

OUT IN FRONT

2021

HEALTHY AGING

COVER STORY

Frontline heroes

Emergency nurses lead out in front as COVID-19 first responders

A timeless commitment

Couple makes a gift to advance care for older adults

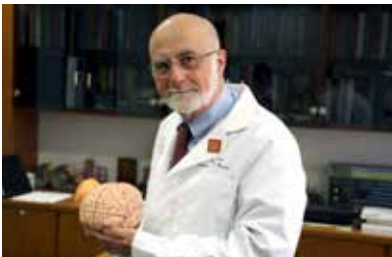
A gift like no other

A family honors the memory of a leader in global health

UTHealth's Comprehensive Campaign

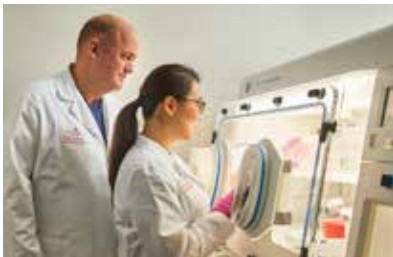
To improve health care and the well-being of our families, friends, and neighbors, we are planning for our first comprehensive campaign focusing on three themes that resonate most with our community.

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 life's milestones—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

TABLE OF CONTENTS

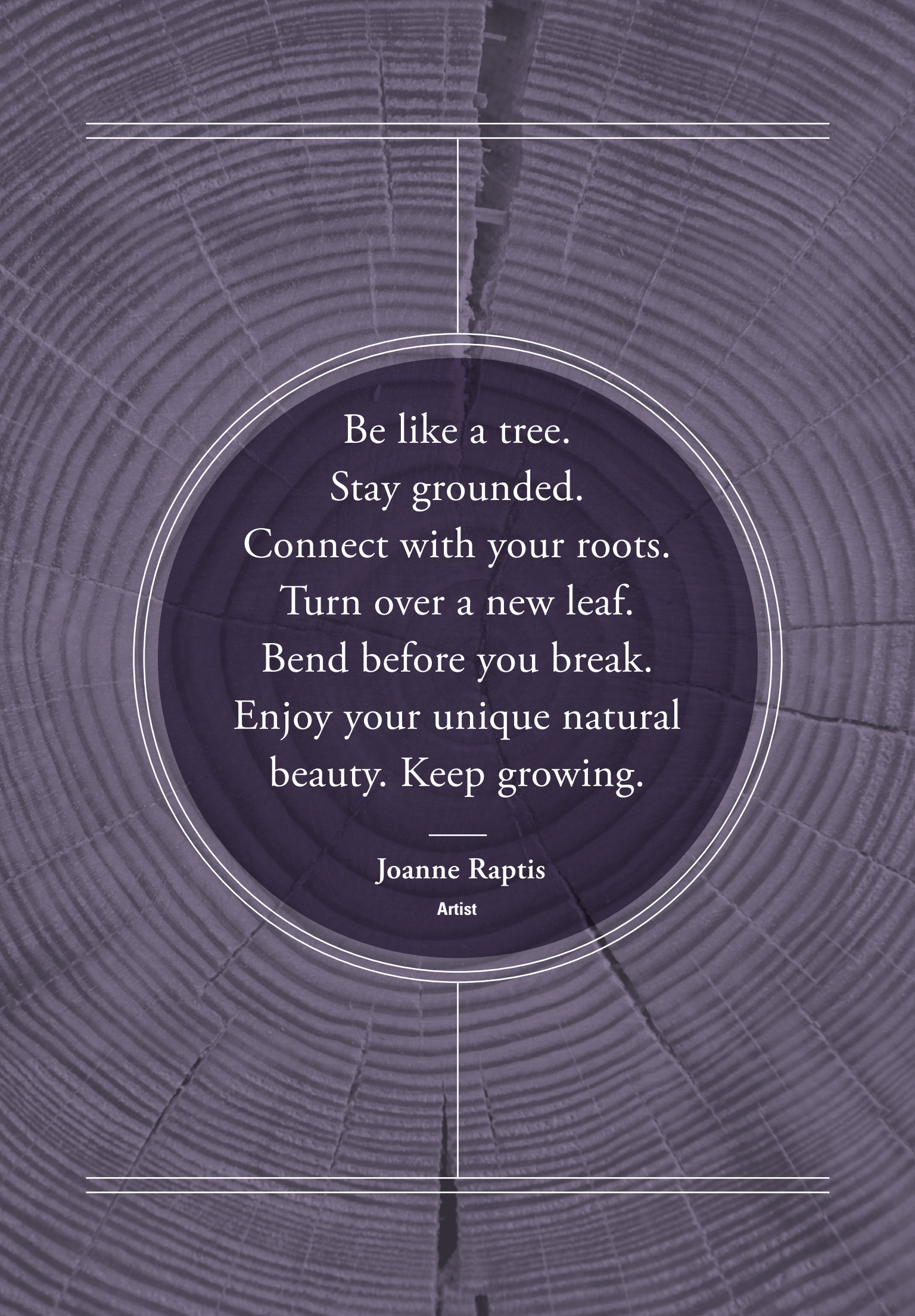
6	FRONTLINE HEROES Emergency nurses lead out in front as COVID-19 first responders
10	HEART-POUNDING CARE Emergency medicine specialists provide comprehensive care without bounds
16	GROUND NO MORE Aerospace launch director looks to the stars again after traumatic accident
20	KEEPING IT REAL Newly expanded simulation lab helps train nursing students
24	A TIMELESS COMMITMENT Couple makes a gift to advance care for older adults
28	UNCOVERING THE UNKNOWN Providing clarity on COVID-19 through public health
32	A GIFT LIKE NO OTHER A family honors the memory of a leader in global health
34	TRIP INTERRUPTED A couple survives COVID-19 and donates plasma to help others recover
38	LEADING THROUGH THE STORM UTHealth alum navigates county health system through COVID-19
40	FIGHTING FOR AIR Researchers and clinicians tackle lasting effects of COVID-19
46	OVERCOMING THE CYCLE OF PAIN UTHealth physicians take a comprehensive approach to pain management
50	THE PULSE OF HEART HEALTH Preventive Cardiology Forum celebrates milestone anniversary
52	DIVING DEEP INTO DATA A new center uses data to improve oral health care

ABOUT THE COVER

We see them on TV, our phone screens, and the pages of newspapers everywhere: the COVID-19 emergency nurses. Clad head-to-toe in protective gear, these frontline health professionals run some of the greatest risks in the fight to stem the pandemic.

