

# OUT IN FRONT

WINTER 2019

## HEALTHY AGING

### COVER STORY

#### **Without skipping a beat**

*UTHealth congenital heart disease experts repair complex heart defect*

#### **The right care, the right time, the right place**

*Family gives back after extraordinary care across generations*

#### **Beyond teeth**

*How dentistry can make a lifesaving difference to the entire body*

# UTHealth's Comprehensive Campaign

To improve health care and the well-being of our family, friends, and neighbors, we are planning for our first comprehensive campaign focusing on three themes that resonate most with our community.

## BRAIN AND BEHAVIORAL HEALTH



Brain and Behavioral Health conditions are common and affect multiple areas of a person's life including movement, thought, mood, body function, and mental state. We are susceptible to a myriad of brain-related disorders throughout every stage of life and even more so as we age.

## HEALTHY AGING



Healthy Aging is all-encompassing, spanning from preconception to geriatric care and integrating all organ systems in the body. We care for families across the life continuum to help our community celebrate more of life's precious moments.

## WOMEN'S AND CHILDREN'S HEALTH



Women's and Children's Health begins before we are born, and it carries us through some of our most treasured moments — from genetic counseling for expectant mothers to pediatric medicine and instructional tools that address the education and developmental needs of all children.

### STORY LEGEND

The many faces of UTHealth are dedicated to delivering exceptional care to people of all ages, training the health care leaders of tomorrow, and conducting groundbreaking research to improve the health and well-being of our communities. Each story in *Out in Front* is aligned with one or more of these mission areas, indicated by the icons below.



EDUCATION



RESEARCH



PATIENT CARE

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### ABOUT THE COVER

A former surgical oncologist who transitioned careers to practice law, Stephen A. Barnes, MD, JD, led an exceptionally productive and active life. When extreme fatigue derailed him at 51, his surgical instinct drove him to a shocking diagnosis: congenital heart disease had been insidiously exhausting his heart all his life.

Thanks to the rapid response and surgical precision of UTHealth heart experts—including a former surgical resident Stephen helped mentor at Johns Hopkins Hospital—Stephen's heart now functions properly for the first time, adding a new pep to his step.

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Wherever the art  
of medicine is loved,  
there is also  
a love of humanity.

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**Hippocrates**

A Greek physician of the Age of Pericles,  
who is considered one of the most outstanding  
figures in the history of medicine

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## WITH GRATITUDE

We are honored that you have joined UTHealth on our journey to improve the health and well-being of our communities both locally and globally. With leaders researching and treating all systems in the body—from dentistry to cardiovascular care to orthopedics—UTHealth is uniquely well-positioned to tackle healthy aging.

Within the pages of this issue, you will find stories about how the many faces of UTHealth are collaborating to care for our communities here and now and far into the future—from our patients who are living healthier and longer to our students who will continue to shape health care for generations to come.

Your commitment, combined with like-minded philanthropic partners, creates an environment rich with resources for our faculty, staff, and students to collaborate with the shared vision of creating a healthier future for everyone at every stage of life.

On behalf of people whose lives you have improved and the families you have helped rebuild, we simply say: **Thank you.**

**Giuseppe N. Colasurdo, MD**

UTHealth President  
Alkek-Williams Distinguished Chair



## THE RIGHT CARE, THE RIGHT TIME, THE RIGHT PLACE

FAMILY GIVES BACK  
AFTER EXTRAORDINARY CARE  
ACROSS GENERATIONS



It all started in 1980  
with a stroke of serendipity  
on South Tatar Street.

Bill Stanley, a businessman in Pasadena, Texas, had recently founded Ventech Engineers, Inc., an engineering construction business that designed modular oil refineries and shipped them to destinations around the globe. A few doors down, Thomas J. Murphy, MD, opened his medical practice as a solo primary care physician.

One day, Bill could not shake a tenacious headache and decided to visit the doctor next door in search of relief. Although his headache was a simple fix for Murphy, Bill had no idea just how important this doctor would become to him and his family.

Since that meeting almost four decades ago, Bill grew his business to over 1,000 employees while he and his wife, Alvern, nurtured five children and eight grandchildren. Murphy, who joined McGovern Medical School at UTHealth in 2011, stood beside the Stanleys for every milestone, runny nose, broken bone, and medical emergency.

“Over the years, I’ve become so confident in Dr. Murphy’s abilities as our primary care physician,” says Bill, who now serves on the UTHealth Development Board. “He gets to the root of each issue and coordinates with specialists across UTHealth who deliver the same excellent care he does.”

As the Stanley family has grown and matured, Murphy has made countless routine diagnoses and treated a myriad of common health issues, but he has also prompted life-changing interventions.

## The heart of the issue

Bill vividly recalls the panic that gripped him during a weekend in New York City in 2014. “I was struggling to breathe, and I immediately scheduled an appointment with Dr. Murphy for the moment my plane touched down in Houston,” says Bill. “By the time I saw him, I was certain my lungs were failing.”

But he was wrong. After a quick evaluation, Murphy discovered that Bill had aortic valve stenosis—a narrowing of the main artery that carries blood from the heart to the rest of the body—and he needed surgery immediately. Murphy coordinated with UTHealth cardiologist, David D. McPherson, MD, to repair Bill’s aortic valve.

“There are hundreds of conditions that can cause shortness of breath, and it is impossible for a patient to diagnose him or herself,” explains Murphy. “My role is to diagnose exactly what’s wrong with my patients and coordinate with specialists to get them the care they need when they need it.”

More than four years after his successful heart operation, Bill attributes his continued exuberance to Murphy’s collaboration with McPherson. “Dr. Murphy will put Dr. McPherson on speakerphone during our appointments to make sure I understand what’s going on,” says Bill. “They give me the confidence that I’m in the most capable hands.”



UTHealth President Giuseppe N. Colasurdo, MD (left), shares smiles with the Stanley family at the 2018 Constellation Gala. From left to right are Alvern and Bill Stanley with their daughter Shari and her husband Bryan Bogle.

## A dire intervention

Murphy also transformed the outcome for Bill’s son Scot after he suffered a stroke early one morning. Paramedics rushed Scot to a local emergency room, where doctors struggled to diagnosis the stroke and deliver timely treatment. Without neurologists specialized in stroke recovery and care, the local hospital doctors told the Stanley family that Scot would not make a full recovery from the cognitive challenges and physical weakness caused by the stroke. Bill called Murphy, urgently seeking advice and hope for his son.

Murphy immediately devised a plan of action, transferring Scot from the local hospital emergency room to Memorial Hermann-Texas Medical Center, where he was placed under the care of UTHealth neurologist Louise D. McCullough, MD, PhD. McCullough gave Scot a different prognosis.

“We can fix it,” she told him. “You’ll have to make lifestyle changes, but you will lead a normal life.” Scot received individualized care from McCullough’s team to optimize medical therapy to limit the damage caused by the stroke and preserve brain tissue.

Murphy’s intervention changed Scot’s future and delivered the answers the Stanley family so desperately sought. “By intervening, we were able to coordinate the appropriate care at the right time at the right place,” says Murphy.

