received his award in early January 2023. Dr. David is a Professor of Surgery at the University of Toronto and has developed numerous operative procedures, including one that has become world-renowned as the "David procedure." Dr. David joins a prestigious group of cardiologists and surgeons who have received the award, many of whom are affiliated with The Texas Heart Institute, includ-

ing Drs. Cooley, O.H. Frazier, James T. Willerson, David A. Ott, and Emerson C. Perin.

Contributions from individuals, companies, and family foundations, like the Ray C. Fish Foundation, allow The Texas Heart Institute to push the boundaries of discovery and help enable transformational change in cardiovascular health. Supporting The Institute positively impacts the lives of many people, not just in Texas but across the globe. Our progress would not be possible without the confidence, commitment, and support of our community partners.



**Julie Voss, CFRE**  
*Vice President for Development*





# THE COOLEY CIRCLE DINNER

## *Special Event Honors Dr. Emerson C. Perin*

On Monday, October 24, 2022, The Texas Heart Institute held *The Cooley Circle Dinner*, an annual event that celebrates The Institute's supporters and recognizes the accomplishments made possible through philanthropy. The event also honored Emerson C. Perin, MD, PhD, interventional cardiologist and Medical Director of The Texas Heart Institute, for his leadership in the development of stem cell therapies for cardiovascular diseases.

This year's dinner was especially mean-

ingful for two reasons: The Institute was celebrating its 60th Anniversary, and the dinner was the first in-person social gathering for The Institute and its supporters since the COVID-19 pandemic started in 2020. Nearly 100 guests attended the special evening at the Coronado Club. In addition to honoring Dr. Perin, many of the guests enjoyed the opportunity to meet The Institute's new President and CEO, Joseph G. Rogers, MD, who joined The Institute in May 2021.



*To learn more about The Cooley Circle or to become a member, please contact the Office of Development at (832) 355-4011.*





*“Every advance that has occurred and will occur at The Texas Heart Institute is because of you. Thank you for helping to deliver the future of cardiovascular health today.” – Joseph G. Rogers, MD*

Dr. Rogers shared that cardiovascular diseases remain the leading cause of death and disability globally for men and women and that, in the United States alone, one in every five deaths is caused by heart disease. He also described the two-part vision of The Institute’s leadership to forge a better future for those with cardiovascular diseases and to do this better than anyone else in the world. The event closed with The Institute’s Board Chair, Eric Wade, toasting the guests for their continued advocacy of and generosity toward The Texas Heart Institute and its mission to improve cardiovascular health through trailblazing research, thought leadership, education, and patient care.

**Pictured. Photo 1** (left to right): Guests Neal Hirsch, Gregory Perin, Susan Hirsch, Dr. Michael Eisenberg, Jackie Perin, Allison Eisenberg, and honoree Dr. Emerson C. Perin. **Photo 2** (left to right): Guests Don and Dena Houchin. **Photo 3** (left to right): Dr. Eduardo Hernandez, President, The Texas Heart Institute Center for Cardiovascular Care; Guests Larry and Patti Fallek; and Dr. Darren Woodside, Vice President for Research, The Texas Heart Institute. **Photo 4** (left to right): Dr. Joseph G. Rogers, President and CEO, The Texas Heart Institute, welcoming Institute Trustee Dr. Brad Lembcke and his wife, Megan.



# BENCH-TO-BEDSIDE

*Continuing a Culture of Translational Research in 2022*



## Intellectual Property

Protecting our inventions with patents



## Optioned Technology

Evaluating a new technology before development



## Licensed Technology

Transferring technology know-how for product development

The Texas Heart Institute is focused on innovation and translation of fundamental discoveries into improvements in cardiovascular care through the invention and commercialization of new therapies and devices for patients with cardiovascular disease. Translational research benefits human health by moving laboratory findings through the rigorous development and testing process needed before the discovery yields a new Food and Drug Administration (FDA)-approved treatment option for patients. Intellectual property protection and technology licensing are key parts of this process.

