Impact Stories of Philanthropy





The Campaign for UTHealth Houston

Our communities face complex and pervasive conditions, and the increased demand for health professionals poses significant challenges for health systems around the nation.

Over our 50-year history, UTHealth Houston has stood at the forefront of these challenges, combining education, research, and patient care to move health care forward. To build on our expertise and bring our unique capabilities where they are most urgently needed, we launched our largest philanthropic effort yet, *Many Faces. One Mission.* 

Within these pages, you will read stories about how your commitment to *Many Faces*. *One Mission*. combines with others to improve lives throughout our community—from providing scholarships and education to address shortages in the workforce, to training health professionals fluent in the unique needs of underserved populations, to addressing conditions where every second matters.

Because of you, we are able to rise up and meet the challenges at hand. *Thank you* for being a part of the UTHealth Houston story—and for your dedication to building a healthier community.

#UTHealth Houston

The Campaign for UTHealth Houston

Many Faces. One Mission. is our \$500 million commitment to:







TRAINING THE NEXT GENERATION OF

### HEALTH PROFESSIONALS

We will deepen our commitment to the next generation of practitioners and innovators, as well as the educators who train them, to address shortages in critical health professions.

**IMPROVING** 

### HOUSTON'S HEALTH

We will save lives and improve health outcomes throughout Houston and Texas by amplifying collaborative research; encouraging a passion for learning; and promoting patient care and public health projects, programs, and outreach initiatives.

ADVANCING

#### BRAIN AND BEHAVIORAL HEALTH

We are building a leading center of care for brain and behavioral health, dedicated to discovering better treatments for neurological conditions and making mental health care accessible to all.

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Reimagining care of pediatric brain tumors





## TRAINING THE NEXT GENERATION OF HEALTH PROFESSIONALS

Today's students hold the potential to tackle tomorrow's health challenges. By harnessing a passion to improve lives, they will become the physicians and researchers who guide our communities to better health, the dentists who deliver bright new smiles, and the nurses who provide compassionate routine and complex care.

As our nation faces growing shortages of health care workers, UTHealth Houston is deepening our commitment to training the next generation of health professionals—as well as the experts who educate them. Through unique collaborations that place students at the forefront of their field and faculty support that helps enrich the academic environment, we are positioning our graduates to make an even greater impact on health.

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#### ENGINEERING THE FUTURE OF HEALTH CARE

A partnership to advance innovative programs

#### WINGS OF GENEROSITY

Support from endowments lifts UTHealth Houston faculty





## TRAINING THE NEXT GENERATION OF HEALTH PROFESSIONALS

Today's students hold the potential to tackle tomorrow's health challenges. By harnessing a passion to improve lives, they will become the physicians and researchers who guide our communities to better health, the dentists who deliver bright new smiles, and the nurses who provide compassionate relief to patients during their darkest hours.

As our nation faces growing shortages of health care workers, UTHealth Houston is deepening our commitment to training the next generation of health professionals—as well as the experts who educate them. Through scholarships that help students achieve their dreams and lecture series that unite the world's top scientific minds, we are positioning our graduates to make an even greater impact on health.

Scan the QR code with your mobile device.









#### ABBY LOUIS

Interested in improving the health of underserved populations, Abby joined the MD/MBE program to learn how to navigate government regulations to bring medical devices to patients in need around the world. In her MBE coursework, she is helping to develop a device that can stabilize the fetus during fetoscopic spina bifida repair—a delicate procedure before birth to correct a defect that occurs when the spine does not properly close.

"My education through the MD/MBE program would not be possible without the generous support of donors," Abby says. "The scholarship I received not only benefits me, it benefits the lives of the patients I will touch through my care and the ideas I develop using my bioengineering experience."



#### NEEL MUTYALA

Neel joined the MD/MBE program after seeing the potential for technology to improve patient outcomes during his clinical rotations at McGovern Medical School. In his MBE coursework, he is helping develop a device to improve the outcomes of children with hydrocephalus, a condition characterized by the buildup of cerebrospinal fluid in the brain. The device monitors pressure in the brain and allows health providers to drain excess fluid.

"Medical school is a large financial commitment, and the extra year of the MD/MBE program only adds to that," Neel says. "Donors who have supported scholarships to the program are enabling me to become the best physician I can be for my future patients."

Students in the MD/MBE program follow a condensed five-year academic path that enables them to simultaneously earn an MD from McGovern Medical School and an MBE from Rice. After spending their first three years in medical school, students complete the one-year MBE degree at Rice before completing their final year of medical school.

"The clinical knowledge I gained during the first three years of medical school gave me a unique perspective entering the MBE portion of the program," says Greg. "My Rice classmates used their engineering backgrounds to guide discussions on product development and engineering principles, and I shared my clinical experiences to help my classmates understand the unique needs of physicians and patients."

According to Allison Ownby, PhD, this exchange of knowledge between engineering and medical students forms the heart of the program. "While our medical students bring knowledge about specific health care issues and clinical experiences to the program, engineering students bring the skills to develop technologies," she says. "By combining these strengths in the same classrooms, we can offer unparalleled experiences."

During the MBE curriculum, students create real solutions that make a tangible impact on patients by working on bioengineering projects proposed by faculty and health professionals from across the Texas Medical Center. In one of the program's core courses, students assemble in teams and select a project that interests them. From there, students transform into CEOs and generate a model to bring the product from idea to market.

Greg's team set out to create a low-cost bag valve mask ventilator for children called the MiniVent, which could provide emergency ventilation to patients with severe breathing issues without the need to manually squeeze the bag.



Allison Ownby, PhD

Associate Professor and
Associate Dean, Educational Programs

McGovern Medical School at UTHealth Houston "The MiniVent is essentially a box with two motors to automatically squeeze the bag valve mask for consistent ventilation over extended periods of time," says Greg. "We also installed sensors that allow health providers to monitor ventilation."

As COVID-19 continues to fill emergency rooms around the world with people suffering from breathing issues, the MiniVent could make lifesaving care more accessible to patients, no matter where they are.

"In addition to designing the MiniVent, we also outlined the steps to bring it to market, which included obtaining patents, meeting government regulations, and securing funding," says Greg. "Students in future MBE cohorts will pick up the project where we left off and continue to refine it, taking the steps to eventually make the product available to health providers."

Now in his final year of medical school, Greg plans to carry his experiences in the MD/MBE program into his future career as a surgeon.

"By combining my skills as a surgeon with my knowledge of bioengineering, I'll be able to make a bigger impact on the health of my patients," he says. "I hope to create new devices that will make surgeries more effective."

Since Greg completed the MBE portion of the program in May 2021, two additional medical students began their MBE studies in fall 2021: Abby Louis and Neel Mutyala.

"Our vision is to continue expanding the MD/MBE program to offer more opportunities for students," says Gang Bao, PhD, Chair of the Department of Bioengineering at Rice University. "Building off its success, we hope to grow additional collaborations, including joint research programs that leverage the strengths of the extraordinary faculty at both institutions."

Just as the MD/MBE program has enabled Greg, Abby, and Neel to learn how to engineer solutions to pressing health problems, donors have engineered unique opportunities for them to succeed. Since the Many Faces. One Mission. campaign launched, generous commitments from UTHealth Houston Development Board members Carolyn Frost Keenan, Barbara J. Gibbs, and Barry M. Lewis have supported scholarships for students in the MD/MBE program.