## An opportunity to give back

In December 2017, Bill felt it was his turn to give back, and he made a generous \$2 million commitment to establish the Stanley Family Distinguished Chair of Population Health and Community Medicine—McGovern Medical School’s first chair in population health.

“Dr. Murphy has done so much for me and my family, and I want to reciprocate for the commitment and care he shows each day,” says Bill. “I know he will use these resources to serve more people the way he has served my family.”

Decades have passed since Bill first wandered into Murphy’s office, and South Tatar Street was renamed long ago, but the roots connecting the Stanleys and Murphy have only grown deeper.



**David D. McPherson, MD**

James T. and Nancy Willerson Chair,  
Department of Internal Medicine

Professor and Director, Division  
of Cardiovascular Medicine

McGovern Medical School at UTHealth



**Louise D. McCullough, MD, PhD**

Roy M. and Phyllis Gough Huffington  
Distinguished Chair

Professor and Chair, Department  
of Neurology

McGovern Medical School at UTHealth



**Thomas Murphy, MD**

Stanley Family Distinguished Chair  
of Population Health and Community  
Medicine

Assistant Dean, Community Affairs  
and Health Policy

Assistant Professor, Department of  
Family and Community Medicine

McGovern Medical School at UTHealth

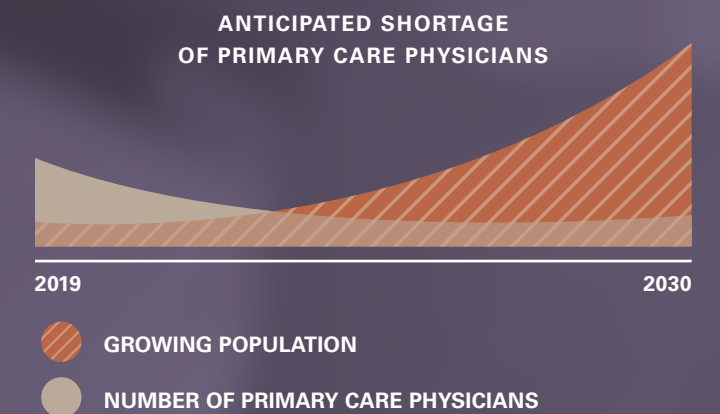
# HEALTH IS PRIMARY

Vaccinations. Antibiotics. Food safety. Advances in public health in the 20th century have added 25 years to the life expectancy of United States citizens. Primary care physicians such as Murphy are at the forefront of public health initiatives, addressing how to best care for populations.

As Chief Medical Officer for UT Physicians Community Clinics, Murphy examines the social determinants that can restrict a population’s access to medical care. He has championed population health initiatives by ensuring UT Physicians clinics have social workers, community health workers, health care attorneys, and nurse case managers to help patients navigate the health care system and to open access to underserved populations.

Additionally, first-year students at McGovern Medical School at UTHealth are required to shadow primary care physicians in clinic to cultivate interest in this field. Commonly, students at medical schools are not exposed to the primary care field until their third year when they may have already decided to pursue a career in a medical specialty.

The Stanley Family Distinguished Chair of Population Health and Community Medicine will help Murphy and McGovern Medical School address the social determinants of medical care by championing innovative public health initiatives and training future leaders in the primary care field.



The US faces a projected shortage of primary care physicians ranging from **7,300 to 43,100 physicians** by 2030—mainly due to population growth and aging.

# A YOUNG FIELD OF MEDICINE

NEW INITIATIVE TO FILL CRITICAL GAPS IN GERIATRIC HEALTH TRAINING



“There is a lot of practical knowledge about dealing with the health issues of people in old age that you’re not going to get from a textbook. There’s certainly a lack of formal instruction, but there is also a lack of hands-on modeling of what you do in certain situations.”

## Carmel B. Dyer, MD

Nancy P. and Vincent F. Guinee, MD Distinguished Chair  
Roy M. and Phyllis Gough Huffington Chair in Gerontology  
Professor, Department of Internal Medicine  
Division of Geriatric and Palliative Medicine  
McGovern Medical School at UTHealth  
Executive Director, UTHealth Consortium on Aging



After examining the older person, emergency room doctors diagnosed an infection and sent him home with antibiotics. He fell repeatedly during the next few days and wound up back in the hospital—this time with acute kidney and liver failure.

“They treated him with an antibiotic that was probably four times the dose they should have given someone his age,” says Carmel B. Dyer, MD, Executive Director of UTHealth Consortium on Aging.

Only two percent of practicing physicians in the United States qualify as geriatricians. Dyer, one of these select physicians, knows that older adults react to medication differently than younger patients. Yet fewer than three percent of medical students choose the courses in geriatric medicine that could help them spot similar hazards. More than half of all medical and nursing schools have no structured geriatric curriculum at all.

Dyer and her colleagues at the consortium—a collaboration of UTHealth experts focused on the health of older adults—are laying the groundwork for an initiative to help close these training gaps among current health professionals.

The Consortium on Aging is now developing the Geriatric Interprofessional Education Program, an 18-month certificate program administered by the consortium that will provide essential geriatric health training to professionals from across disciplines, including doctors, nurses, dentists, pharmacists, and social workers.

The program will incorporate online and in-person learning, delivering hands-on experiences that show participants how to care for the complex needs of older adults. Dyer explains that if she went to the hospital today for a stomach bleed, doctors may simply find an ulcer and treat it. But she wants to prepare health professionals for the same symptoms in her 90-year-old self.

“It could be an ulcer, or it could be all the medications I’m taking,” she says. “I might come in confused with hypertension and several other diseases, and I might have dementia and not be able to clearly explain everything. Then, once you discharge me from the hospital, I can’t walk because I have a bad knee that stiffened up while lying in the bed all day.”

Dyer and her team have begun meeting with faculty across UTHealth to develop the curriculum for the program, which will include topics such as proper medication prescribing, recognizing the difference between illness and normal aging, and managing multiple chronic conditions. Thanks to a generous gift from the Wyatt Foundation, they plan to begin training approximately 140 health professionals each year with the first cohort starting in 2019.

The older man recovered fully after the treatment was stopped. Dyer and the members of the Consortium on Aging are working to better equip the health care workforce with the skills needed to meet the needs of an emerging population of patients.

Top Photo: Holly M. Holmes, MD (right), Director of the Division of Geriatric and Palliative Medicine at McGovern Medical School, delivers the personalized, age-specific care that will feature prominently in the new education program.

Bottom Photo: Few physicians choose to practice geriatric medicine like Carmel B. Dyer, MD (left), creating an urgent need for health professionals who understand the unique needs of a growing older population.





# STAY OFF THE LIST

JLH FOUNDATION'S GIVING MAY LEAD TO SYSTEMATIC CHANGE IN ORGAN TRANSPLANTS

When a loved one is added to the list for an organ transplant, it places an inordinate amount of stress on the entire family. Paula Hern's family was no different.

"I was in Austin, driving every week to see him in Houston during that time," Paula recalls the time when her father, John, was first placed on the heart transplant list. "Looking back, that doesn't seem like enough."