## *Intellectual Property & Technology Transfer*

17

Start-up companies with licensing and/or equity relationships to date

\$2.5M

Earned through licensing, royalty, and milestone payments

\$5.7M

Associated grants and contracts revenue



# Center for Clinical Research

Conducting clinical research and trials to expand treatment options



Active studies supported by industry sponsors, federal grants, and investigator-initiated studies

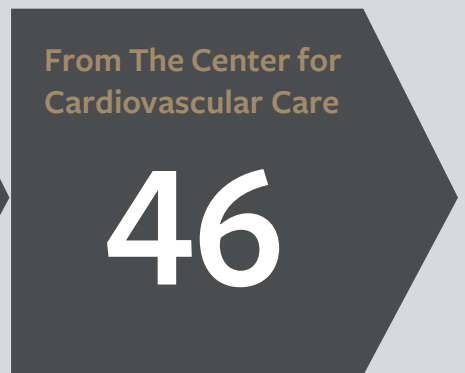


Studies in active study start-up



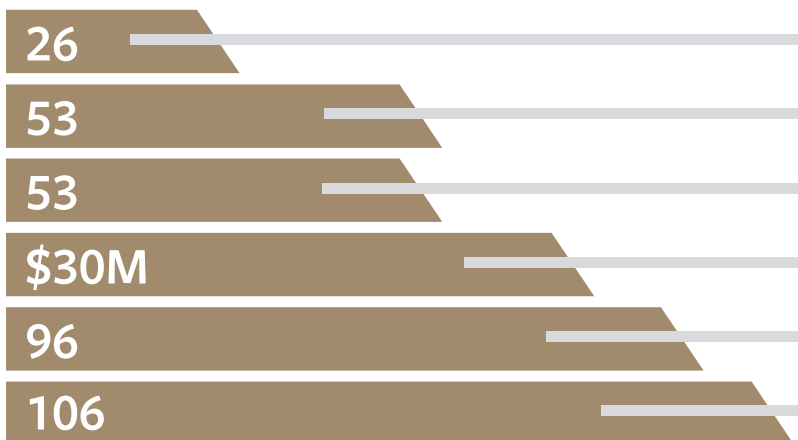
## Publications

Sharing our discoveries and clinical expertise



## Office of Research Administration

Supporting investigators during the discovery process



Ongoing Grants

Different Sponsors

Total Grant Proposals Submitted - 25% Increase from 2021

Total Funding Amount for Submitted Grants

Contracts and Research Agreements Managed

Contracts, Projects, and Contracts Agreements Executed

# OUR GLOBAL REACH 2022

*Continuing Medical Education & Websites*



## Continuing Medical Education

7

CME Symposia

14

Regularly Scheduled Series