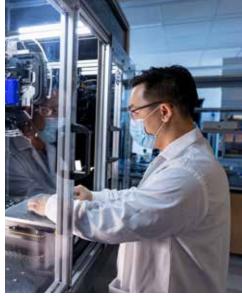


Gang Bao, PhD

Professor and Chair,
Department of Bioengineering

George R. Brown School of Engineering Rice University







Sandipan Pati, MD

Associate Professor,

Department of Neurology

McGovern Medical School at UTHealth Houston



John P. Seymour, PhD

Associate Professor, Vivian L. Smith Department of Neurosurgery

McGovern Medical School at UTHealth Houston

Adjunct Associate Professor,
Department of Electrical
and Computer Engineering
Rice University

As the program continues to grow, and the partnership between UTHealth Houston and Rice University strengthens, new opportunities for students and additional collaborative programs will flourish.

In one collaboration, Sandipan Pati, MD, a neurologist with McGovern Medical School and UTHealth Houston Neurosciences, and John P. Seymour, PhD, who holds joint appointments at McGovern Medical School and Rice University, are developing a device that could improve the diagnosis of epilepsy.

"Like going into a bustling stadium and trying to listen for one specific conversation amid the commotion, diagnostic tools for epilepsy help neurologists listen in the brain to learn where seizures are coming from," says Seymour. "We're engineering a device that will allow physicians to pinpoint where seizures originate with greater precision by amplifying the signal and reducing a significant amount of biological noise."

During stereoelectroencephalography, a common diagnostic procedure for epilepsy, doctors implant small devices called depth electrodes in the brain, which measure brain activity to help locate seizures. Pati and Seymour are redesigning these depth electrodes to make them more accurate, which could

allow doctors to make fewer implants while still collecting a more precise reading of the brain. Their efforts earned a two-year seed grant to help advance the project toward clinical trials.

"Through our affiliations with the Texas Institute of Restorative Neurotechnologies at UTHealth Houston and the Neuroengineering Initiative at Rice University, we have access to the brightest minds, the most advanced technologies, and the most innovative ideas that both institutions offer," explains Seymour, who received a seed grant from the Barbara J. Gibbs Partnership Fund for a separate collaborative project. "Philanthropy provides critical seed funding that enables us to leverage that environment and pursue novel projects to collect the evidence required to earn larger federal grants."

With new frontiers in health science and engineering waiting to be explored, UTHealth Houston and Rice University are primed for discovery.

"As health challenges around the world continue to evolve, our communities need physician-scientists who make exceptional patient care more accessible and more effective. Collaborations like these and the donors who support them empower us to capitalize on the innovative environment and one-of-a-kind institutions of the Texas Medical Center to train this new generation of health professionals."



Dean of Education ad interim

Associate Professor,
Department of Pediatrics

McGovern Medical School at UTHealth Houston

Executive Vice President for Student Affairs and Diversity

**UTHealth Houston** 



### WINGS OF GENEROSITY

SUPPORT FROM ENDOWMENTS LIFTS UTHEALTH HOUSTON FACULTY

Flight begins with liftoff, a boost that propels us away from familiar ground toward rarified air. At UTHealth Houston, endowed funds provide resources in perpetuity that set our faculty on trajectories to new heights as they conduct life-changing work and train the next generation of health professionals, who will meet future health challenges headon.

#### **FURTHERING** A DENTAL LEGACY

Ana Neumann, DDS, PhD, carries the name of her late mentor and friend in a special way. As holder of the Gene C. Stevenson Distinguished Professorship in Dental Education, she pursues the same goals that drove them both as dentists.

"I still miss him today," she says of Stevenson, who served as faculty at UTHealth Houston School of Dentistry for 25 years before passing away in 2016. "He was a wonderful, dedicated faculty member and a real scholar."

When Neumann met Stevenson after joining the School of Dentistry faculty in 2010, she found they shared a commitment to evidence-based dentistry, and both held Master of Public Health degrees. Neumann earned a master's degree and later a doctorate at UTHealth School of Public Health as the only dentist in her class.

MANY FACES. ONE MISSION.



Ana Neumann, DDS, PhD

Gene C. Stevenson Distinguished Professor in Dental Education

Professor,

Department of General Practice and Dental Public Health

**UTHealth Houston School of Dentistry** 



"I could never dissociate dentistry and public health because really everything we do is public health," she says.

She and Stevenson shared a goal of teaching students how to analyze data to determine the best dental practices based on the evidence. They worked together to redesign the curriculum for students in dental public health classes, adding lectures to familiarize students with how to critically appraise scientific literature.

"I maintain these lectures in my course with special dedication to Dr. Stevenson," says Neumann, who directs the dental public health program at the School of Dentistry. "I still use his slides."

Today, she sees a wide range of possibilities for using funds from the Stevenson Distinguished Professorship, which was founded by Stevenson's widow, Lori, to honor his memory and advance evidence-based dentistry and critical thinking. Potential uses include creating research opportunities for faculty at the School of Dentistry and supporting the school's clinic for patients with special needs.

"Dr. Stevenson was helping patients with HIV when it was hard to get a dentist to do that," Neumann says. "Following that example, this endowment helps us care for patients who might have a hard time finding treatments elsewhere."

Neumann also teaches her students to evaluate evidence, think critically, and uphold the highest standards of dentistry.

"If we can equip them with the best possible knowledge, they can really make a difference in a lot of people's lives," she says.

#### SURGICAL TRAINING GETS A MAKEOVER

In a world with nearly unlimited information at the touch of a smartphone screen, medical students and residents have access to more knowledge than ever before—and more ways of learning it.

Todd D. Wilson, MD, has watched this transformation take shape with the residents he teaches in the Department of Surgery at McGovern Medical School at UTHealth Houston. Where surgical procedures were once the purview of textbook diagrams or firsthand observation, today's future surgeons have found new ways to study.

"It turns out our residents prefer short videos that demonstrate specific techniques," he says. YouTube offers a plethora of such videos and has drawn the attention of residents, but Wilson points out the lack of quality control on the platform. Yet even with his concerns, he believes video learning can play a key role in supplementing textbooks, which may not reflect the most recent advances in surgical technology.

"Given the time constraints residents have, YouTube-style videos could actually serve as great educational tools," Wilson says. "The problem is that we only have a few resources with good videos vetted by experts."

A computer programmer in his spare time and an official Apple software developer, Wilson saw an opportunity to blend YouTube learning with trusted medical expertise.

With support from the Glassell Family Research Innovation Endowment, he launched a collaboration with UTHealth Houston School of Biomedical Informatics to create an app with short instructional videos vetted by a committee at McGovern Medical School. The app will use artificial intelligence

to predict what residents may be looking for and help them find the right videos more quickly.

Todd D. Wilson, MD

Associate Professor, Department of Surgery

**McGovern Medical School** 

at UTHealth Houston

While the first videos will focus on specific surgeries, Wilson hopes to expand the effort into different fields and institutions outside UTHealth Houston.

"I greatly appreciate what the Glassell family has done in catalyzing this effort, which taps the incredible potential of emerging technologies like machine learning," he says. "I see this as only the beginning of what is possible."

 Bing Yu, PhD

The JLH Foundation Chair in Transplant Prevention

Associate Professor,
Department of Epidemiology,
Human Genetics, and
Environmental Sciences

**UTHealth School of Public Health** 



#### SAVING ORGANS, SAVING LIVES

Rapid advances in medical technology have given UTHealth School of Public Health researcher Bing Yu, PhD, an unprecedented window into the inner workings of the human body.

Able to view tens of thousands of biomarkers—molecules that indicate either normal processes or disease—many of them never before explored, her team has made significant progress in finding markers associated with potentially fatal conditions like heart disease.

"We all have good and bad things in our body, so we want to evaluate everything," she says. "When we identify these markers, we can see how much risk a person might have for future disease."