The whole family was thrown into an unfamiliar and foreign process. For more than eight months, they waited anxiously for a heart to become available. But even after a donor was found, the process was emotionally difficult to navigate—both painful and joyous.



On average, **20 people** die a day while waiting for an organ transplant.

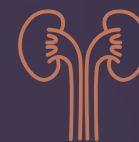


Nearly **4,000 Americans** are waiting for a new heart.

Only about **2,000 heart transplants** are performed annually.



The cost to a hospital to perform a heart transplant can run upwards of **\$1.4 million**.



A kidney transplant will cost hospitals approximately **\$400,000**.



The JLH Foundation was founded in memory of John L. Hern, who was hospitalized for 252 days while waiting for a heart transplant.

# STAY OFF THE LIST!

“For most transplants, you know you got this second chance because someone else died. For my father, it was a young man killed in a bus accident,” says Paula.

While waiting in the hospital for a heart transplant, John, a successful Houston businessman, realized that many others in the same situation could not afford the hefty associated costs. Without insurance, an organ transplant can run hundreds of thousands of dollars in direct costs. This instilled in him a desire to help these families.



**Bing Yu, PhD**

Assistant Professor,  
Epidemiology, Human Genetics,  
and Environmental Sciences

UTHealth School of Public Health

“Once a person has end-stage kidney disease or congestive heart failure, you can’t cure it; you can’t reverse it,” says Eric Boerwinkle, PhD. “Unfortunately, for those people, the result is usually death.”

Before John could realize this newfound mission, he underwent transplant surgery. However, his body rejected the new heart, and he died 10 months later.

Shortly thereafter, the JLH Foundation was formed with Paula as the Chair. “As a foundation, our interest began with helping people with the associated expenses of a transplant,” explains Paula. “As we have been doing this for a longer period of time, we thought it was a natural second step to fund research that will circumvent people needing a transplant and putting families through what we had to endure.”

In 2016, Paula met Boerwinkle and Bing Yu, PhD, who were researching the mechanisms behind end-stage heart and kidney failure. Intrigued by their research, the JLH Foundation committed \$1.3 million to fund the first phase of the Stay Off the List! research program.

A major cause of heart and kidney failure that leads to the need for a transplant is uncontrolled high blood pressure. Less than two years later after the JLH Foundation’s initial commitment, the research team uncovered a vital compound linked to high blood pressure and a contributor to organ failure. Furthermore, they determined that a diuretic (a low-cost blood pressure medication) helped eliminate this compound from the body, thereby lowering the risk for organ damage. These results have astounding implications for thousands of people.

“These findings happened fairly quickly,” adds Paula.

With these results nestled in their pocket, Boerwinkle and Yu sought to move their research forward and, hopefully, make a systematic change to avoid organ transplants altogether. However, this time they needed nearly double the resources, \$2.6 million, to complete the task.

“I certainly hesitated because of the size of the gift—it is the largest the foundation has given,” says Paula. “But the potential for this research to produce worldwide change eroded my concerns.”

What drew Paula in was a personal story from Boerwinkle, talking about his own struggle with

his doctor to shift to a diuretic to manage his blood pressure. “Someone who believes in this wholeheartedly and is able to stake their own health, that certainly struck a cord,” she says. “It certainly hit me as something he truly believes in—not just for others out there, but for himself.”

“People will always need transplants,” says Boerwinkle. “But it’s our job to make sure there are fewer of those people, that there’s more success in a transplant. And there’s a better, faster way to get this done: donor support like that from the JLH Foundation.”



**Eric Boerwinkle, PhD**

Dean  
M. David Low Chair in Public Health  
Kozmetsky Family Chair in Human Genetics  
Professor, Human Genetics Center and Department  
of Epidemiology  
UTHealth School of Public Health





# WITHOUT SKIPPING A BEAT

UTHEALTH CONGENITAL HEART DISEASE EXPERTS  
REPAIR COMPLEX HEART DEFECT



Stephen A. Barnes, MD, JD, smiles with his wife, Amy, who stood by him for every test and procedure to repair his heart.



Jorge D. Salazar, MD, believes UHealth is the ideal location from which to change the world for the thousands of children born each year with congenital heart defects.



Pansy Tung, MD, says that it is essential to educate patients and families affected by congenital heart disease to engage them in their own care.

While Stephen A. Barnes, MD, JD, was being prepped for surgery, he couldn't resist joking with his surgeon and longtime friend Jorge D. Salazar, MD: "You're so accustomed to repairing tiny newborn hearts that my colossal 51-year-old adult heart should be a walk in the park." Although Salazar is a pediatric cardiothoracic surgeon, he is a leading expert in repairing the most challenging congenital heart defects in children and adults.

More than two decades ago, Stephen oversaw Salazar's training in general surgery at Johns Hopkins Hospital. But in October 2017, he found himself on a stainless steel operating table waiting for Salazar to repair a hole in his heart that had been quietly sapping his vitality his entire life.

Approximately one percent of all babies in the United States are born with congenital heart disease, which involves a defect in the structure of the heart that can eventually lead to heart failure or other issues such as arrhythmia. These defects are usually found and treated during infancy or childhood, but some people, like Stephen, evade diagnosis until dire symptoms appear in adulthood.

Stephen, who specialized in surgical oncology before adding a law practice to his career, leads an exceptionally healthy life, avoiding hazards like smoking that would increase his risk for heart disease. That's why the extreme fatigue he began experiencing in 2016 confounded him. "I had just turned 51, so I figured it was finally time for me to accept that I was getting older," he says.

He ignored his fatigue for months, chalking it up to his active lifestyle and late nights working on cases. Then, in summer 2017, Stephen started experiencing severe heart palpitations where he felt his racing heart trying to escape his chest. It was time to see a specialist.

Stephen's cardiologist ordered a battery of tests on his heart, and the results from the echocardiogram noted a possible rare heart defect that can lead to heart failure—a sinus venosus atrial septal defect and partial anomalous pulmonary venous return, a combination defect where the blood incorrectly returns from the lungs to the right atrium instead of the left. However, because the other tests indicated his heart was functioning correctly with no other symptoms, his cardiologist believed an MRI was unnecessary.

*"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, normal lives."*

### Jorge D. Salazar, MD

John P. and Kathrine G. McGovern Distinguished Chair  
Professor and Chief, Division of Pediatric  
Cardiovascular Surgery  
Department of Pediatric Surgery  
McGovern Medical School at UHealth

## UT PHYSICIANS ADULT CONGENITAL HEART DISEASE CLINIC

The UT Physicians Adult Congenital Heart Disease Clinic cares for people ages 16 years and older who have congenital heart disease. In collaboration with Memorial Hermann Heart & Vascular Institute-Texas Medical Center and Children's Memorial Hermann Hospital, the Adult Congenital Heart Disease Clinic provides a continuum of care from childhood through adulthood.