31

Cardiology Grand Rounds Lectures



## Website Reach

*Circles represent top 10 countries with visitors to each website*

### The Texas Heart Institute

8.9M

Visitors

90

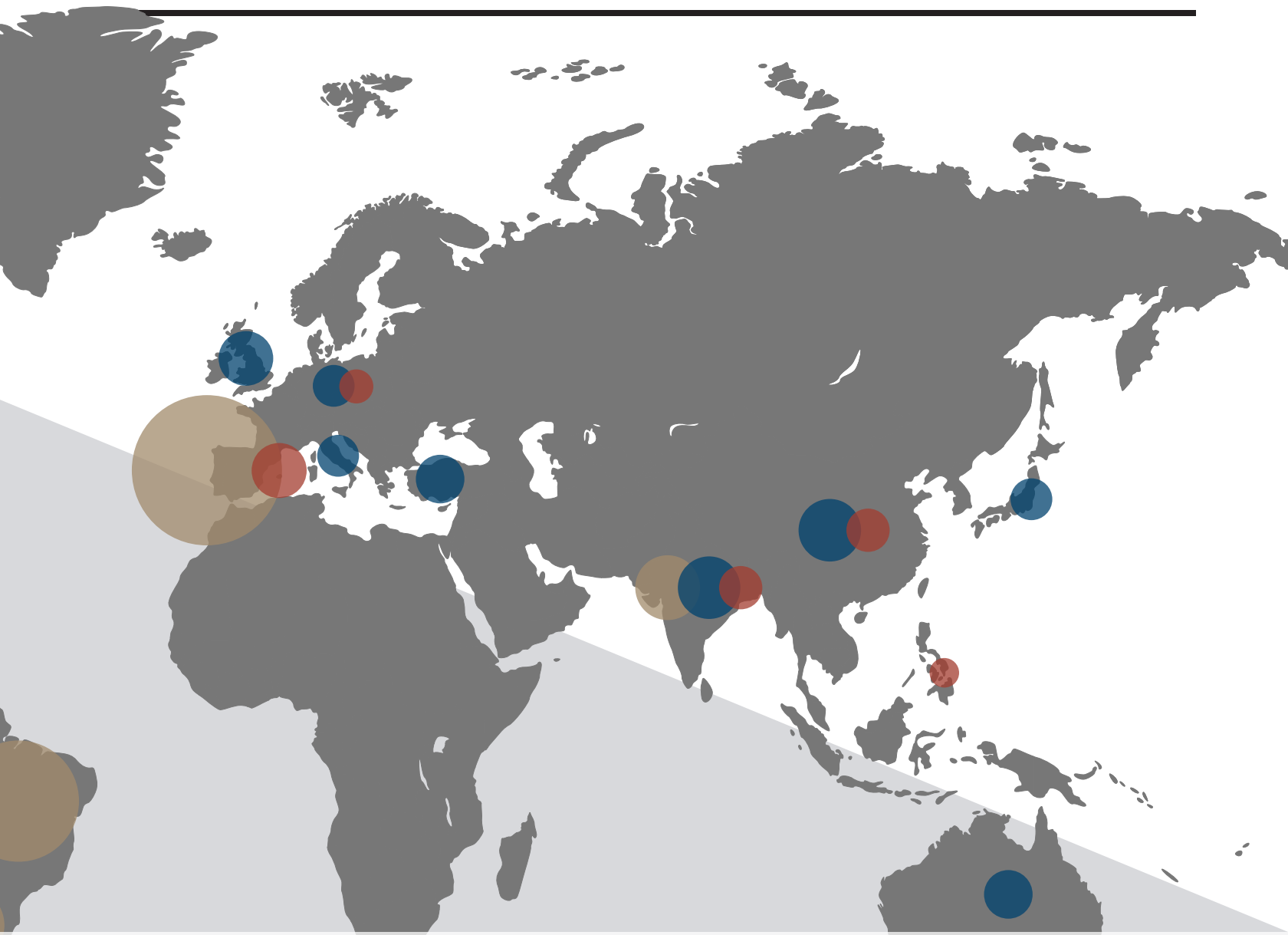
Original Feature Stories/Articles

50.2M

Page Views

[texasheart.org](http://texasheart.org)





**The Texas Heart  
Institute Journal**

46,200

Visitors

99,000

Page Views

[thij.org](http://thij.org)

**The Texas Heart Institute  
Center for Cardiovascular Care**

36,100

Visitors

104,600

Page Views

[texasheartmedical.org](http://texasheartmedical.org)



*Celebrating*

**PEOPLE**





***Clauden Louis, MD, MS, MPH,  
2022 AATS Foundation Denton A. Cooley Fellow***

# THE TEXAS HEART INSTITUTE PROFESSIONAL STAFF

The Texas Heart Institute Professional Staff consists of cardiologists, cardiovascular surgeons, and research scientists, and specialists in related disciplines who are committed to the mission of The Institute. The Texas Heart Institute Professional Staff members are approved by The Institute's Medical Executive Committee and Board of Trustees.