In 2016, Yu and Eric Boerwinkle, PhD, were researching the mechanisms of end-stage heart and kidney failure when they met Paula Hern, chair of the JLH Foundation,

which was founded to help support the financial needs of transplant patients and their families and to support transplant programs and research. Intrigued by the potential of Yu and Boerwinkle's research to prevent organ failure and thus the need for transplants altogether, the JLH Foundation made a substantial commitment to fund their work.

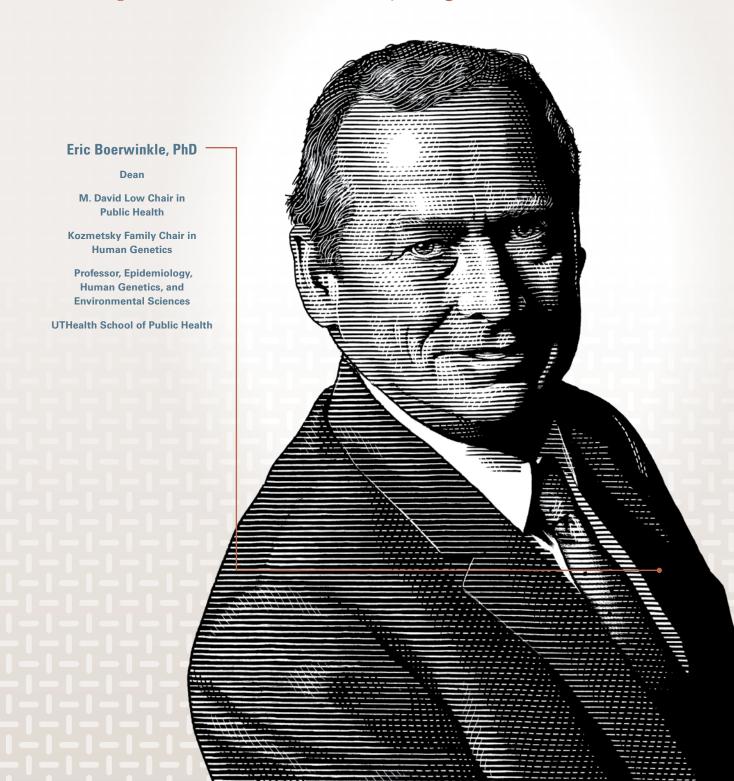
Less than two years later, Yu and Boerwinkle uncovered a key compound linked to high blood pressure, a major contributor to kidney failure. They also found a gene that regulates compound levels, which could serve as a target for developing treatments.

"Once we have blood pressure under control, we can protect kidney function," Yu says. "This could prevent people at high risk of kidney failure from needing transplants."

Recognizing the potential for even greater discoveries, in 2021 the JLH Foundation established The JLH Foundation Chair in Transplant Prevention to advance research focused on precursors to organ failure like high blood pressure and diabetes. Yu was named the chair's inaugural holder in 2021 and will use distributions to examine genes and biomarkers to identify patients at high risk for disease and discover new interventions.

"I am very honored to be the holder of this position," Yu says.
"There are still a lot of chronic diseases that do not have effective treatments, and this philanthropic support positions us to find solutions that save even more patients from the ordeal of organ transplants."

"Faculty endowments like professorships, chairs, and research funds empower our educators to create unique experiences and programs that grow our students into tomorrow's health care and public health leaders. As health challenges evolve and new issues emerge, these endowments help bring the brightest minds to UTHealth Houston to train the professionals that will keep our communities healthy long into the future."





## IMPROVING HOUSTON'S HEALTH

A sprawling metropolis with an unbreakable spirit, Houston is home to a vibrant and rapidly growing community of people from around the world. While the city boasts world-renowned medical resources, its residents face a unique host of evolving health challenges—from heart disease to cancer to COVID-19.

For 50 years, UTHealth Houston has stood at the forefront of safeguarding health in Houston and beyond. From leading innovative research and care to advance heart health to connecting veterans with essential dental care, we are improving health for people in our communities.

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#### BEATING IN RHYTHM

Delivering life-changing cardiovascular care and innovation

A SALUTE TO SMILES

Annual event improves the oral health of veterans





## IMPROVING HOUSTON'S HEALTH

A sprawling metropolis with an unbreakable spirit, Houston is home to a vibrant and rapidly growing community of people from around the world. While the city boasts world-renowned medical resources, its residents face a unique host of evolving health challenges—from heart disease to cancer to COVID-19.

UTHealth Houston has stood at the forefront of safeguarding Houston's health for nearly 50 years. From improving geriatric care for the most vulnerable older adults to connecting underserved populations to much-needed dental care, we are improving health for people throughout Houston and beyond.

Scan the QR code wit your mobile device.







### BEATING IN RHYTHM

DELIVERING LIFE-CHANGING CARDIOVASCULAR CARE AND INNOVATION

The body's cardiovascular system is vast, with sprawling labyrinths of arteries, capillaries, and veins long enough to wrap around the world more than twice. With a beating heart at its core, this complicated network winds its way through vital organs and tissues, delivering precious oxygen and nutrients. Despite its enormous size and complexity, new surgical techniques offer revolutionary ways to address life-threatening cardiovascular problems—sometimes through even the tiniest incisions.

For Emanuel J. Ramos
Tenorio, MD, PhD, a postdoctoral
research fellow in the Department
of Cardiothoracic and Vascular
Surgery at McGovern Medical
School at UTHealth Houston,
learning about minimally invasive
surgery in medical school
sparked a lifelong passion.

"The biggest drive for me in my career is to help people," Tenorio says. "I was amazed when I learned how we can solve big cardiovascular issues through small incisions."

Tenorio is part of a world-class team of researchers led by Gustavo S. Oderich, MD. Together, they collaborate on novel techniques to investigate and treat diseases of the aorta like aneurysms, which are weak, bulging areas in the blood vessel's walls.

MANY FACES. ONE MISSION.

IMPROVING HOUSTON'S HEALTH



In particular, the team researches cutting-edge stent grafts that are manufactured to fit the patient's anatomy and can account for vital blood vessels that branch off from the aorta. Physicians insert the device through a small incision in the groin. Once placed, the device diverts blood flow from the aneurysm, helping to prevent aortic rupture.

"The day after I defended my PhD thesis in Brazil, I moved to the United States to work with Dr. Oderich," Tenorio says. "Under his guidance, I have had the opportunity to study endovascular techniques and hone my skills as a surgeon and researcher to provide the best care for our patients." Oderich is a national leader in endovascular techniques and one of a few surgeons in the United States with FDA approval to use these specialized stent grafts to treat complex aortic aneurysms. His team has demonstrated that the devices are safe and effective—and can lead to shorter recovery times for patients.

"Every month, we have a new device or new techniques to treat the aorta," Tenorio says. "If you are a creative person, you can do a lot of research in endovascular surgery that allows you to improve lives."

Throughout the *Many Faces*. *One Mission*. philanthropic campaign, donors including David P. Storch and the Krist Foundation have generously supported educational opportunities in cardiovascular medicine such as fellowships. Commitments like these help equip tomorrow's cardiovascular experts to continue improving health in Houston and beyond.

"Our research fellows produce landmark contributions that change lives," Oderich says. "Philanthropy helps ensure we have the resources to support our fellows and to pursue the next innovations in endovascular aortic repairs."





#### **AFTER**

Oderich and Tenorio created customized stent grafts to divert blood away from the patient's aneurysms, helping to prevent aortic ruptures.





#### ON THE PULSE OF CARDIOVASCULAR CARE

Across UTHealth Houston, clinicians and researchers work together to develop solutions that save the lives of patients throughout Houston and beyond—patients like Jerry Ashworth.