The clinic's cardiologists are specifically trained in all aspects of congenital heart disease and the complex anatomy and physiology of adults living with congenital heart disease. Its facilities include capabilities for noninvasive testing and other imaging studies. The clinic's cardiologists coordinate related care in various situations including high-risk pregnancy, genetics, liver disease, pulmonary medicine (lung disease), hematology (blood disease), heart failure, and cardiac surgery.

"So many pediatric patients with congenital heart disease are lost in follow-up, when continued care through adulthood is essential," says Tung. "Our goal is to transition our pediatric patients to our adult program by educating patients and families about the importance of continuing to monitor and care for their heart defect through adulthood."



Salazar echoes Stephen's hope. "We are integrating our pediatric and adult congenital heart disease programs to provide a continuum of care from the womb to adulthood," says Salazar. "Children and adults with heart defects require interventions and continuous monitoring to lead a normal life, and we have the experts and tools to help them take control of their condition and live life to the fullest."

Stephen's symptoms continued over the next couple of months, and his surgical instinct took over. When he read that 90 percent of adult patients with his potential heart defect die before age 60, he scheduled his own cardiac MRI, which confirmed his echocardiogram's warning: He had a congenital heart defect that needed immediate attention.

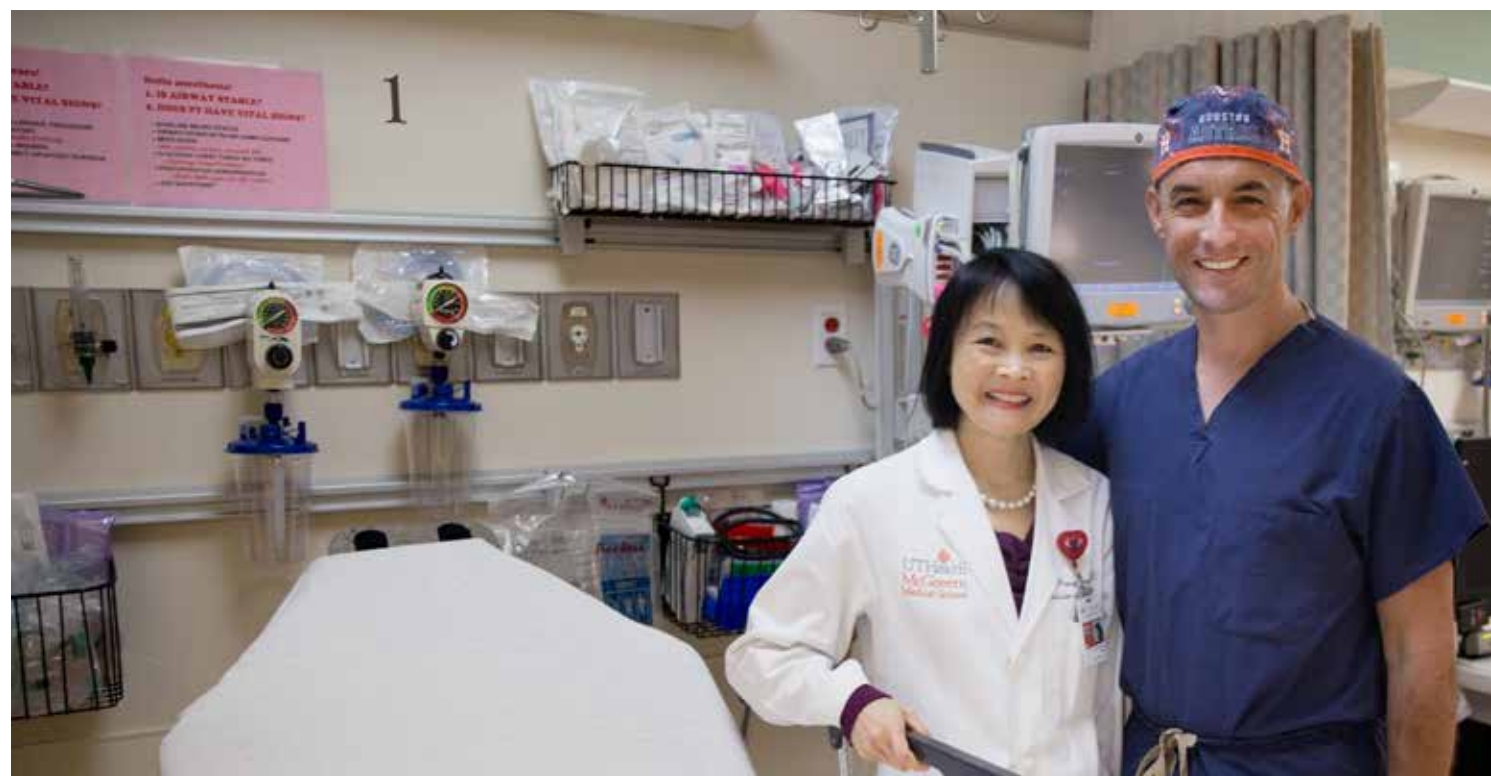
As fate would have it, Salazar had just joined McGovern Medical School at UTHealth as Professor and Chief of the Division of Pediatric Cardiovascular Surgery and was less than two miles from Stephen's law office. When Stephen called his old friend and colleague, Salazar immediately scheduled an appointment for him with Poyee "Pansy" Tung, MD, a cardiologist at the UT Physicians Adult Congenital Heart Disease Clinic.

Tung promptly confirmed Stephen's heart defect and coordinated with Salazar to determine the surgical approach to repair it. Although up to 80 percent of patients with congenital heart defects are diagnosed in childhood, she wasn't surprised that Stephen slipped through the cracks and still led a productive, active life.

"Stephen's heart defect forced his body to work overtime, sending two to three times the normal amount of blood to his lungs," she explains. "His heart was sliding into failure his whole life, and it finally caught up with him."

Three hours after Stephen joked that Salazar should have no problem repairing his adult heart, he awoke with a properly functioning heart and renewed vigor.

"I was so fortunate to have Dr. Salazar and Dr. Tung by my side, but so many other adults with congenital heart disease don't find out they have a problem until it's too late," says Stephen. "My hope is that UTHealth continues raising awareness for adult congenital heart disease to advance care for both adults and children."



Top Photo: When Stephen A. Barnes MD, JD, was Chief Resident at Johns Hopkins Hospital, he helped mentor Jorge D. Salazar, MD—the surgeon who would repair his heart more than twenty years later.

Bottom Photo: Pansy Tung, MD (left), and Jorge D. Salazar, MD, (right) provide a continuum of care to pediatric and adult patients with congenital heart defects.



**Poyee (Pansy) Tung, MD**

Associate Professor, Division  
of Cardiovascular Medicine  
Department of Internal Medicine  
McGovern Medical School at UTHealth

AGE IS AN ISSUE OF ○○○○○○○○○○○○

**MIND OVER**

**MATTER.**

**IF YOU DON'T MIND,  
IT DOESN'T MATTER.**

○○○○○○○○

MARK TWAIN

# BEYOND TEETH

HOW DENTISTRY CAN MAKE A LIFESAVING DIFFERENCE TO THE ENTIRE BODY



“So many people want to know why we teach students the whole body and not just the teeth and the mouth. It’s because they’re treating a person; they’re not treating a mouth.”