## PHYSICIAN MEMBERS - CARDIOLOGY

Jonathan Aliota, MD	R. David Fish, MD	Alexander Postalain, MD, FSCAI
Paolo E. Angelini, MD	Jorge Garcia-Gregory, MD	Saleem Raslan, MD
Salman Bandeali, MD	Joggy K. George, MD	Mehdi Razavi, MD
Bruce E. Barnum, MD	Eduardo Hernandez-Vila, MD	Joseph G. Rogers, MD
Arthur W. Bracey, MD	Surendra K. Jain, MD	Mark Schnee, MD
Jie (Jay) Cheng, MD, PhD	Zvonimir Krajcer, MD	John Seger, MD
Benjamin Cheong, MD	D. Richard Leachman, MD	Samar Sheth, MD
Andrew Civitello, MD	J. Alberto Lopez, MD	Neil Strickman, MD
Patrick J. Cook, MD	Mehran Massumi, MD	John Tyler, MD
Briana Costello, MD, FSCAI	Andres Mesa, MD	Salim Virani, MD, PhD
Stephanie Coulter, MD, FACC, FASE	Maher M. Nasser, MD	Robert P. Walmsley, MD
Reynolds Delgado III, MD	Atasu K. Nayak, MD	Amy Woodruff, MD
Jorge Escobar, MD	Alireza Nazeri, MD	George Younis, MD
Sayed F. Feghali, MD	Emerson Perin, MD, PhD, FACC	

## PHYSICIAN MEMBERS - CARDIOTHORACIC SURGERY

William E. Cohn, MD	Charles H. Hallman, MD
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Emerson Perin, MD, PhD, FACC  
Stephanie Coulter, MD, FACC, FASE

## MEDICAL EXECUTIVE COMMITTEE

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R. David Fish, MD  
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Karla Campos-Arce, MD  
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Jun Wang, PhD  
Darren G. Woodside, PhD



60<sup>th</sup> Anniversary Celebration





# PROFESSIONAL STAFF

*Continued from previous page*

## PHYSICIAN ASSOCIATES - CARDIOLOGY

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Ravi Ghanta, MD	Vicente Orozco-Sevilla, MD	

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William Goins, MD	Marcia A. Kielhofner, MD





# The Texas Heart Institute Senior Leadership

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Howard K. Schramm, MBA

Keri Sprung, MBA

Julie K. Voss, CFRE

Darren Woodside, PhD

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Joseph G. Rogers, MD



# FELLOWSHIP PROGRAM AND FACULTY

*“The best inventions and innovations in the world mean little unless doctors are trained to put them into practice.” – Stephanie Coulter, MD, FACC, FASE, Program Director*

The Texas Heart Institute Cardiovascular Disease Fellowship at Baylor St. Luke’s Medical Center was started in 1965. Since that time, the fellowship program and the subspecialty programs that have followed it have been at the center of The Institute’s educational mission.

## CARDIOVASCULAR DISEASE FELLOWS

Javid Alakbarli, MD ◆	Jordan Gales, MD *	Kaleb Lambeth, MD **	Matthew Segar, MD **
Joseph Allencherril, MD ◆	Lauren Golden, MD ◆	Jason Liu, MD	Andrew Sun, MD
Anish Badjatiya, MD *	Milad El Hajj, MD	Patrick Marcus, MD *	Mitch Tan, MD ◆
Isabel Balachandran, MD	Michael Hermelin, MD ◆	Chelsea Meloche, MD	Brian Yum, MD **
Adam Brouillard, MD	Kim-Trang Ho, MD	Robert Paisley, MD	
Diego Celli, MD	Ramsey Kalil, MD	Saad Rehman, MD	
Brett Doliner, MD	Sudeep Kuchibhotla, MD ◆	Rayhan Saiani, MD	

## CLINICAL CARDIAC ELECTROPHYSIOLOGY FELLOWS

Gilad Birnbaum, MD	Austin Howard, MD ◇	June Pickett, MD
George A. Heberton, MD ◇	Robert Paisley, MD	Mitch Tan, MD