Jerry's night began like any other Monday night, playing pickup basketball; however, he did not expect for it to end with a trip to the hospital. Focused on making shots and defending the other team, a sudden pop in his chest took his breath away.

"I stepped off the court and grabbed my shorts, trying to figure out what was wrong," Jerry says. "I was only 49 years old and exercised regularly. I had no family history of cardiac problems, but I started to wonder if I was having a heart attack."

Jerry, Senior Vice President and CEO of Memorial Hermann Cypress and Memorial Hermann Katy Hospitals, stayed on the sidelines drinking water and trying to walk off the discomfort while his son finished up the basketball game. When the pain in Jerry's chest did not subside, he asked his son to drive him to the emergency department at Memorial Hermann Memorial City Medical Center, where a team of nurses and physicians quickly ruled out a heart attack. Jerry's symptoms were not adding up, so a cardiologist conducted a physical exam, in which he detected a heart murmur. He ordered an echocardiogram to look for structural irregularities in Jerry's chest.

"He turned the screen toward me so I could see what was wrong. Something in my chest looked like a flag blowing in the wind," Jerry says. "It was my aortic wall." Jerry was experiencing an aortic dissection, a life-threatening condition in which the walls of the aorta tear. With symptoms that mimic other diseases—including a heart attack—aortic dissections can be difficult to diagnose, especially in young, healthy patients like Jerry.

In Jerry's case, the dissection resulted from an aortic aneurysm. When the blood vessel ruptured, it dislodged his aortic valve, creating a heart murmur. The cardiologist rushed to transfer Jerry to Memorial Hermann-Texas Medical Center for open heart surgery, where Anthony L. Estrera, MD, and his team were waiting to assess the situation.

"Aortic dissections generally impact people much older than Jerry," Estrera says. "But they can happen in younger patients and require rapid interventions." Estrera replaced Jerry's ascending aorta and aortic arch and repaired his valve during a five-hour surgery. Had Jerry waited much longer to go to the emergency department, he likely would not have survived.

"The surgery went well, and Dr. Estrera told me the repair will last 50 years," says Jerry. "That is perfect for me because I plan on living to 100."

For six weeks after his surgery, Jerry focused on recovery through cardiac rehabilitation, which gradually reintroduced him to routine daily activities. He also regularly checked in with Estrera and his cardiologist, Richard W. Smalling, MD, PhD, to ensure his aortic repair remained strong.

"The year after my surgery was an uphill climb. I lost nearly 30 pounds, and there was a time when I worried I was never going to be myself again," Jerry says. "I am so thankful to Dr. Estrera, Dr. Smalling, and the entire UTHealth Houston and Memorial Hermann teams to be where I am today."

Through his determination and the help of his care team, Jerry gradually returned to the activities he loves.





Anthony L. Estrera, MD

Hazim J. Safi, MD, Distinguished Chair in Cardiothoracic and Vascular Surgery

Professor and Chair, Department of Cardiothoracic and Vascular Surgery

McGovern Medical School at UTHealth Houston



Richard W. Smalling, MD, PhD

James D. Woods Distinguished Chair in Cardiovascular Medicine

Jay Brent Sterling Professor in Cardiovascular Medicine

Professor,
Division of Cardiovascular Medicine

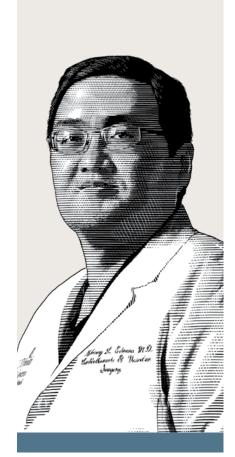
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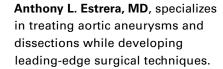
McGovern Medical School at UTHealth Houston

28 MANY FACES. ONE MISSION. IMPROVING HOUSTON'S HEALTH

# The many faces of cardiovascular medicine at - UTHealth Houston

From treating complex congenital heart conditions to investigating the genetic causes of heart disease and conducting surgical interventions for aneurysms and heart failure, the many faces of UTHealth Houston stand at the forefront of heart and vascular medicine. Philanthropy helps this elite team pursue innovative research and foster collaborations that pave the way for more effective prevention and treatment options across the full spectrum of cardiovascular conditions.





"For the past half-century, the Texas Medical Center has been the center of cardiovascular treatment, research, and education for the world. We strive to carry on that spirit of innovation and deliver unmatched, patient-centered cardiovascular care."



Biswajit Kar, MD, serves as a Chief of the Center for Advanced Cardiopulmonary Therapies and Transplantation, where he leads the field in interventional cardiology, structural heart disease, cardiogenic shock, advanced heart failure, and transplantation.

"With advanced therapies and surgical techniques, we can help patients with complex heart disease live longer and with a better quality of life than ever before."



Susan T. Laing, MD, provides compassionate cardiology care in Houston while evaluating cardiovascular disease in underserved populations along the United States-Mexico border to reduce health disparities and improve patient outcomes.

"Heart disease is truly preventable. If we want to make an impact on cardiovascular disease morbidity and mortality, the most cost-efficient approach is to focus on prevention."



Through the John Ritter
Research Program in Aortic and
Vascular Diseases, **Dianna M**. **Milewicz, MD, PhD**, works to
prevent premature deaths due
to acute aortic dissections.

"Family history is a major risk factor for thoracic aortic dissection. If we know who has the risk, we have a really good chance of preventing a death."



Gustavo S. Oderich, MD, pushes the boundaries of cardiovascular medicine by innovating minimally invasive surgical techniques to treat complex aortic conditions.

"Endovascular repairs have changed how we treat aortic diseases. We have everything we need to write the next chapter of cardiovascular surgery here in Houston, and our work is only beginning."



Families with children who have congenital heart problems come to Houston from around the world to see Jorge D. Salazar, MD, an expert in pediatric and congenital heart surgery who takes on the most challenging cases to deliver the best possible outcomes.

"There are many things in life we can't fix—people often must learn to live with their conditions. But congenital heart disease is something we can fix, and we can help these patients lead full lives."

MANY FACES. ONE MISSION. IMPROVING HOUSTON'S HEALTH — 31







through his job with U.S. Vets.

Bridgette R. Pullis, PhD, RN
Associate Professor, Department of

Undergraduate Studies

Cizik School of Nursing at UTHealth Houston



Margo Y. Melchor, EdD, RDH

Associate Professor,
Department of Periodontics and
Dental Hygiene

Director, Community Outreach

UTHealth Houston School of Dentistry

"When we ask veterans how long it has been since they had dental care, some will say decades," says Bridgette R. Pullis, PhD, RN, who leads the Veterans' Bachelor of Science in Nursing program at Cizik School of Nursing and helped start Give Vets a Smile.

Pullis, whose father served in the Naval Construction Battalion (commonly known as "Seabees") during World War II, saw the urgent need for dental care during her work with homeless veterans through U.S. Vets, an organization dedicated to ending homelessness among veterans. Many of the veterans Pullis encountered suffered from years of drug abuse that wrought severe damage to their oral health and left them missing teeth—a handicap in trying to find a job.

She approached Margo Y.
Melchor, EdD, RDH, to determine if the School of Dentistry could leverage the talent of its faculty and students to find a solution. Together, they launched the first Give Vets a Smile event in 2015.

"That first year, we were basically on a shoestring budget because no one knew us yet," says Pullis, who worked with U.S. Vets to invite veterans in need of care. "But we had a great response and ended up seeing about 90 patients."