As Christopher Conser evaluated his patient’s vital signs before a dental procedure, he thought he made a mistake with the blood pressure monitor. He pressed his fingers against her wrist to check her pulse.

“Then I knew something was really wrong,” says Conser, a second-year dental student at UTHealth School of Dentistry. “Her heartbeat would stop for a couple of seconds and then resume periodically.”

Conser referred the patient to a cardiologist, who diagnosed sick sinus syndrome—a malfunction in the heart’s natural pacemaker. Had she waited any longer, she may have passed out while driving down the freeway.

While the patient’s primary care physician never found the condition in any machine-based assessments, Conser caught it thanks to the training he received from Shalizeh “Shelly” A. Patel, DDS.

“We stress the importance of manually taking vital signs to our students because they may find symptoms that a machine might not,” says Patel.

Dental professionals find themselves increasingly alert to a vast array of illnesses, including cancer, cardiovascular disease, and hypertension.

“The dentist may be the first person to see someone with an undiagnosed immunological problem like HIV,” says Robert Spears, PhD. “A whole host of things manifest in the mouth.”

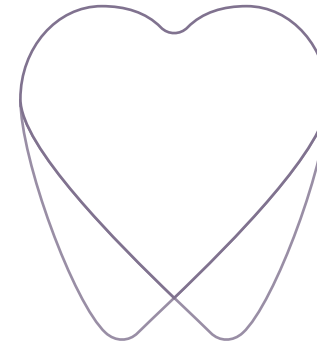
As patients visit clinics at the School of Dentistry for assessments, preventive care, and treatments, students learn to leverage these visits to spot potentially fatal diseases.

“We teach our students how to feel for enlarged lymph nodes in the neck, for example,” Spears says. “They may be the first people to detect that you’ve got a cancer in a place hard to visually see such as the back of your tongue.”

Even diseases that show no visible signs in the mouth—like diabetes and cardiovascular disease—share a link to oral health. Spears says that although diabetes, for example, results from multiple factors, research shows that oral health issues can affect the pancreas, the body’s organ that regulates blood sugar. He adds that research indicates women with oral health issues tend to have lower-weight babies as well as a greater risk of pregnancy issues and premature births.

“If the body has to use its resources to fight off an infection in the mouth, it may not be doing all it should for the growing fetus,” he says.

As the School of Dentistry educates the public about the relationship between oral health and overall health, they simultaneously prepare dental students for the wide variety of conditions they may encounter. Dental students begin seeing patients their second year of school, and thorough training means students like Conser could flag potentially dangerous conditions.



**Robert Spears, PhD**

Associate Dean for Student and Academic Affairs  
Professor, Department of Diagnostic and Biomedical Sciences  
UTHealth School of Dentistry



**Shalizeh “Shelly” A. Patel, DDS**

Director of Clinical Simulation  
Associate Professor,  
Department of Restorative Dentistry and Prosthodontics  
UTHealth School of Dentistry



A simple dental exam can save a life, as one patient (center) learned when dental student Christopher Conser (right) spotted a potentially fatal heart defect.



# A LANGUAGE OF ITS OWN



PATIENT WITH ALZHEIMER'S DISEASE KEPT HER SMILE THANKS TO UTHEALTH



After Alzheimer's disease left Bernice Morgan (right) unable to verbalize words, she still spoke to the world through her smile. Her husband Donald (left), a former dentist, credits UThHealth for helping keep her smile bright.

Although Don Morgan, DDS, had devoted himself to caring for his wife Bernice during her struggle with Alzheimer's disease, she needed professional help.

As a dentist, Don knew the importance of oral health for his wife; he diligently brushed her teeth and watched for signs of dental disease while she lived at home.

"I assumed the staff at the assisted living facility would care for her in the same way," he says. "I was wrong."

Don assumed the role of dental hygienist for Bernice at the facility, a simple task at first but it became more complex as Alzheimer's disease impaired her muscle control. His concern grew when he discovered dental disease taking root in Bernice's mouth. Recent research has documented how, especially in the elderly, dental disease can wreak havoc in the body; diabetes, cardiovascular disease, and infection of the heart lining all share links to oral health.

He contacted Maryam Tabrizi, DMD, MPH, who contracts with assisted living facilities to provide dental care for residents otherwise unable to access it.

"Geriatric education is growing at UThHealth, and Dean John Valenza was happy to allow me to serve in this way," Tabrizi says. "He and the School of Dentistry have the highest regard for geriatric education and offering any kind of resource, education, and treatment."

She explains that many elderly patients in assisted living facilities face more than one barrier to treatment. In addition to the direct costs of treatment itself—especially on a limited budget—transportation can prove a logistical and financial nightmare.

"Many elderly patients have little mobility, can't drive, and don't have family available to take them to appointments," she says. "Then on top of that, the dentist they used to go to may not be in practice any more, or they're too far to reach."

Don believes that as Americans live longer, more people will outlive their ability to care for their

own oral health—a health crisis that worsens existing geriatric health concerns. As a trained dental professional, he saw signs of dental disease in residents at Bernice's assisted living facility. His own dental practice taught him the power of a smile—how children he treated seemed to "come alive" when he restored their teeth. So when he sees elderly people lose teeth and the fullness of their smiles, he knows such a loss reverberates far beyond the physical.

"I'd be willing to bet when they lose their smiles, they lose their self-esteem," he says. "To be able to smile at the world is one of the most self-enriching things you can do."

Tabrizi stopped Bernice's dental disease without needing to perform major surgery. With Bernice unable to speak due to Alzheimer's disease, restoring her smile made a difference far beyond relieving pain—one apparent to Don, their family, and everyone who sees her.

*"When someone smiles at her and says hello, she will frequently smile back, and people will comment on her lovely smile," Don says. "It's an important connection with the world that she still has."*



**Maryam Tabrizi, DMD, MPH**  
Assistant Professor, Department of General Practice and Dental Public Health  
UThHealth School of Dentistry

*\*Bernice has since passed away, but her smile will continue to brighten the memories of all who knew her.*

# ALIVE AND KICKING, AGAIN

UTHEALTH DOCTORS SAVE MORE THAN  
A LIFE AND A LEG



Six months after a horrific accident left 38-year-old Steven Fisher with multiple traumatic injuries, he was walking again, thanks to the handiwork of UTHealth orthopedic trauma surgeon Joshua Gary, MD, and a multidisciplinary team of trauma specialists.

Steven was about two minutes from his home in Spring, Texas, when his small car hit a big pickup that pulled out from a parking lot. Steven's right foot, trapped under the accelerator, kept him partially inside his car.

"I was lucky," he says. "An ambulance headed back to the station rolled up on the accident. Later I heard that the emergency responders didn't expect me to make it."

Steven was unconscious when he arrived at the hospital via Memorial Hermann Life Flight®. He suffered a brain hemorrhage and severe injuries to his right hip and leg, including the entire talus bone in the ankle joint, which was protruding through the skin.