But who are they? Through the eyes of Elda Ramirez, PhD, RN, an emergency nurse and faculty member of Cizik School of Nursing at UTHealth, we see the courage, complexities, and struggles of these heroes.





Be like a tree.
Stay grounded.
Connect with your roots.
Turn over a new leaf.
Bend before you break.
Enjoy your unique natural
beauty. Keep growing.

Joanne Raptis

Artist



WITH GRATITUDE

With age comes wisdom—but it also may reduce physical and mental aptitude. At UTHealth, we take a comprehensive approach to healthy aging, helping the patients we serve treasure every memory and enjoy the activities they love.

I am pleased to share this year's ***Out in Front: Healthy Aging*** publication, which highlights the extraordinary contributions of our students, faculty, and staff, who are working together with patients and donors to redefine health across the continuum of life. We are leading advancements that help our communities persevere through the COVID-19 pandemic, repair lives after devastating accidents, and pioneer new approaches to care of older adults.

The pandemic has underscored the importance of expert, specialized care for people of all ages—especially those who are most vulnerable to the virus. With your generous support, the many faces of UTHealth continue to lead discoveries in patient care, research, and education to help people live longer, healthier lives.

With gratitude for your commitment to UTHealth and the communities we serve, we simply say: **Thank you.**

Giuseppe N. Colasurdo, MD

UTHealth President
Alkek-Williams Distinguished Chair



FRONTLINE

EMERGENCY NURSES LEAD OUT IN FRONT AS

Elda G. Ramirez, PhD, RN, worked feverishly with medical staff to intubate a man suffering from respiratory distress likely caused by COVID-19. They labored so intensely that when Ramirez left the room, a hospital tech pointed out something strange.

"I had sweat so much that my plastic gown was attached to my skin," says Ramirez, an emergency nurse practitioner.

As the pandemic raged across Houston, Ramirez and her fellow emergency nurses persevered through long hours, stifling protective gear, and the ever-present fear of contracting COVID-19.



HEROES

COVID-19 FIRST RESPONDERS



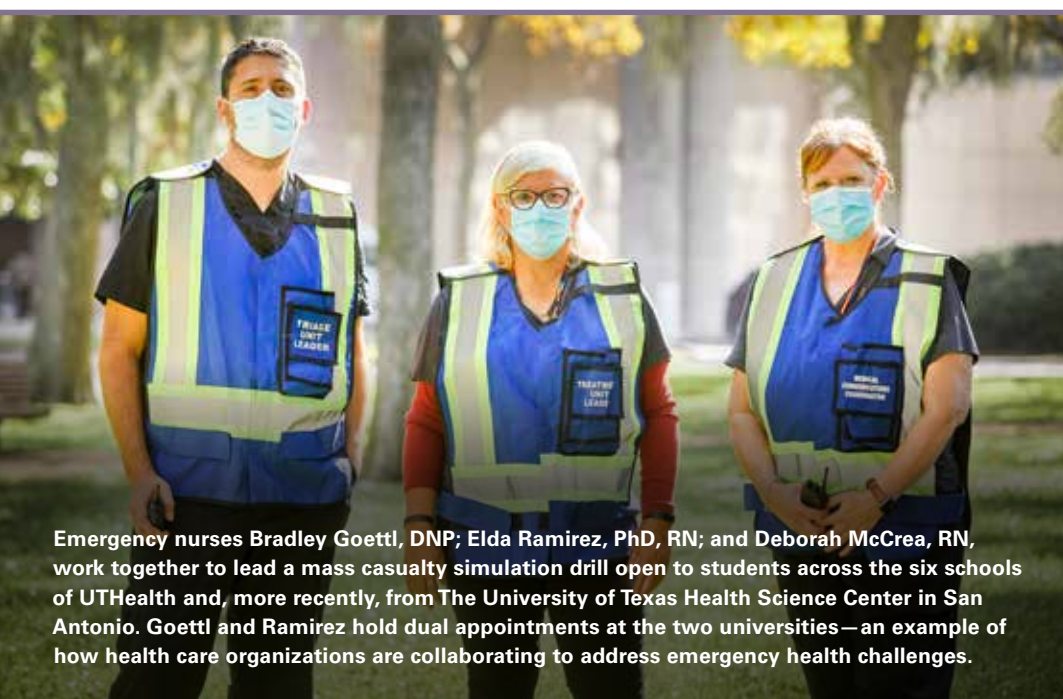
“We started thinking that we might bring this virus home to our families,” she says. “In that kind of environment, it’s both professional and personal.”

While Ramirez has seen and experienced a great deal during three decades as a practitioner, educator, and researcher, she lives a new level of intensity as a pandemic first responder. When serving as a hospital screener, she makes the vital decisions on which patients go to special COVID-19 areas. In the COVID-19 treatment units, she wears head-to-toe protective gear and makes critical life-and-death decisions.

“For those of us who are on the frontlines in health care, it is more than a job,” Ramirez says. “It’s almost like a genetic trait or calling because not just anybody can do it.”

Ramirez served as co-chair of the COVID-19 task force for the American Academy of Emergency Nurse Practitioners (an organization she founded), leveraging her experience to help other nurses. During the early days of the pandemic, the group assisted emergency nurses in finding scarce personal protective equipment and held educational programs on the virus as new and sometimes conflicting information surfaced. It also served as a resource for nurses who lost their jobs due to hospital funding cuts and guided nurses in best practices for treating COVID-19 and avoiding infection.