In the years since and throughout the *Many Faces. One Mission.* campaign, community donors including Delta Dental Community Care Foundation and Amegy Bank have stepped in to help grow the program from a simple focus on pain relief to a range of oral health services offered by students, residents, and faculty from the School of Dentistry and Cizik School of Nursing.

The event begins with Pullis getting the word out to community veterans. She now has help from veterans like Sneed, who works at U.S. Vets.

"I make sure everybody at our housing community knows," he says. "I hand out flyers.

I put up poster boards. I knock on doors. I tell them it's more than just an opportunity to get your teeth cleaned, and that oral health can affect the whole body."

Students from Cizik School of Nursing help veterans fill out medical history forms, which can help avert life-threatening complications during treatment. On the day of the event, they conduct the initial intake for each veteran—determining the specific issue that needs care, screening for COVID-19, and taking vital signs while looking for conditions like high blood pressure that might require monitoring throughout the day.

Dental and dental hygiene students and residents work under faculty supervision to provide cleanings, basic screenings, and procedures like tooth extractions and root canals. They also watch for signs of more serious conditions like oral cancer. "After we complete their treatment during the event, we try to direct the veterans to a reliable dental provider they can afford, whether here at the school's clinics or out in the community," Sanchez says. "So, we're really trying to help them find a place where they can go and continue maintaining their oral health on a regular basis."

Since the Many Faces. One Mission. campaign began in 2015, the event has provided over \$275,000 worth of care to more than 500 veterans. Pullis and Melchor hope that with additional philanthropic support, they can expand Give Vets a Smile—currently held only once each year—to two days a year.

"It's not uncommon to have veterans call us asking how to obtain care," Melchor says. "So even though we are doing our best to address this need, we still have many more veterans in need of help."

That help has proven a lifeline for Sneed, who sees the event as a way to honor the sacrifices of those who served by providing quality oral health care that can relieve pain, restore confidence, and keep smiles on the faces of Americans who proudly wore the uniform.

"You have to admit, the people here are doing a great job," he says with a grin. "And my smile's the evidence."









IMPROVING HOUSTON'S HEALTH



# ADVANCING BRAIN AND BEHAVIORAL HEALTH

The ripple effects of brain and behavioral health conditions extend beyond individual patients. They can rob people of their memories, identities, and enthusiasm for life, impacting the families and communities who provide love and support.

That's why UTHealth Houston experts are at work exploring how the brain works and delivering new treatment options for patients everywhere. From addressing gaps in the understanding and care of mood disorders to providing hope and healing for children with brain tumors, our experts are pushing the frontiers of brain and behavioral health every day.

Scan the QR code with your mobile device.



#### MORE THAN A NUMBER

Leading the state in personalized behavioral health care

#### MARCHING ON WITH HOPE

Reimagining care of pediatric brain tumors





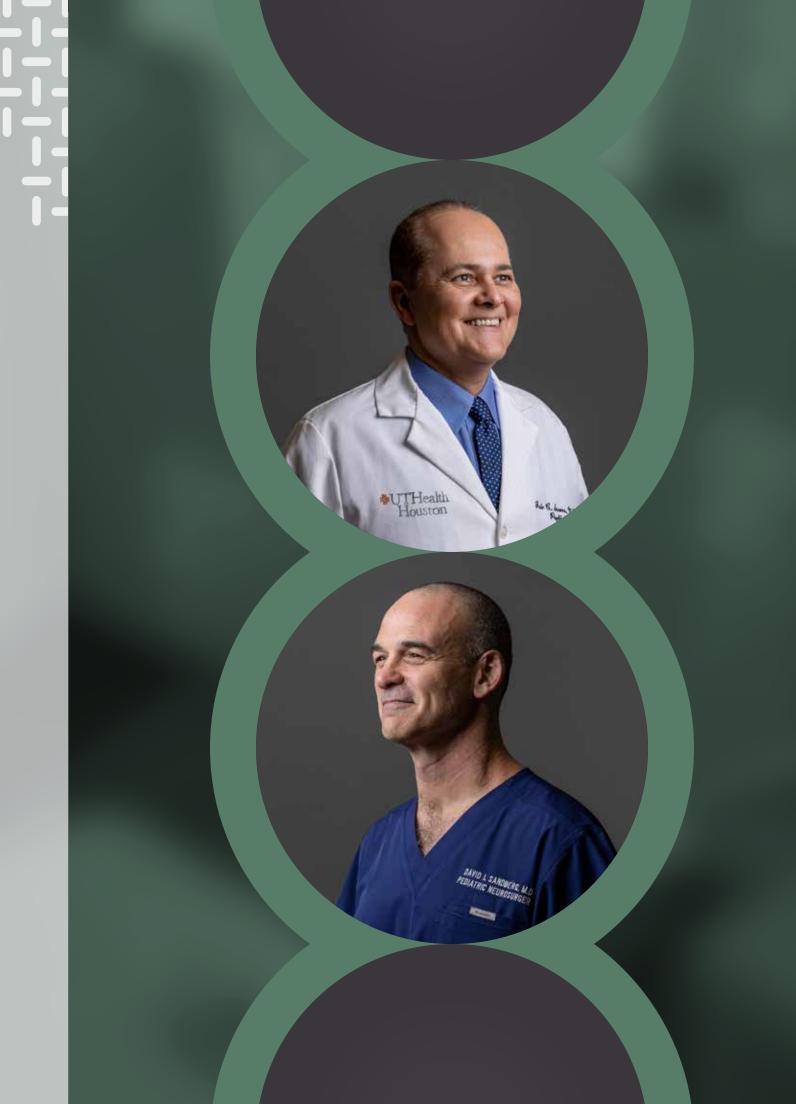
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LEADING THE STATE IN PERSONALIZED BEHAVIORAL HEALTH CARE

The statistics are staggering. One in five adults will struggle with a behavioral disorder during their lifetime, and the ripple effects reverberate throughout the community, straining hospitals and public institutions. Behavioral disorders are responsible for one out of every eight visits to the emergency department, and more than eight million Americans care for an adult family member with a behavioral disorder, averaging 32 hours a week in unpaid care.

> With only 10 state psychiatric hospitals across Texas to serve its 29 million residents, the waiting list—issues because of how important for treatment can easily amount to months, and private facilities may not be covered by insurance, resulting in thousands of dollars in out-of-pocket expenses.

Yet the real story lies beyond what the numbers tell us; it lies in the lives disrupted, the dreams dashed, and the anguish lived through every day.

"We need to emphasize behavioral health now and address those they are, how prevalent," explains Jair C. Soares, MD, PhD. "It's a major cause of disability worldwide. These are very common conditions that need to be better addressed so that people can live fuller, happier lives."

Alongside the experts in the Faillace Department of Psychiatry and Behavioral Sciences, Lokesh Shahani, MD (left), and Jair C. Soares, MD, PhD (right), stand at the forefront of delivering much-needed personalized care for patients with behavioral disorders.

#### Lokesh Shahani, MD

Associate Professor,
Faillace Department of Psychiatry and
Behavioral Sciences

McGovern Medical School at UTHealth Houston

Chief Medical Officer, UTHealth Houston Behavioral Sciences Campus



#### Jair C. Soares, MD, PhD

Pat R. Rutherford, Jr. Chair in Psychiatry

Professor and Chair,
Faillace Department of Psychiatry and
Behavioral Sciences

Director, Center of Excellence on Mood Disorders

McGovern Medical School at UTHealth Houston

Executive Director,
UTHealth Houston
Behavioral Sciences Campus



For years, behavioral health experts in the Louis A. Faillace, MD, Department of Psychiatry and Behavioral Sciences at McGovern Medical School at UTHealth Houston have dedicated themselves to pursuing discovery, clinical, and translational research and offering individuals and their families access to the latest treatments and therapies.