Orthopedic surgery had to be put off until Steven's more critical injuries, such as the brain hemorrhage and other bleeding, were treated and had time to heal.



**Emmanuel G. Melissinos, MD**

Clinical Professor, Department  
of Orthopedic Surgery  
McGovern Medical School at UTHealth



**Joshua Gary, MD**

Associate Professor, Department  
of Orthopedic Surgery  
McGovern Medical School at UTHealth



**Steven Fisher**

Patient

"With each of our trauma patients, we first save the life, then save the limb, then restore function," says Gary. "After he was stable, Steven underwent a large, staged orthopedic repair in coordination with plastic and reconstructive surgery and neurosurgery. A complex case like his requires the effort of our entire team of specialists across all fields of care."

UTHealth traumatologists performed more than 10 surgeries on Steven during his month-long stay in intensive care. "At the beginning, we weren't sure if he would walk again," says Gary, whose clinical interests include pelvic and acetabular fractures, complex fractures and dislocations, and malunion and nonunion surgery.

Emmanuel G. Melissinos, MD, saved Steven's leg. "We had two areas of concern," Melissinos explains. "The flesh was missing from his upper leg to the knee. We moved muscle around and grafted skin to cover it. He also had a terrible ankle injury with damage to the anterior tibial artery and loss of flesh. Using flesh from the forearm to cover an injury like this can result in a secondary defect. We've developed a method that allows us to close the donor site of the tissue without disfigurement."

"Steven is walking very well now," Gary says. "On his last visit, he and his wife brought their son who wanted to thank our team for helping save his dad." Steven and his wife have three children ages 12, nine, and seven.

"Dr. Gary, Dr. Melissinos, and all the others put me back together," Steven says. "They didn't expect me to walk for two years. I went to therapy and fought as much as I could and was walking in six months."

He also believes the prayers and love from family members and friends helped speed his recovery. "I have so much to be grateful for. The best part is being alive—and being a daddy and husband again."

# GROWING LEADERS IN HEALTH CARE

UTHEALTH STUDENT APPOINTED  
UT SYSTEM STUDENT REGENT



The discovery of an effective treatment for a rare form of bone cancer in children is on Brittany E. Jewell's expanding bucket list. The PhD candidate at The University of Texas MD Anderson Cancer Center UTHealth Graduate School of Biomedical Sciences is also serving a term as Student Regent on The University of Texas System Board of Regents.

"It's important for students to have a voice on the UT System Board of Regents," Jewell says. "I plan to use this year as Student Regent to learn the wellness needs of students across the UT System and work with other student leaders to achieve greater accessibility and awareness of available resources."

Giuseppe N. Colasurdo, MD, UTHealth President and Alkek-Williams Distinguished Chair, recommended Jewell to Governor Greg Abbott, who appointed the Houston native for the one-year term that began on June 1, 2018.

Jewell works in the lab of Dung-Fang Lee, PhD ('08), at McGovern Medical School at UTHealth to find a treatment for Rothmund-Thomson syndrome, a rare genetic condition that affects the skin and other parts of the body. It can increase the risk of cancer, particularly a form of bone cancer called osteosarcoma. Individuals with Rothmund-Thomson syndrome typically develop a rash on the cheeks between the ages of three months and six months.

"As a little kid, I always said I wanted to be a pediatric oncologist, a cancer doctor," Jewell explains. "It's a really funny thing for a 10-year-old to say, but I had a neighbor who had leukemia when she was two, and it tore me up."

"Brittany has the qualities of a good researcher," says Lee, a bone cancer researcher. "She is very determined."

Jewell uses reprogrammed stem cells from the skin to develop a model for studying bone cancer formation. Researchers could use findings from these studies to test promising treatments for osteosarcoma.

"We hope that we can use these stem cells as a platform for studying drugs already on the market," Jewell says. "I think that the extra care that we're going to take in using these stem cells may speed up the approval time for new therapies and get them on the market faster than the normal 10-year period."

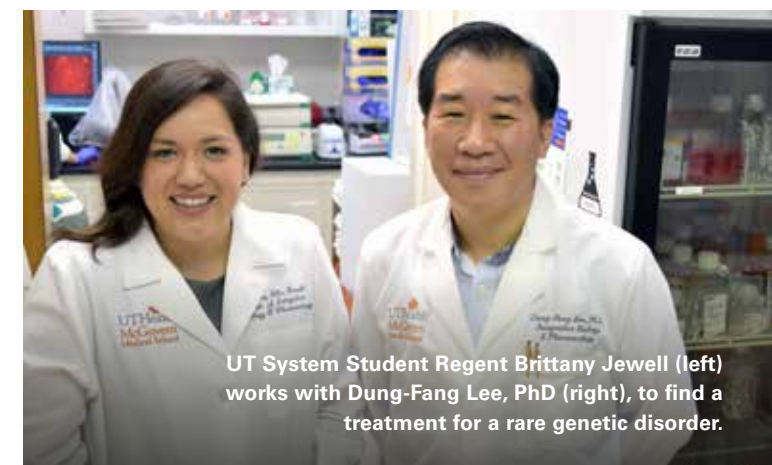
When Jewell is not in the lab, she serves as Executive Co-Director of UTHealthCares, a student-driven initiative that uses community engagement and interprofessional collaborations within UTHealth schools to address the health concerns of Houston's underserved population. Outside of the university, she is a member of the American Academy of Cancer Research and other professional organizations.

She also is President of TeeTime for Autism, a nonprofit organization she founded in 2010 to benefit individuals with autism spectrum disorder in the Greater Houston area. Proceeds from golf tournaments have raised more than \$200,000 to fund grants to help provide care to more than 100 children.