Even before the pandemic, Ramirez held a deep commitment to teaching nurses the skills to serve in emergency situations. She founded UTHealth’s emergency/trauma nurse practitioner program in 1994 and helped establish the first international competencies for nurse practitioners in emergency care. The State of Texas has granted Ramirez \$2 million since 2016 to further her student training, including bringing the coursework online and expanding the program to The University of Texas Health Science Center at San Antonio (UT Health San Antonio).



Emergency nurses Bradley Goettl, DNP; Elda Ramirez, PhD, RN; and Deborah McCrea, RN, work together to lead a mass casualty simulation drill open to students across the six schools of UTHealth and, more recently, from The University of Texas Health Science Center in San Antonio. Goettl and Ramirez hold dual appointments at the two universities—an example of how health care organizations are collaborating to address emergency health challenges.



Part of Ramirez’s work in nursing education involves hands-on mass casualty drills for emergency nurse practitioners. Now an annual staged simulation typically held at the Houston Fire Department’s Val Jahnke Training Facility, the training day brings together first responders and students from the six UTHealth schools and UT Health San Antonio.

“After 9/11, most organizations started to train on multiple levels for a disaster, but not across the several disciplines of first responders,” Ramirez says. “Our program adds in interdisciplinary practice. The more we learn to work together, the more we learn that each person is a key piece in providing the care needed to save lives during any kind of disaster.”

In addition to her educational work, Ramirez’s research delves deeply into the role of emergency nurse practitioners—their training, their abilities, the future of the specialty, and how to foster ongoing leadership and excellence within the ranks. PARTNERS, a community organization that supports Cizik School of Nursing at UTHealth, awarded her the three-year PARTNERS Faculty Research Scholar endowment in 2017 so she could pursue these discoveries.

“PARTNERS offered me the opportunity to really explore the things I love in my career, and this research not only grew me professionally but also allowed me to help junior faculty members get started in their own work,” she says.

Whether enduring the struggles of COVID-19 or preparing for mass casualty events, Ramirez says that the dedication to taking care of patients runs strong within nurses, and this year has brought their exceptional qualities to the forefront.

“We’re not soft,” she says.
“We’re strong. We’re dedicated. We’re not running away from this.”



Elda G. Ramirez, PhD, RN
Professor, Department of Graduate Studies
Cizik School of Nursing at UTHealth



HEART- POUND



Bentley J. Bobrow, MD

John P. and Kathrine G. McGovern
Distinguished Chair
Professor and Chair, Department
of Emergency Medicine
McGovern Medical School at UTHealth
Nancy, Clive, and Pierce Runnels
Distinguished Professor
in Emergency Medicine



ENDING CARE



139,000,000 emergency department visits occur each year in the United States.



29% of emergency department visits are related to injuries.



1 out of 10 emergency department visits result in hospital admission.

EMERGENCY MEDICINE SPECIALISTS PROVIDE COMPREHENSIVE CARE WITHOUT BOUNDS

The heart rate increases, pumping blood throughout the body. The pupils dilate, letting light into the eyes. The breath quickens, ensuring oxygen reaches muscles and organs. This is the body's response to stress during emergency situations, flooding the system with hormones that trigger the fight-or-flight instinct.

Calm while under this immense pressure, faculty in the Department of Emergency Medicine at McGovern Medical School at UTHealth work efficiently and with precision as they care for patients who find themselves in dire situations. Guiding this effort is Bentley J. Bobrow, MD, who joined UTHealth in 2019 to lead the department.

"Our mission is to improve access to emergency care for everyone with a focus on providing lifesaving care for emergencies like heart attacks, stroke, trauma, brain injury, and severe infections," says Bobrow. "We have an opportunity to save lives and expand care from immediate emergencies to other areas—even continuity of care, public health, and prevention."

Bobrow's vision is to enhance emergency medicine care through the integration of evidence-based practices and public health policies. Faculty in the department conduct innovative, lifesaving trials and research inside and outside of the hospital, including assisting with opioid overdose mitigation—not just to save lives but to provide continuous, effective, integrated programs where patients get the care they need to prevent recurrence. This research is then applied to the patient care and community outreach programs.

"One of our goals is to develop a model to help people who need help but don't necessarily need to come to the emergency room," says Bobrow. "We are using what is called community paramedicine to do this."

Community paramedicine is an emerging field where emergency medical technicians and paramedics operate in expanded roles, helping to manage chronic diseases, monitoring medication compliance, determining a patient's risk for falls, checking on high-risk patients to prevent hospital readmission, and assisting with transports to reduce 911 calls.

In 2019, Bobrow and his team built TX-CARES, expanding the Cardiac Arrest Registry to Enhance Survival network to 9-1-1 agencies, emergency medical services agencies, and hospitals statewide as the first step to measure and improve cardiac arrest care and outcomes across Texas.

"There are about 60 sudden cardiac arrests each day in Texas," says Bobrow. "Today, 60 people will die. Yesterday, 60 people died. Until we started TX-CARES, we did not have a statewide cardiac arrest registry. This allows us to collect data, analyze the data, and implement programs and initiatives."

In the first year, Bobrow's team collected data for over a third of Texas residents who suffer an out-of-hospital cardiac arrest.

The registry helped the team determine that there are enormous disparities between communities based on socioeconomic and racial factors across Texas. The most basic lifesaving procedure, CPR can triple or quadruple the chance of survival. Powered by this information, faculty in the Department of Emergency Medicine can address

those disparities and design programs that aren't just for populations that already have abundant resources.

"This is a new concept—demonstrating how important emergency care is," explains Bobrow. "We work closely with all the other specialists to make sure these patients are optimally cared for. We really are the nexus of how patients fare in the hospital, and we can do more to help prevent them from needing the hospital in the first place."