## INTERVENTIONAL CARDIOLOGY FELLOWS

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Jospeph Allencharril, MD	Michael Harms, MD ◇	
Robert Bagwell, MD ◇	Numan Khan, MD ◇	

## ADVANCED HEART FAILURE & TRANSPLANT MEDICINE

Tamer Amer, MD ◇	Salman Bandeali, MD ◇	Matthew Riesbeck, MD
------------------	-----------------------	----------------------

## THORACIC SURGERY RESIDENTS

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Peral Baral, MD	Nabeel Gul, MD	Abraham Katz, MD	Krishna Patel, MD
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Alin Cheran, MD	Jaymie Henry, MD	Martin Kosztowski, MD	Vuong-Lam Pham, MD
Matthew R.L. Egyud, MD	Mohammad S. Jafferji, MD	Naya Mohan, MD	Hoang-Vu Tran, MD

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Aidan DeLeon, MD	Simon Martin, MD	Nabil Othman, MD ●	Wendy Tsai, MD
Mario Farias-Kovac, MD	Nicole Massucci, MD	Jacqueline Sohn, DO ●	Claudia Wei, MD

● *Critical Care Fellows*

◆ *June 2022 Graduates, Cardiovascular Disease* ◇ *June 2022 Graduates, Subspecialty Programs* \* *Chief Fellows 2021-2022* \*\* *Chief Fellows 2022-2023*



## CARDIOVASCULAR DISEASE PROGRAM DIRECTORS

Stephanie Coulter, MD, FACC, FASE  
George Younis, MD

## CARDIOLOGY SUBSPECIALTY FELLOWSHIP PROGRAM DIRECTORS

R. David Fish, MD  
Mohammad Saeed, MD  
Andrew Civitello, MD

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Paolo E. Angelini, MD	Andres Mesa, MD
Salman Bandedali, MD	Michael McArdle, MD
Bruce E. Barnum, MD	Michael Mihalick, MD
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Jose Diez, MD	Dhaval Parekh, MD
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R. David Fish, MD	Abdi Rasekh, MD
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Mehran Massumi, MD	George Younis, MD



17<sup>th</sup> Annual BioHouston Chili Cook-Off





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*Continued from previous page*

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Mihail G. Chelu, MD, PhD, FHRS  
Jie (Jay) Cheng, MD, PhD  
J. Alberto Lopez, MD

Nilesh Mathuria, MD  
Joanna Molina Razavi, MD  
Abdi Rasekh, MD

Mehdi Razavi, MD  
Mohammad Saeed, MD  
John Seger, MD

## INTERVENTIONAL CARDIOLOGY TEACHING STAFF

Paolo E. Angelini, MD  
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Sayed F. Feghali, MD  
R. David Fish, MD  
Joggy K. George, MD

Eduardo Hernandez-Vila, MD  
Surendra K. Jain, MD  
Ali Mortazavi, MD  
Maher M. Nasser, MD  
Atasu K. Nayak, MD  
Emerson C. Perin, MD, PhD, FACC  
Alexander Postalian, MD

Priyanka Sen, MD  
Guilherme V. Silva, MD  
Leo Simpson, MD  
Samar Sheth, MD  
Neil Strickman, MD  
Robert P. Walmsley, MD  
George Younis, MD

## ADVANCED HEART FAILURE AND TRANSPLANT CARDIOLOGY TEACHING STAFF

Alexander Butkevich, MD  
Andrew Civitello, MD  
Reynolds Delgado III, MD  
Joggy K. George, MD

Ajith P. Nair, MD  
Selby Oberton, MD  
Priyanka Sen, MD  
Leo Simpson, MD

Ziad A. Taimeh, MD  
Lola Xie, MD

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Carlos Jessurun, MD  
Michael Mihalick, MD

Madjid Mirzai-Tehrane, MD  
Ali Mortazavi, MD  
Joseph P. Navarajo, MD  
Atasu K. Nayak, MD