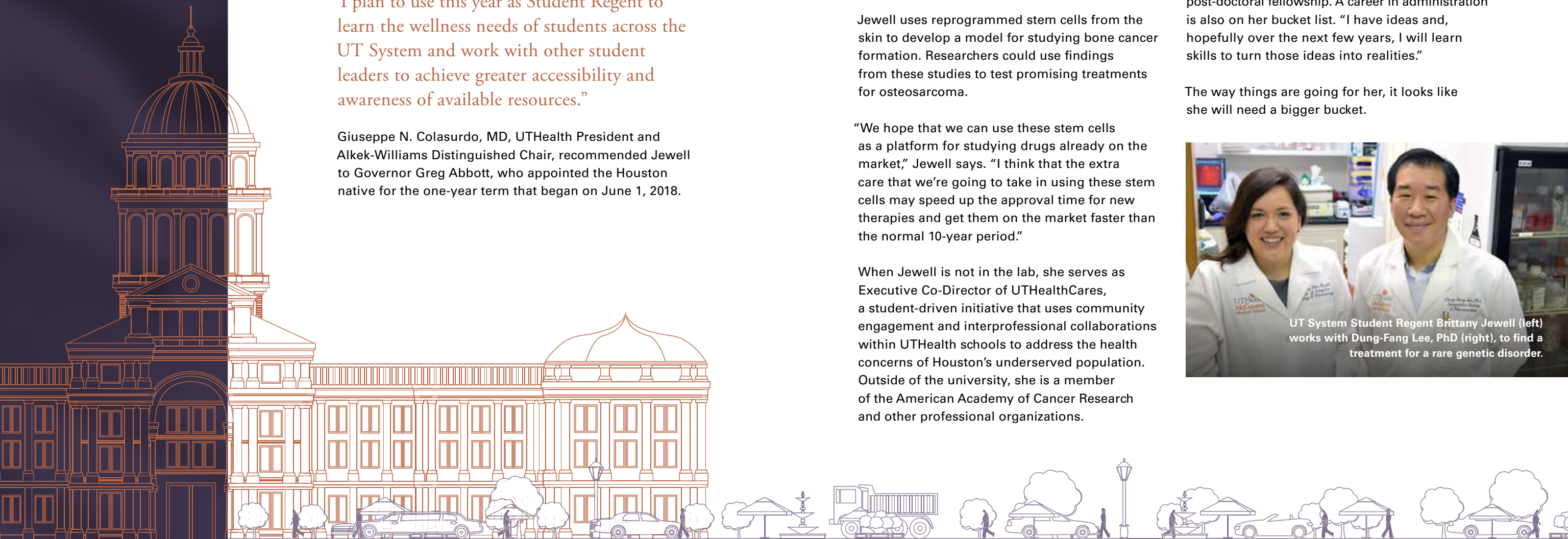
"I started TeeTime for Autism after I graduated with my bachelor's degree," Jewell explains. "My cousin has an autism spectrum disorder, so I knew firsthand that typical autism therapies were not covered by all insurance. We wanted to help the people of the Houston area, and it's one of the things I'm most proud of."

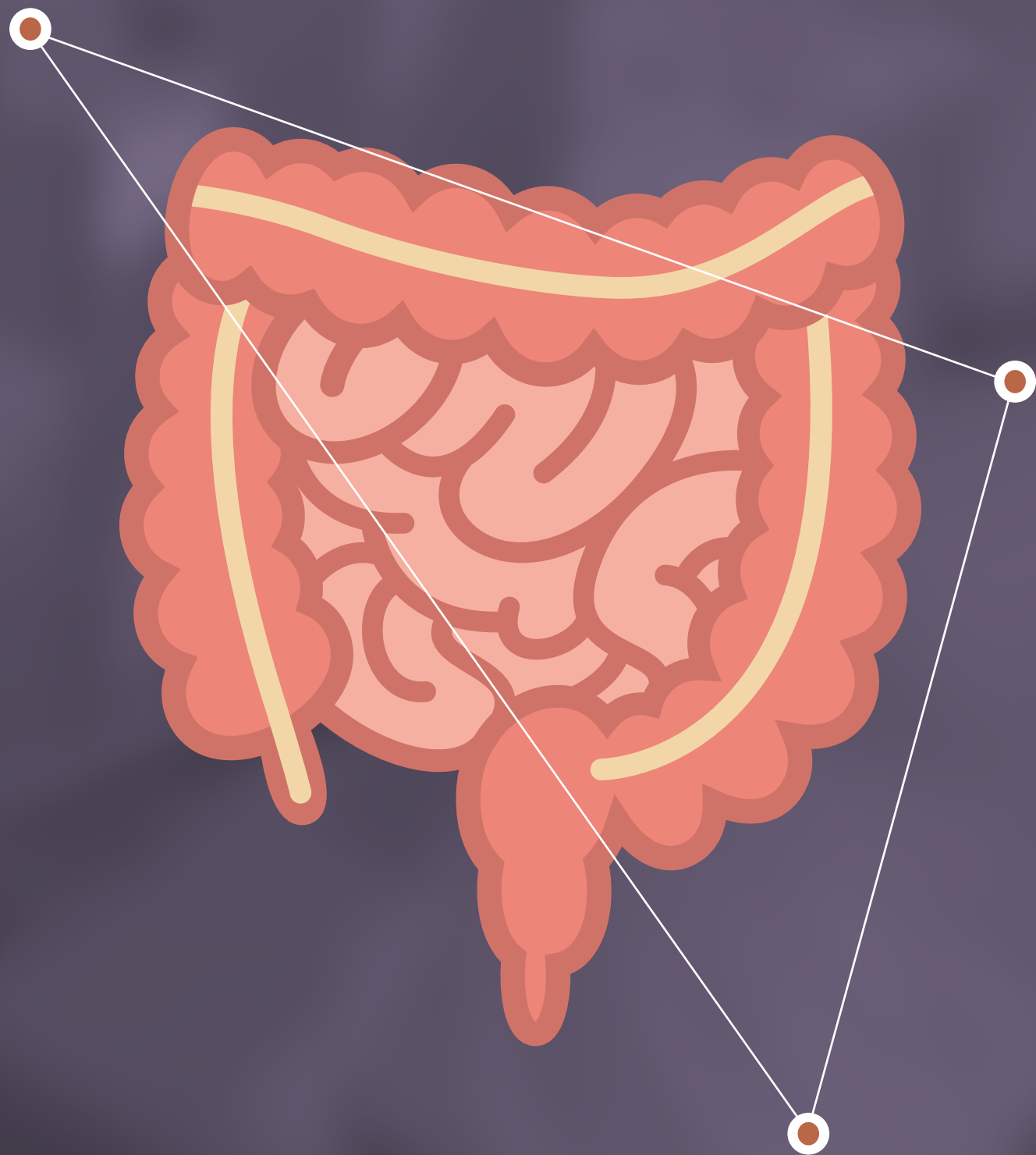
Jewell is fellow of the Training in Policy Studies program (part of the American Osteopathic Association) and of the Cancer Prevention and Research Institute of Texas. After her expected graduation in 2020, she plans to pursue a post-doctoral fellowship. A career in administration is also on her bucket list. "I have ideas and, hopefully over the next few years, I will learn skills to turn those ideas into realities."

The way things are going for her, it looks like she will need a bigger bucket.



UT System Student Regent Brittany Jewell (left) works with Dung-Fang Lee, PhD (right), to find a treatment for a rare genetic disorder.





## THREE-PRONGED ATTACK

UTHEALTH RESEARCHERS  
TAKE ON INFLAMMATORY BOWEL DISEASE



You can't touch it, but you can feel it. You can't see it, but it can grip every aspect of your life through excruciating pain, debilitating fatigue, and physical deterioration.

Inflammatory bowel disease (IBD) is the umbrella term for Crohn's disease and ulcerative colitis. Crohn's is an autoimmune disease that affects the lining of the digestive tract. Ulcerative colitis causes long-lasting inflammation and sores in the innermost lining of the large intestine and rectum. These two conditions of the gastrointestinal tract affect about 11 million individuals around the world, including up to about one million children under the age of 18, and results in nearly 48,000 deaths annually. That is like losing the population of Texas City every year.

Common signs and symptoms of inflammatory bowel disease include diarrhea, abdominal pain, fatigue, bloody stools, and unintended weight loss. While the exact cause is unknown, what we do know is that it results from a defective immune system. A family history of the disease may also make an individual more likely to develop an inappropriate immune response to viruses, bacteria, and other environmental triggers.