Andreea S. Xavier, MD

Wyatt Ranches Distinguished Professor
in Geriatric and Palliative Medicine
Assistant Professor, Department
of Emergency Medicine
McGovern Medical School at UTHealth



Charles L. Maddow, MD

Wyatt Ranches Distinguished Professor
in Geriatric and Palliative Medicine
Associate Professor, Department
of Emergency Medicine
McGovern Medical School at UTHealth

PHILANTHROPY AT WORK TO IMPROVE CARE FOR OLDER ADULTS

Healthy older adults have needs that require specialized attention, but add in an emergency situation, and these needs are compounded. Taking a comprehensive approach, hospitalist Andreea S. Xavier, MD, works with Charles L. Maddow, MD, to improve the care of older adults in emergency settings. In recognition of their specialized efforts, Xavier and Maddow were appointed the inaugural holders of the Wyatt Ranches Distinguished Professorships in Geriatric and Palliative Medicine in 2020.

Maddow describes the aging process as a deterioration of homeostasis. “A young person is in a state of homeostasis, where conditions stay the same, and the body can absorb a lot of trauma. Their physiology will ramp up to accommodate it,” explains Maddow. “An older patient is already cutting into that physiological reserve just to maintain function.”

This puts older adults at different risks than younger patients, which requires specialized training for health care professionals to identify different risk factors and approaches to care—just like children and pediatric care. Until fairly recently, people 65 and older were treated just like other adults. However, as we learn more about their specific needs, our understanding has changed. Maddow’s goal is to teach the knowledge and skills of geriatric emergency care to prepare health care professionals to appropriately treat the increasing number of older adults in our communities. UTHHealth houses one of the few academic programs that specializes in geriatric emergency medicine.

“I introduce this concept and make sure our students and health professionals know what to do with those differences—such as identifying early pre-shock states because older adults hide it well, or working with pharmacists to identify when there is a better alternative to a medication,” he says. “It’s a huge honor

and responsibility to hold the Wyatt Ranches Distinguished Professorship, which is helping me with this training initiative. There’s so much to be done, and I’ve been given a great tool with which to get it done.”

When an older adult arrives in the emergency room to receive outpatient care, Maddow will conduct an assessment to determine the patient’s needs. If the patient needs to spend time in a hospital, then Maddow transfers care to Xavier. “There’s a lot of communication between the hospitalists and the frontline emergency providers,” says Maddow. “It’s really collaborative.”

In addition to serving on faculty in the Department of Emergency Medicine, Xavier is the Medical Director of the Hospital Medicine Team at Memorial Hermann-Texas Medical Center. The team cares for geriatric patients across the hospital. Xavier is using funds from the Wyatt Ranches Distinguished Professorship to educate faculty, students, and residents on the unique needs of older adults.

Together, the geriatrics team and the Hospital Medicine Team established a certification program for acute care providers. This 13-month interdisciplinary course will provide essential geriatric health training to professionals from across disciplines, including topics such as prescribing age-appropriate medications, recognizing the difference between illness and normal aging, and managing multiple chronic conditions. The first phase began in October 2020.

“I’m honored and humbled by this great opportunity to hold the Wyatt Ranches Distinguished Professorship,” reflects Xavier. “I see it as an avenue to improve the way we care for older adults and to implement patient-centered care, especially as we transition care from outpatient to inpatient settings.”

THANK

Thank you to the health care professionals who work diligently on the frontlines of the COVID-19 pandemic.

From our nurses, physicians, researchers, and public health workers to our students who follow in their footsteps, to our donors who fuel their efforts, we are improving health in our communities.

Together, we are the many faces of UTHealth.