In spring 2022, UTHealth Houston strengthened its commitment to behavioral health when it opened the doors of a new facility that, combined with the UTHealth Houston Harris County Psychiatric Center (HCPC), has created the largest academic psychiatric hospital in the nation. A collaboration with the Texas Health and Human Services Commission, the new facility, which carries the name of the John S. Dunn Behavioral Sciences Center, adds 264 beds to the existing 274 beds at UTHealth Houston HCPC.

"The new hospital improves access to inpatient psychiatric care for our community," says Lokesh Shahani, MD. "It provides us an opportunity to develop innovative and personalized ways of caring for individuals suffering with mental illness."

Shahani says the goal is to create a more complete continuum of care by providing step-down beds for those patients who need more time in the hospital, something the region previously lacked. In the future, patients could transition from acute to subacute care in the hospital, to a partial hospitalization program, to an intensive outpatient program, and finally to outpatient-only care. This is critical to easing and reintegrating patients back into the community.

The Dunn Center Building will also allow the university to double the number of psychiatric residents. "When this happens, we will have the largest psychiatric residency program in the nation," says Shahani.

"We are building a massive footprint in behavioral health at UTHealth Houston," says Soares. "We now have the Behavioral Sciences Campus in addition to close to 20 sites in the community and partnerships with hospitals throughout the Texas Medical Center."



The Center of Excellence on Mood Disorders includes an active research and clinical team dedicated to finding biological markers and targets for definitive treatment for patients with mood disorders, such as bipolar disorder and depression.



The Center for
Neurobehavioral Research
on Addiction researches
new therapies and develops
evidence-based treatments
for addiction and substance
use disorders informed
by behavioral neurosciences.



The Brain Collection for Research in Psychiatry
Disorders houses brain tissue to help understand how the brain functions and how it regulates behavior to identify the biological causes of behavioral disorders.



The Trauma and Resilience
Center is a multidisciplinary
treatment, research, and
education center devoted to
helping people who experience
psychological problems
in the aftermath of traumatic
life experiences.

More patients translates into more research. "The Dunn Behavioral Sciences Center will help us grow exponentially at the same proportion on the research side," says João de Quevedo, MD, PhD. "With longer treatment programs, patients can be enrolled in more comprehensive research."

De Quevedo balances seeing approximately 40 patients a week for mood disorders with leading the Translational Psychiatry Program in the Faillace Department of Psychiatry and Behavioral Sciences. The Translational Psychiatry Program sits at the center of four overlapping focus areas—the Center of Excellence on Mood Disorders, the Center for Neurobehavioral Research on Addiction, the Brain Collection for Research in Psychiatry Disorders, and the Trauma and Resilience Center.

"In translational research, we work on the basis of the disease to discover how it develops and why. From there, we propose new therapies," explains de Quevedo. To do that, researchers work in tandem with clinicians to obtain patient data, neuroimaging, and blood samples and to employ genomic, behavioral, epidemiological, and bioinformatics approaches.

For example, researchers are investigating the accelerated aging that happens in people with bipolar disorder.

"There is the chronological age that is on your driver's license, and then there is biological aging," says de Quevedo. This biological aging is associated with non-psychiatric conditions like cardiometabolic disease and cancer. "The data show that patients with behavioral disorders age quicker biologically versus chronologically. We are trying to understand why and how to prevent that."

The team has a large focus on treatment-resistant behavioral disorders. Patients who do not respond to traditional treatment are more likely to be on disability, attempt suicide, and have increased health expenditures.

"These patients have been sick most of their lives. They give up their dreams. They drop out of college. Their relationships suffer, and they are unable to hold a job," explains de Quevedo. "When you treat them, and you are able to bring them back to normalcy, it's life-changing. These are the people we would really like to help because the others are already served by traditional treatments."

Building on evidence that bipolar disorder is linked to the loss of neurons and increased inflammation in the brain, Soares and de Quevedo are initiating the first pilot study to determine whether stem cells—which have been shown to stimulate neuron growth after a stroke—can effectively treat complex behavioral disorders like treatment-resistant bipolar depression.

Part of the Dunn Foundation's transformational gift—which the Dunn Behavioral Sciences Center was named in honor of—is designated for research like this, an endeavor they have supported since their giving began in 1986. Similarly, Anthony Faillace made a significant commitment in honor of his father and founding chair of psychiatry at UTHealth Houston, Louis A. Faillace, MD, which created faculty chairs that provide resources for behavioral research and educational programs.

Understanding the importance innovation plays in ending suffering, Elizabeth and Drew Kanaly created a research endowment to help find answers, and Yvonne and Walter Johnson made a substantial estate commitment to ensure work like this continues long into the future. They join a growing list of individuals and foundations committed to advancing behavioral health.

"The impact of philanthropy goes beyond what is seen through a donor's initial gift. It impacts other researchers, who produce preliminary data to apply for grants to keep programs going," de Quevedo says. "Without our donors, we would not be competitive."

But there is still work to be done.

"I really believe that we are now where the field of oncology was 30 years ago, before major investments created a much better understanding of the pathways and mechanisms involved in causation," says Soares. "This is in many ways still the last frontier in medicine."