Doctors may use several medications to treat inflammatory bowel disease, such as pharmaceutical medications designed to interfere with the body's response to inflammation. Some of these therapies, however, require long and frequent trips to a medical facility and can result in abdominal pain and diarrhea, the same symptoms the patient is treating. There is also a surgical option, which can trigger more complications.

Although IBD defies many standard treatments, several UTHealth experts are looking for new and effective treatment therapies to conquer the disease.



## Brooks D. Cash, MD

Director, Division of Gastroenterology, Hepatology, and Nutrition  
Department of Internal Medicine  
McGovern Medical School at UTHealth

“IBD, both Crohn’s disease and ulcerative colitis, are among some of the most debilitating conditions we encounter in gastroenterology. Over the past two decades, we have seen tremendous advances in the diagnosis and treatment of these diseases, and we are currently studying multiple new pharmaceutical options for our patients with IBD. Over the last 20 years, we’ve integrated a class of therapies we call biologics, which are medications that are remarkably effective against specific areas of the immune system. Oral forms of these medications are being developed, and this is particularly exciting because patients will no longer have to commit to lengthy infusions or self-administer shots; they can simply take a pill.”



## Holger K. Eltzschig, MD, PhD

John P. and Kathrine G. McGovern Distinguished Chair  
Professor and Chair, Department of Anesthesiology  
McGovern Medical School at UTHealth

“The surface of the intestine—the intestinal mucosa—plays a key role in IBD. Dysfunction of the intestinal mucosa can allow bacteria to cross through this barrier and trigger uncontrolled intestinal inflammation. We observed that the intestinal mucosa develops a state of limited oxygen availability during inflammation, or inflammatory hypoxia. We were surprised to find that a specific protein stabilizes during IBD and promotes a protective response.

Our studies suggest that medication that enhances the signaling effects of this protein could be an effective treatment for IBD. Indeed, several pharmaceutical companies have developed orally available compounds to enhance the signaling effects of this protein.”



## Lenard M. Lichtenberger, PhD

Professor, Department of Integrative Biology and Pharmacology  
McGovern Medical School at UTHealth

“IBD patients run a great risk of developing colorectal cancer, so I’m looking at inflammation of the gastrointestinal tract, how it relates to this form of cancer, and how anti-inflammatory therapies can affect the disease. Specifically, we are examining the function of platelets, which play a role in blood clotting and a big role in cardiovascular disease. We’re seeing now that they play a role in inflammation and cancer. We have also observed that IBD patients have elevated platelet counts, and the platelets are in an activated state, which may contribute to cancer formation.

Additionally, we developed an aspirin formulation that has less bleeding and is less injurious to the gastrointestinal tract. We determined it was very effective in cancer prevention and has similar properties as far as producing platelet activity in diabetic subjects prone to cardiovascular disease. Our lab will be studying the role of platelets in colonic inflammation and the progression to colorectal cancer in some IBD patients, and the potential use of GI-safe anti-inflammatory drugs in the treatment of this devastating digestive disease.”



IBD is not IBS, or irritable bowel syndrome. While IBD and IBS symptoms can be similar, IBS is a common disorder affecting the GI tract that is not associated with severe inflammation. IBS does not increase the risk for colorectal cancer.

Celiac disease is a different condition with symptoms similar to IBD. Celiac disease, however, has a specific cause: inflammatory response to gluten. Gluten refers to a group of proteins found in wheat and similar grains. Stop eating gluten and the symptoms eventually go away.



# HEALTH CLASS

MERCEDES-BENZ DEALERS OF GREATER HOUSTON  
DRIVING HEALTH EDUCATION



Mercedes-Benz  
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Mercedes-Benz Dealers of Greater Houston partnered with UTHealth throughout 2018 to enhance health science education and community awareness.

As the 2018 Constellation Gala presenting sponsor, their generosity touched every part of our university by creating 14 \$5,000 scholarships—two scholarships from each of the seven Houston-area Mercedes-Benz dealerships for students from all six UTHealth schools.

Furthermore, each Mercedes-Benz dealership hosted a House Calls event featuring UTHealth experts who presented the latest information on various health topics such as stem cell therapies, heart health, and sports medicine. These community-based events were live streamed on ABC13 digital platforms and included interactive Q&A sessions with the public.



Here's how the Mercedes-Benz Dealers of Greater Houston scholarships are helping transform our students into the next generation of health science leaders:



**Meegan Justice, MS**

Mercedes-Benz of West Houston Scholarship  
 Dietetic Internship/MPH in Health Promotion  
 Class of 2020  
 UTHealth School of Public Health

“Demonstrating a different approach to nutrition, UTHealth has already opened my eyes to different techniques to apply to health promotion. As a student of the sciences, I am excited to improve and learn new skills in health promotion using a public health approach. UTHealth and the Mercedes-Benz Dealers of Greater Houston are paving a path toward my career and my passion.”



**Jelemmy Villaroza**

Mercedes-Benz of Houston North Scholarship  
 Pacesetter Bachelor of Science in Nursing  
 Class of 2019  
 Cizik School of Nursing at UTHealth

“I take so much pride that I am among the students of UTHealth and that I am pursuing a career I have always dreamed of. My education at UTHealth is the best path that I could take toward my goal, and the Mercedes-Benz of Houston North Scholarship has made it possible.”



**Jessica Rodriguez**

Mercedes-Benz of Sugar Land Scholarship  
 PhD in Epidemiology  
 Class of 2021  
 UTHealth School of Public Health

“Every opportunity I have and everything I have accomplished thus far has already surpassed any expectation I ever had for my future. Being from a small town where very few people graduate college made the notion of entering a doctoral program seem like a dream that was far out of reach. But UTHealth and the Mercedes-Benz of Sugar Land Scholarship have made my dream feasible.”





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Our faculty, residents, fellows, and students provide inpatient care at our primary teaching hospitals, Memorial Hermann–Texas Medical Center, Children’s Memorial Hermann Hospital, and Harris Health’s Lyndon B. Johnson (LBJ) Hospital in addition to UTHealth Harris County Psychiatric Center, TIRR Memorial Hermann, and The University of Texas MD Anderson Cancer Center. The Memorial Hermann Red Duke Trauma Institute is one of the busiest Level I trauma units in the nation, and LBJ Hospital’s Level III trauma center is the busiest Level III unit in the state.

# THANK YOU

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Advancing healthy aging is one of the many ways that UTHealth’s community of experts is solving the greatest health challenges of our time.

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

**UTHealth Office of Development**

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By supporting UTHealth, you help to create healthier lives in our community and well beyond. Together, we are on the frontier of discoveries that bring quality patient care to our communities.

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OUT IN FRONT: HEALTHY AGING

2019

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EDUCATION



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The mission of UTHealth is to educate health science professionals, discover and translate advances in the biomedical and social sciences, and model the best practices in clinical care and public health.

We pursue this mission in order to advance the quality of human life by enhancing the diagnosis, treatment, and prevention of disease and injury as well as promoting individual health and community well-being.

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