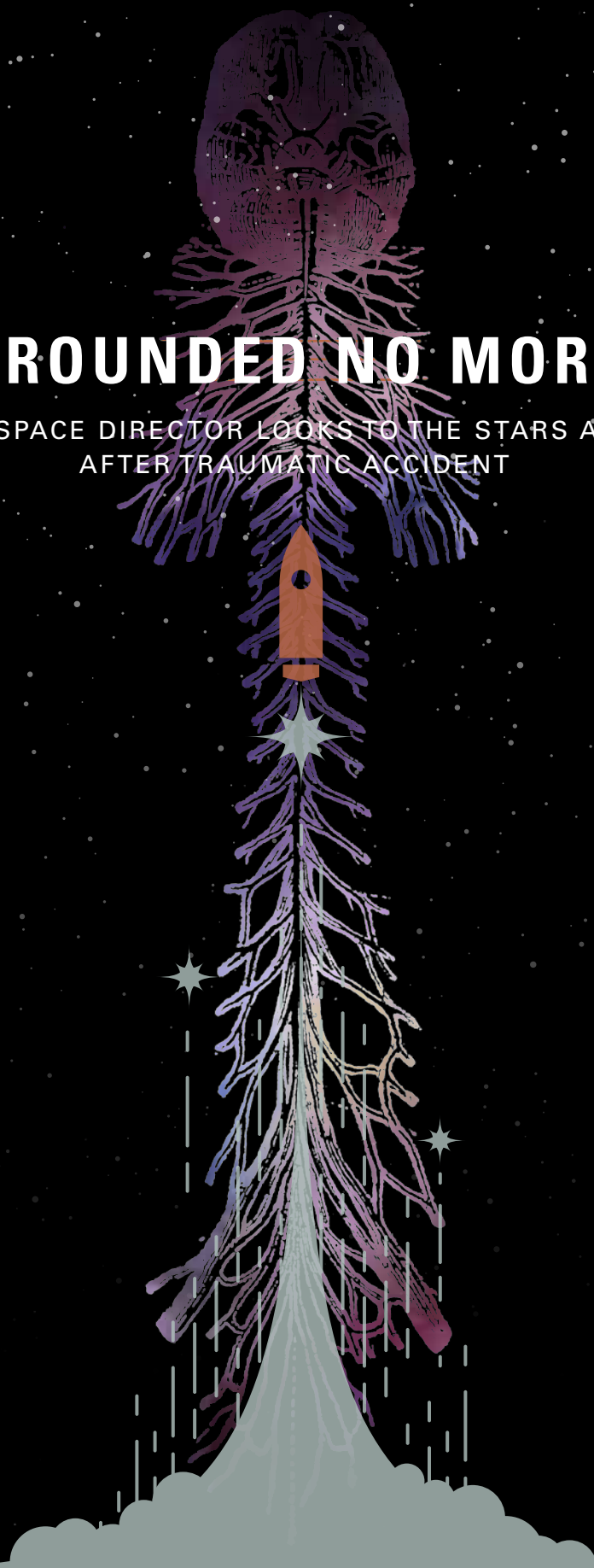
YOU





GROUND NO MORE

AEROSPACE DIRECTOR LOOKS TO THE STARS AGAIN
AFTER TRAUMATIC ACCIDENT





By John Muratore's own admission, he was a real mess. Two weeks out of surgery to repair cracked spinal vertebrae and a severely broken leg, he arrived at TIRR Memorial Hermann where specialists from McGovern Medical School at UTHealth helped him through the first stage of rehabilitation, draped with a surgical gown over a soiled medical diaper.

Limbs numb, unable to sit up, a cervical collar guarding his fractured neck, he lay helpless in the aftermath of a head-on vehicle collision in September 2019. His physical therapist conducted an initial assessment, cleaned him up, and exchanged his hospital garb for a fresh polo shirt, shorts, and a sneaker for his good foot.

"I don't want to disappoint you," John said, "but I won't be able to do much of anything."

"John, my friend," the therapist replied, "tomorrow, we start to work."

A United States Air Force veteran, John carries the forward-looking military ethos that drove him to excel in a decades-long career in aerospace, first for NASA and then for a private space exploration company.

On the first day of rehabilitation, therapists worked alongside John to get him sitting up in a wheelchair—a process that took three hours as he repeatedly passed out. A day later, they could wheel him to the end of his room.



John Munz, MD

Rochelle and Max Levit Chair
in Orthopedic Surgery
Walter R. Lowe, MD, Professor
Associate Professor, Department
of Orthopedic Surgery
McGovern Medical School at UTHealth



Shah-Nawaz Dodwad, MD

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



"The next day, we made it down to the gym," John says. "I told them, 'I don't know what you expect me to do here, but I'll try.'"

Over the course of a month, John painstakingly rebuilt his physical stamina and learned to walk again while his limbs recovered most of the feeling they had lost when the crash jarred his spinal cord out of alignment. Titanium rods and cadaver bones—part of the surgical repair UTHealth surgeons John Munz, MD, and Shah-Nawaz Dodwad, MD, performed—held his neck and leg stable.

"The physical therapists pushed me to get better every day," John says. "They were relentless but incredibly kind. It was truly amazing to work with them."

John lightened the mood at group exercise classes with his trademark humor—a weight stick found new purpose as a lightsaber—and bantered so freely with his wife, Mary, during therapy sessions that their comedy show started drawing a small crowd.

"People asked me how I got through this," he says. "I have an amazing wife, had an incredible medical team, I didn't give up, and God blessed me with healing. I stand on those four pillars today."

Living at TIRR Memorial Hermann also brought John into contact with patients across the spectrum of injury. Even though he labored to regain basic functions, he knew he would eventually get them back. Others might never eat, drink, breathe, or walk unassisted again.

"They were such an inspiration to me," he says. "Not only the patients, but the doctors, nurses, therapists. It was an incredible place with so many people striving to overcome unbelievable hardships."

After being discharged from TIRR Memorial Hermann on November 10, 2019, he returned to his home in Brownsville, Texas, a month and a half after a helicopter airlifted him to the Texas Medical Center. He still has some lingering numbness and neck pain, but he makes it up and down stairs now and has returned to work.

John has changed in quite a few ways since his accident. He expresses his emotions more freely, enjoys a richer relationship with his family, and has a new perspective on daily difficulties that seem insignificant now. He also developed new inexplicable tastes for coffee and champagne.

"I can't resist making a bad joke now either," he says. "I think I'm incredibly funny."

He will always carry the memories of his unexpected time at TIRR Memorial Hermann—an experience that, although filled with intense struggle, has helped shape him in many positive ways. He even sees the lingering difficulties from his injury in a new light.

"I may not have complete restoration to what life used to be, but I'm grateful to have come this far after wondering if I would ever walk again," John says. "I'm still amazed by how the physicians from McGovern Medical School spent so many years of their lives learning these skills so they could help me."



Thanks to UTHealth surgeons and rehabilitation experts, John Muratore was able to return to his job in aerospace engineering three months after a head-on collision fractured his spine.

KEEPING

NEWLY EXPANDED



Joanna Popovits' journey to becoming a nurse began with her grandmother, Teresita Alicia Pineiro. Growing up, Teresita's drive and determination to help others served as inspiration for Joanna, who inherited her grandmother's work ethic and giving heart. But as Teresita's health declined, Joanna noticed she had trouble at the doctor's office.

IT REAL



SIMULATION LAB HELPS TRAIN NURSING STUDENTS



Over the next 15 years, one million registered nurses will retire, adding to the nationwide nursing shortage. With the recent renovation, the Simulation and Clinical Performance Laboratory at Cizik School of Nursing at UTHealth will educate more students to help address this shortage.

“My grandmother is so full of life, but medical appointments can be challenging for her because she doesn’t speak much English,” Joanna says. “In translating for her, I realized the kind of impact I could have in helping people navigate health care.”

This desire to help others led Joanna to pursue a nursing degree at Cizik School of Nursing at UTHealth, where the newly renovated Simulation and Clinical Performance Laboratory (Sim Lab) helped her develop important clinical skills by working through real patient scenarios on lifelike manikins.

"I was a little nervous when I began working in the Sim Lab," says Joanna, now a senior nursing student. "But after learning more and becoming confident in my skills, I can go through the simulation to ensure the best possible outcome for the patient."