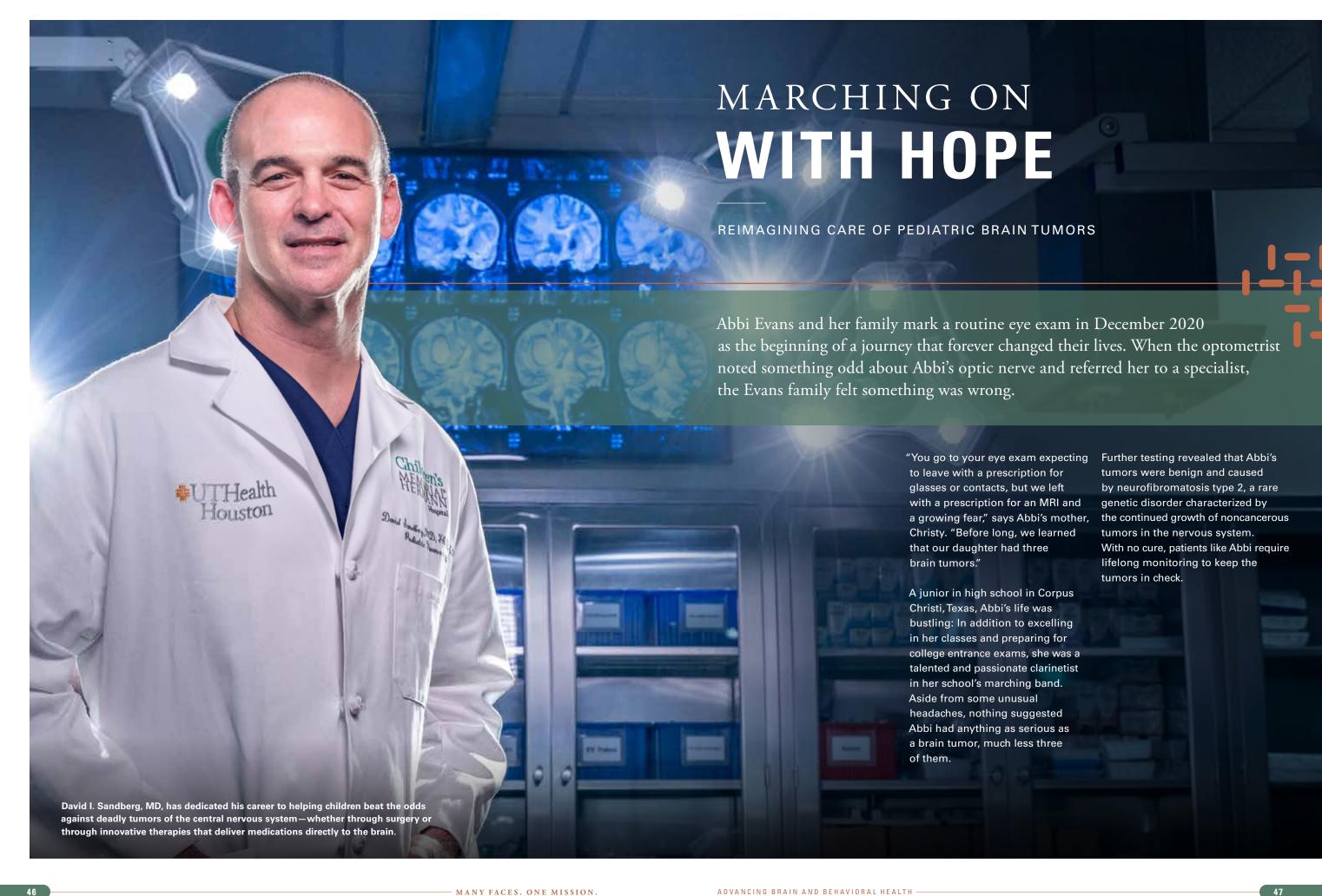
João de Quevedo, MD, PhD

Professor, Faillace Department of Psychiatry and Behavioral Sciences

Director,
Translational Psychiatry Program

McGovern Medical School at UTHealth Houston







David I. Sandberg, MD

Dr. Marnie Rose Professor in Pediatric Neurosurgery

Director, Division of Pediatric Neurosurgery

**Department of Pediatric Surgery** 

McGovern Medical School at UTHealth Houston



Stacey L. Hall, DO

Assistant Professor,
Department of Physical Medicine
and Rehabilitation

McGovern Medical School at UTHealth Houston Doctors promptly ordered additional MRIs to check the rest of Abbi's nervous system and found another benign tumor, called an ependymoma, on her spinal cord. With the tumor encroaching on vital nerves in her spinal cord, the family contacted neurosurgeon David I. Sandberg, MD, at McGovern Medical School at UTHealth Houston and UTHealth Houston Neurosciences. He advised them to drive to Houston for emergency surgery to remove the tumor.

Although the trip between Corpus Christi and Houston is typically an uneventful 3.5-hour drive, a historic weather event was brewing. Sweeping from the northwest, Winter Storm Uri strengthened into a life-threatening natural disaster and took aim at Houston.

"Dr. Sandberg had no choice but to immediately schedule Abbi for surgery the day after we arrived, which was when the storm was predicted to hit," says Christy. "He told us he would walk to the hospital for Abbi if he had to, and when the storm shut down the city the next day, he kept his word."

Sandberg trudged through more than a mile of sleet, snow, and ice to reach Children's Memorial Hermann Hospital. Despite an unpredictable commute, Abbi's surgery went as planned, and Sandberg successfully removed the tumor while preserving her spinal cord.

Following surgery, Abbi spent five weeks in physical rehabilitation at TIRR Memorial Hermann to regain her mobility and coordination. Her therapy team was led by Stacey L. Hall, DO, Director of Pediatric Rehabilitation Medicine at TIRR Memorial Hermann.

"One of my main goals following surgery was to rejoin the marching band,"
Abbi recalls. "My therapists incorporated my clarinet into our sessions by having me clean it, put it together, and practice breathing exercises."

Abbi completed her rehabilitation just in time to take the field again with her marching band. Building off that momentum, she graduated eighth in her class, and in fall 2022, she will begin her college education with the hope to one day work in the health care field.

"I may face more challenges and surgeries, but I know I'm in the best hands with Dr. Sandberg," says Abbi. "I want to take these experiences and the example Dr. Sandberg provided to care for my own patients in the future."









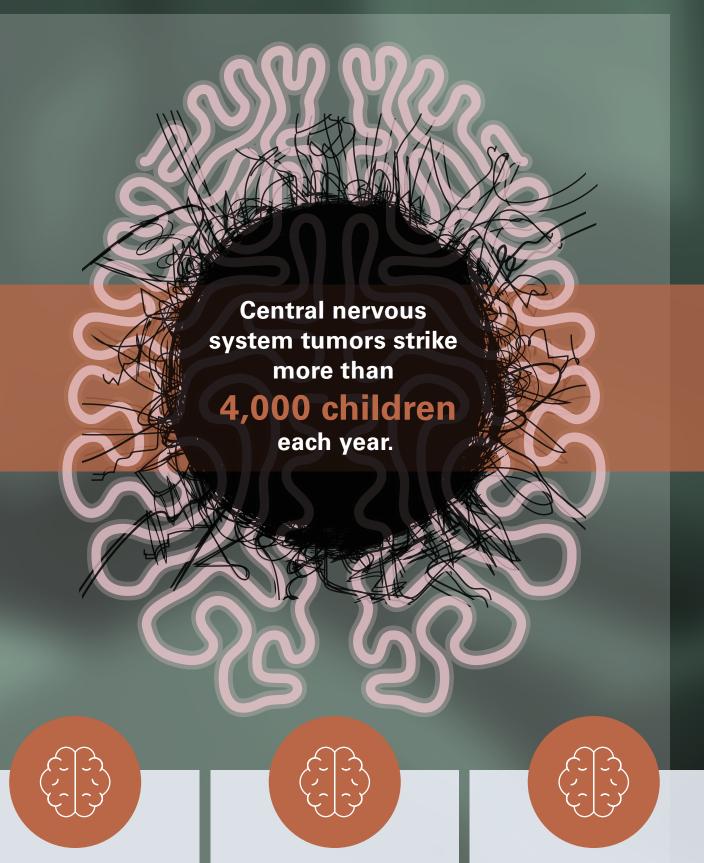






MANY FACES. ONE MISSION.

ADVANCING BRAIN AND BEHAVIORAL HEALTH



Brain and spinal cord tumors are the second most common cancers in children.

Among childhood cancers, brain tumors are the leading cause of death.

There are more than
150 different types of brain
tumors, complicating
research and treatment.

#### BANDING TOGETHER FOR BETTER OUTCOMES

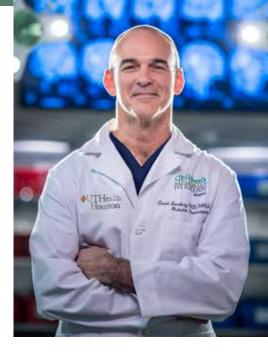
Central nervous system tumors strike more than 4,000 children each year, and they hold the terrible distinction of being the deadliest type of childhood cancer. While benign tumors like Abbi's can be extremely dangerous, cancerous tumors present additional challenges of growing rapidly, spreading throughout the body, and destroying nearby tissues.

"The brain has an incredible defense system called the blood-brain barrier, which protects it against toxins and infections, including traditional chemotherapy and other cancer medications," says Sandberg, who conducts groundbreaking research to provide more effective treatment options for children with brain tumors. "To bypass this defense system, physicians usually have to administer these therapies at large doses, which can make children severely ill. We are researching how to sidestep those issues by delivering medications directly into the brain to target tumors."

In one clinical trial, Sandberg's team is studying whether a combination of two medications—a traditional chemotherapy and an antibody-based drug that activates the immune system to destroy cancer cells—infused into the brain can treat children with recurrent malignant brain tumors.