Rupa Puttappa, MD  
Raymond Stainback, MD  
Amy Woodruff, MD

## ELECTROPHYSIOLOGY CARDIOLOGY TEACHING STAFF

Mihail G. Chelu, MD, PhD, FHRS  
Jie (Jay) Cheng, MD, PhD  
J. Alberto Lopez, MD

Nilesh Mathuria, MD  
Joanna Molina Razavi, MD  
Abdi Rasekh, MD

Mehdi Razavi, MD  
Mohammad Saeed, MD  
John Seger, MD

## NUCLEAR TEACHING STAFF

Pat Ford, MD

Warren Moore, MD







# The Texas Heart Institute School of Perfusion Technology

The School of Perfusion Technology was established in 1971 to train cardiovascular perfusionists, who play a critical role in operating the circulation equipment that sustains patients during open-heart surgery and other medical procedures. The school was the first of its kind to be accredited in the United States. Led by Director and Clinical Coordinator Deborah Lowery Adams, MA, LP, CCP, the program offers a post-baccalaureate certification in perfusion technology; this 18-month schedule combines academic coursework and clinical rotations to prepare trainees to become a Certified Clinical Perfusionist.

## School of Perfusion Staff

### Director & Clinical Coordinator

Deborah Lowery Adams, MA, LP, CCP

### Research Coordinator

Kathleen Kibler

### Administrative Assistant

Angela Ward

## School of Perfusion Technology 2022 Students

- |                  |                   |
|------------------|-------------------|
| Cody Adams       | Kyle Guster       |
| Maria Akery      | Hannah Hedtke     |
| Amanda Anderson  | Katie Justiss     |
| Lauren Belinc    | Sydney Kor        |
| Reese Besse      | Frances Lewis     |
| Kaitlyn Bickhaus | Brianna Loper     |
| Reuben Carter    | Esteban Lopez     |
| Brian Cress      | Duc Nguyen        |
| Ben Dominico     | Payar Pasha       |
| Hillary Dressler | Nicole Pellizzari |
| Collin Esau      | Derek Suen        |
| Joshua Finch     | Khristopher Tran  |
| Jonathan French  | Aarish Wadia      |
| Kelsey Greiner   | Zachary Wurtz     |

*June Graduates*



*December Graduates*





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Alexander Postalian, MD

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# EMPLOYEE SERVICE AWARDS

## Spring 2022 Awards

35 Years

Joseph C. Brewton, III

25 Years

James Chen, RN, BSN, CCRC

20 Years

LaTisa C. Johnson

15 Years

Brian W. Grace

Stephanie R. Jackson, MBA

5 Years

Ann Bromley

Shijie Liu, PhD

Robert McNeil

Katherine Ray

Jayme Nicole Stancel, PhD, ELS(D)

Yaxin Wang, PhD

Sui Zhang, MD, PhD

## Fall 2022 Awards

42 Years

Jeff Conger

20 Years

Brenda Jones

Qi Liu, PhD

15 Years

Shahrzad Abbasi, PhD

Guillermo Fraga

Melissa Moon

Ana Maria Segura, MD, MPH

Arcile Suerte

10 Years

Jennifer Chambers, RN, BSN, CCRC

Jong Hwan Kim, PhD

Jennifer Parenti, RN

Keri Sprung, MBA

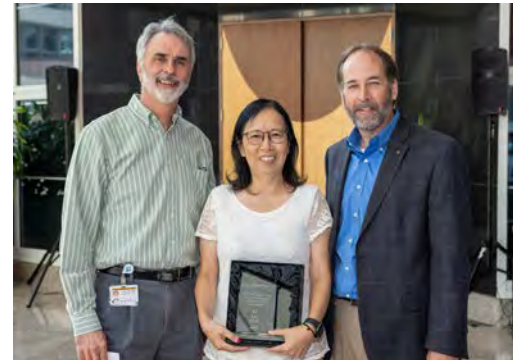
5 Years

Camila Hochman-Mendez, MSc, PhD

Jacob Izquierdo, CCRC

Munawar Rana, MS

Edward Winter



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Photography Intern

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