In the newly renovated 27,000-square-foot Sim Lab, newer students can practice basic skills like administering medications and taking vital signs, while advanced students are able to hone more specialized techniques. Because students practice on manikins, they can perfect their clinical skills before working with patients.

"We work through real-life patient scenarios, which requires teamwork and thinking outside the box," Joanna says. "I like that because it is what nurses do every day in hospitals and clinical settings."

Although the COVID-19 pandemic closed many clinic doors, Joanna and her peers were able to substitute simulation experiences for up to half of their traditional clinical hour requirements. Joanna has already taken advantage of Sim Lab opportunities to brush up on her clinical skills during the pandemic.

"I am so grateful for the faculty and staff at the Sim Lab," she says. "They have offered extraordinary support during COVID-19 and really helped me prepare for my clinical rotations."

After losing her father unexpectedly in a car accident in 2019, Joanna struggled in one of her classes. Finding inspiration in her grandmother's strength, Joanna has persevered and will soon graduate from nursing school. In the end, she believes her heartbreak will make her a stronger nurse.

"I take my father's memory with me every day as a reminder of what my patients and their families might be going through," Joanna says. "Keeping him close helps me give patients the best possible care no matter the circumstances."

As she looks to her final semester of nursing school, Joanna says she is ready to take on her first job after she graduates. And she believes that Sim Lab and clinical opportunities have helped prepare her for whatever the future brings.

"Every time I walk into the lab, it's like I'm walking into the hospital to care for real patients," she says. "I become the professional nurse I was meant to be."





AGING HEALTHY, AGING SMART

From landing on the moon to the rise of personal computers, older adults have witnessed profound technological advancements during their lifetimes. In recent years, these advancements have taken the form of smart devices, many of which can help aging adults stay at home longer. But how do you determine what technology is dependable and easy to use?

To help seniors navigate this wave of age-friendly products, the Smart Apartment at Cizik School of Nursing serves as a living laboratory to pilot test services and devices. The one-bedroom apartment contains all the usual amenities of a home—from a fully furnished living space to a full kitchen and bathroom.

“Many older adults want to remain in their homes rather than transition to an assisted living facility,” says Constance M. Johnson, PhD, RN. “We created a space to determine what technology is useful and can help people stay at home for as long as possible.”

In early 2020, Johnson awarded the first three Internet of Things and Aging in Place Seed Grants using funds from her endowed appointment as the Maria C. and Christopher J. Pappas Family Distinguished Chair in Nursing and the

Rice ENRICH program. In partnership with Rice University, these grants support interdisciplinary teams from both institutions to test ideas in the Smart Apartment.

Each project focuses on a different technology, including products designed to improve the independence of older adults suffering from common age-related conditions. From motion detectors to identify distress in stroke survivors, to assistive devices that help dementia patients, to voice-activated artificial intelligence that can answer medication questions, each study will gather important pilot data that will spur advancements in technology to help older adults age in place.

“The COVID-19 pandemic has highlighted the need for technological support and monitoring for older adults,” Johnson says. “Thanks to the generosity of the Pappas family, we are able to work toward helping them thrive at home for years to come.”

Constance M. Johnson, PhD, RN

Maria C. and Christopher J. Pappas
Family Distinguished Chair in Nursing
Lee and Joseph Jamail Distinguished
Professor in the School of Nursing
Associate Dean of Research
Professor and Chair, Department of Research
Cizik School of Nursing at UTHealth

Professor
UTHealth School of Biomedical Informatics

A TIMELESS COMMITMENT

COUPLE MAKES A GIFT TO ADVANCE CARE FOR OLDER ADULTS



Over the years, Joan and Stanford Alexander developed a close relationship with Holly M. Holmes, MD. Commemorating this bond, they made a substantial commitment to McGovern Medical School at UTHealth through The Stanford and Joan Alexander Foundation.



In a society that worships youth, a physician who treasures older adults stands apart.

Joan and Stanford Alexander needed a primary care doctor to manage their health as they advanced in years, and what—or rather who—they found led to a transformative decision.

Holly Holmes, MD, directs the Division of Geriatric and Palliative Medicine at McGovern Medical School at UTHealth and provides care through UT Physicians Center for Healthy Aging, a part of UTHealth. Her work focuses on ensuring older adults receive specialized care from practitioners who have both the training to meet their unique needs and a genuine heart for their well-being.

“After meeting Dr. Holmes, it became clear we had found our doctor,” says Joan. “She is not only an expert in the field of geriatrics, but one of the most compassionate and caring physicians and individuals we ever have met.”

Amid a rapidly growing population of older adults, only 2% of physicians qualify as geriatricians. This has prompted concerns that our nation’s health care system will not have the expertise to provide older adults with the care they need to enjoy full, healthy lives.

Holmes and her colleagues within the division are working to make the kind of care the Alexanders experience more widely available. This includes developing an interprofessional education program to train providers across UTHealth in the principles of geriatric medicine, creating a pipeline of practitioners who can help mitigate the shortage of geriatricians.

The division’s research complements these efforts through initiatives such as working to prevent and remedy elder abuse, reducing the prescribing of multiple drugs (which can cause harmful interactions in older adults), and discovering ways to detect and reverse frailty among older adults, especially the homebound.

“Just as medicine recognizes the unique needs of pediatric patients, we believe older adults deserve the same kind of specialized attention,” says Holmes. “We are dedicated to their lives, their futures, and the ongoing progress of geriatric medicine.”

In gratitude for the difference Holmes has made in their lives, and with a vision to extend the same care to others, the Alexanders made a significant commitment to the division. In recognition of their generosity, the division has been named the Joan and Stanford Alexander Division of Geriatric and Palliative Medicine.



Holly Holmes, MD

Joan and Stanford Alexander Chair in Gerontology
Associate Professor and Director, Joan and Stanford
Alexander Division of Geriatric and Palliative Medicine
Department of Internal Medicine
McGovern Medical School at UTHealth

Their support will impact the division in three significant ways. First, it establishes the Joan and Stanford Alexander Chair in Gerontology (held by Holmes), providing additional resources to support the professional development of faculty in the division.