"By combining these medications and infusing them into the brain, we hope to eliminate the tumor cells without causing toxic levels of the medications in the bloodstream," says Sandberg. "This type of treatment could allow us to avoid the devastating side effects of traditional chemotherapies, which include a weakened immune system, extreme fatigue, and hair loss. We want to give growing children the best chance for a healthy childhood and a full, happy life."

Throughout the Many Faces. One Mission. campaign, philanthropy has empowered Sandberg and his team to pursue breakthroughs in the way we treat central nervous system tumors in children. The Dr. Marnie Rose Foundation established the Dr. Marnie Rose Professorship in Pediatric Neurosurgery in memory of Marnie Rose, MD, a graduate of McGovern Medical School who passed away at the age of 28 from a rare form of brain cancer. Additionally, Shaun Varghese, MD, and his wife, Cristina Marchesano, MDboth graduates of McGovern Medical School—established the THINK Neurology Chair in Pediatric Tumor Research.



"The power of these endowments is that they will continue to provide resources in perpetuity to advance our work," says Sandberg. "They stand as testaments to the enduring impacts made by Drs. Rose, Varghese, and Marchesano on our communities."

Federal funding for innovative research like Sandberg's is extremely limited and competitive, making donor support vital for continued advances.

"We do everything with the mission to bring hope to children with central nervous system tumors," says Sandberg. "Philanthropy enables us to harness the ingenuity and expertise at UTHealth Houston to nurture one-of-a-kind ideas and grow them into initiatives that make a difference for families here and around the world."

Cancer can bring life to a standstill, but the ingenuity of UTHealth Houston experts like Sandberg—bolstered by the generosity of donors—continues to help families such as Abbi's find hope and march on.

### ILLUMINATE THE PATH

FOR FUTURE GENERATIONS

After restoring cars and engines for 30 years, Arthur Jeske, DMD, PhD, knows what it takes to build something that lasts. He has seen UTHealth Houston School of Dentistry thrive through changing circumstances and new challenges, buoyed by the dedication of its students and the ingenuity of Jeske's fellow faculty. Determined to ensure the school's students and faculty will continue to succeed in the years ahead, Jeske is lighting the way forward with an estate commitment to the School of Dentistry. Visit go.uth.edu/Jeske to read his story.

The many faces of UTHealth Houston provide world-class care across the Greater Houston area through clinical practices and affiliated hospitals that meet our community's preventive, chronic, and urgent medical needs. By offering leading-edge treatments and patient-centered care—and training students to follow in their footsteps—our experts work each day to keep our families, friends, and neighbors healthy.

### UT\* Physicians

UT Physicians, a 501(c)(3) tax-exempt organization, is the clinical practice of McGovern Medical School at UTHealth Houston. Through more than 80 specialties that include neurosciences, orthopedics, heart and vascular health, and women's and children's health, our faculty offer urgent, highly specialized, or complex care to individuals and families in Houston and across Harris County and surrounding areas. Our experts also provide high-quality, wellness-oriented primary care for routine illnesses and maintenance of good health.

utphysicians.com



#### **UT**\*Dentists



UT Dentists is the multidisciplinary faculty practice of UTHealth Houston School of Dentistry. Specialists and faculty dentists treat patients with every type of dental problem to improve oral health, which is essential to improving overall wellness.

#### UT\*Health Services



UT Health Services is a nationally recognized nurse-managed primary care center through Cizik School of Nursing at UTHealth Houston. Nurse practitioners provide patient care in collaboration with a UTHealth Houston physician.

#### PRIMARY TEACHING AND AFFILIATED HOSPITALS

Children's Memorial Hermann Hospital Harris Health Lyndon B. Johnson Hospital Memorial Hermann-Texas Medical Center

TIRR Memorial Hermann
The University of Texas MD Anderson Cancer Center
UTHealth Houston Behavioral Sciences Campus









The UTHealth Houston story has always been one of quality care and innovation. With each discovery we make and every patient we heal, we strive to improve health for all people throughout our communities. Thanks to you, our closest friends and supporters, their future—and ours—is brighter than ever.

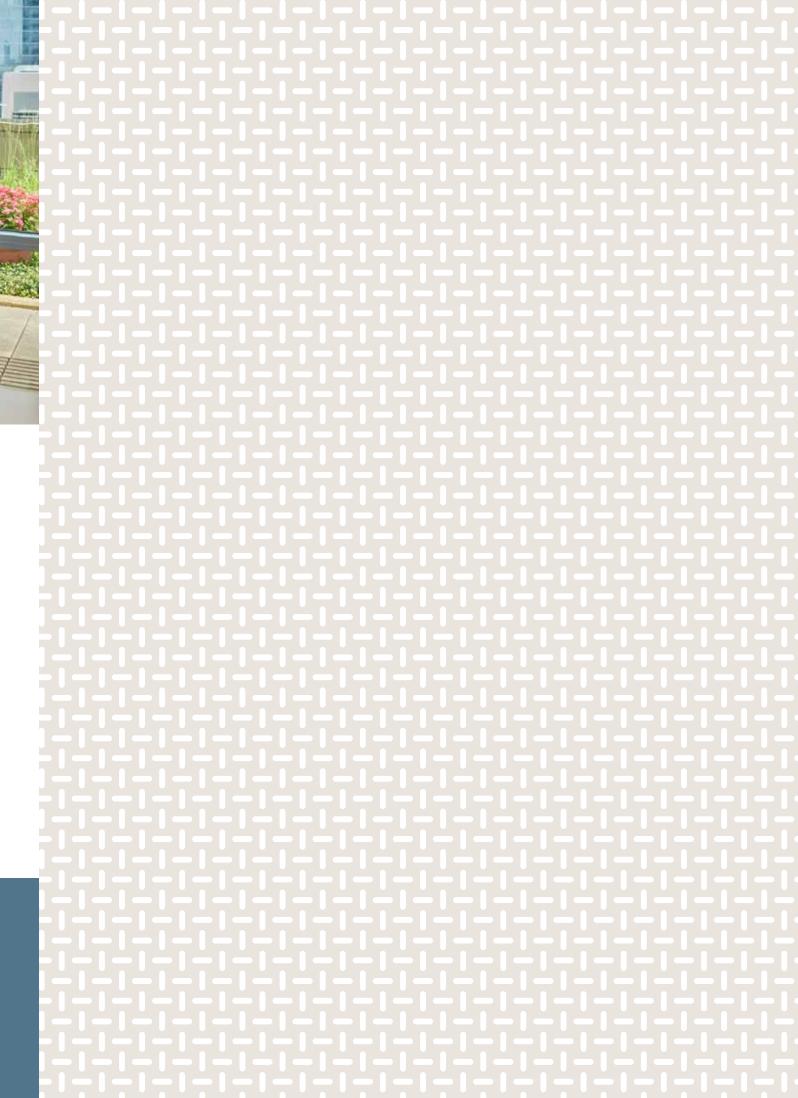
Your generosity and dedication deliver new hope to patients facing challenging health conditions. Your commitment brings new research and educational opportunities to life. It is truly inspiring to see how you empower our students and faculty—and to imagine what we will achieve together in the coming years.

Thank you for being one of the many faces of UTHealth Houston.

#### OUR CAMPAIGN CABINET

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#### The Campaign for UTHealth Houston

To learn more about how we are discovering breakthrough advances in the prevention and treatment of disease, please contact:

UTHealth Houston
Office of Development

7000 Fannin Street, Suite 1200 | Houston, Texas 77030 713-500-3200 giving@uth.tmc.edu

#### uth.edu/many-faces-one-mission

By supporting UTHealth Houston, you help to push the frontiers of discovery to improve health in our communities.



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