Their generosity also promotes a greater understanding of the unique needs of older adults with the creation of a Gerontology Education Endowment. In addition to supporting the interprofessional education program, this endowment will help educate patients with dementia and their caregivers—an important step given the increasing toll of neurodegenerative diseases.

Finally, to promote advances in medical science that improve the lives of older adults, their commitment creates a research endowment. This fund provides seed grants for faculty to conduct pilot studies to explore topics, such as physical function in homebound elders, which will generate the data they need to attract large external grants for their research. The endowment will also provide bridge funding for faculty to maintain their work between grants.

“We see a tremendous need to ensure that people of older age are not discarded, but rather valued as Dr. Holmes values us,” Joan says. “We believe our commitment is a step in the right direction, and at the right time.”

The Alexanders have provided a powerful and timely source of much needed funds to the division as the COVID-19 pandemic strains health systems. Holmes says the funds will prove crucial to meeting the growing needs of older adults during these uncertain times while also laying a foundation for the future.

“I am profoundly grateful for what Joan and Stanford have chosen to do—not just for the division, but for older adults everywhere,” Holmes says. “We are honored to carry their names here for all time.”

“We are hopeful that our commitment will raise awareness and encourage others to help strengthen the division’s efforts,” Stanford says. “It is vital to the mission of UTHealth to train more health professionals in both the skills and mindset to serve older adults.”

“When we are with Dr. Holmes, she focuses on us completely, always respectful and actively listening,” Joan says. “She treats the whole person, which helps us fully live as our best selves in what is meant to be a wonderful time of life.”

A TEAM EFFORT TO END ELDER ABUSE

Even as he applied for the job opening, Jason L. Burnett, PhD, had no idea what a geriatric specialist actually did; fresh out of graduate school, he thought it might have something to do with nutrition for older adults.

“But I knew I had to get a job if I wanted to eat, so I applied,” he says.

Now a passionate advocate for older adults, Burnett’s unexpected career path has blossomed into a deeply held commitment to fighting elder abuse—one that earned a 2019 Innovator in Aging award from the Texas Department of Health and Human Services.

“When I first started doing assessments for self-neglect, I developed such a fondness for older adults that only grew over time,” he says. “I met fascinating people with great stories who had fallen on hard times, and I realized there’s so much more to be done.”



Jason L. Burnett, PhD

Associate Professor, Joan and Stanford
Alexander Division of Geriatric
and Palliative Medicine
Department of Internal Medicine
McGovern Medical School at UTHealth

Co-Director, Texas Elder Abuse
and Mistreatment Institute

Burnett co-directs the Texas Elder Abuse and Mistreatment Institute (TEAM), a partnership between UTHealth and the Texas Department of Family and Protective Services, Division of Adult Protective Services (APS). TEAM works to prevent elder abuse while improving the lives of older adults who have already suffered abuse, neglect, and exploitation.

For years APS struggled with care planning for medically complex older adults who might lack decision-making abilities. Once in question, determining whether a person can function autonomously requires a functional capacity assessment, which sometimes takes several weeks, especially in remote areas.

Recognizing that technology could hold the key, Burnett and his team created an online portal that APS can use to indicate when an older adult needs an assessment. Using a tablet or smartphone, an APS caseworker can have a geriatric health care specialist from TEAM conduct a video assessment and save critical time.

“Within the first three months, every APS district in the state had used it,” he says. “Prior to this, we would assess 80 to 100 cases a year. Now, we’re looking at around 600. Other states have reached out to us about replicating the program.”

Burnett sees the Innovator in Aging award not as a recognition of his own effort, but of the people who worked together to make the program a reality.

“It’s a good reward for our team doing something innovative that really touches lives of older adults every day,” he says.

CROWDFUNDING HELPS OLDER ADULTS STAY IN TOUCH THROUGH TECHNOLOGY

While COVID-19 has caused significant challenges for older adults, the technological changes it has spawned may offer the solution.

Social distancing guidelines combined with the greater vulnerability of older adults to COVID-19 has caused many to self-isolate. This can lead to avoiding doctor's visits and forsaking the regular social interaction that promotes physical and emotional well-being.

"We have seen an exponential increase in feelings of loneliness and isolation among older adults, and we immediately recognized this as a problem we needed to solve," says Carmel B. Dyer, MD.

The same video chat technology that facilitated working from home can help older adults maintain connections with friends, family, and health professionals. Because many older adults cannot afford laptops, tablets, or smartphones, Dyer launched a campaign on UTHealth's crowdfunding platform to raise \$25,000 to provide tablets to hospitalized and homebound older adults living in social isolation.

The initiative exceeded its goal, raising more than \$30,000. A UTHealth nurse shared a message through the campaign page about giving one of the tablets to her patient: "It was quite an experience! [He] was very appreciative and humbled by the gift, and I know it will be very helpful to him in this difficult time and beyond!"

By providing the means to stay connected, Dyer says donors are helping older adults overcome isolation and connect with their loved ones.

"With the virus making things so hard on our older patients, it's encouraging to see how much support this has received," Dyer says. "They deserve the absolute best care in every way—especially in times like these."



Carmel B. Dyer, MD

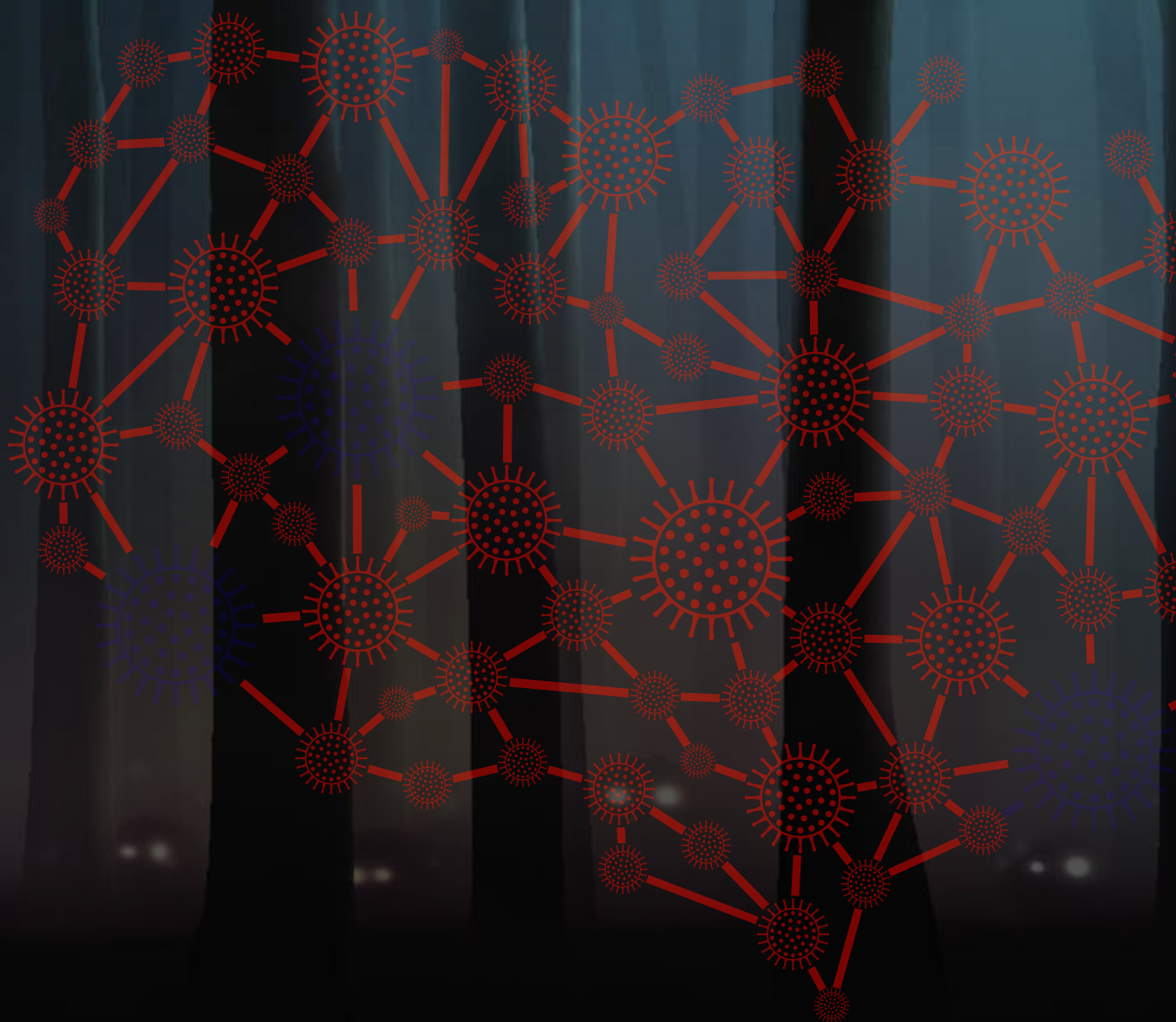
Roy M. and Phyllis Gough Huffington Chair in Gerontology
Nancy P. and Vincent F. Guinee Distinguished Chair
Professor, Joan and Stanford Alexander Division
of Geriatric and Palliative Medicine
Department of Internal Medicine
McGovern Medical School at UTHealth

Executive Director, UTHealth Consortium on Aging

UNCOVERING THE

UNKNOWN

PROVIDING CLARITY
ON COVID-19 THROUGH
PUBLIC HEALTH





W N

People have always been afraid of the unknown—an evolutionary trait that most likely surfaced by keeping those who were more cautious safe. When the COVID-19 pandemic first surfaced, the scariest parts of the virus were the unknowns. Who was susceptible? Why would seemingly healthy individuals fall to bad outcomes? How was the virus spreading and when would it stop?

Primed to address crises like this, public health specialists leapt to the forefront. Leading efforts in Houston and advising city officials how best to respond is Eric Boerwinkle, PhD.

“UTHealth School of Public Health is in many ways ideally situated because we are like Switzerland,” Boerwinkle explains. “There are many hospitals and medical schools, but there is only one public health school in Houston. We have very good relationships with our partners in the Texas Medical Center and regional campuses throughout Texas, and we have a reputation for bringing people together.”

While experts from UTHealth School of Public Health initially helped provide data and projections for how the virus would impact communities, Boerwinkle quickly realized that the long-term consequences of the virus would reverberate in our communities for what is likely to be decades. This was the genesis of the COVID-19+ Cohort study, a collaborative effort with a primary goal of identifying predictors of bad and good outcomes, particularly modifiable predictors, and assessing the lingering damage from the virus.

FACTORS CONTRIBUTING TO COVID-19 OUTCOMES



age



ancestry



comorbidities



smoking status

SOCIAL DETERMINANTS OF HEALTH

INCLUDING



housing



transportation



access to food

“We are fortunate in Southeast Texas to have a functioning health information exchange,” explains Boerwinkle. A health information exchange is an infrastructure that enables health care providers to share patient information across health care systems to help improve patient care. Greater Houston Healthconnect is a regional health information exchange extensively covering Southeast Texas (approximately nine million individuals) with greater than 90% participation rates (including safety net hospitals and Federally Qualified Health Centers). “The health information exchange infrastructure was already in place as was the ability and approvals to conduct quality improvement and outcomes research within the context of the health information exchange, so when COVID-19 came along, we were able to leverage this to see the clinical side and the community side of the virus.”

In addition to Boerwinkle, genetic epidemiologist Alanna C. Morrison, PhD, and nutritionist Shreela Sharma, PhD, RD, are helping to build a more complete picture.

“Health disparity is at the center of COVID-19,” says Sharma, whose research focuses on social determinants of health, such as access to food, transportation, and housing. “The cohort allows us to drill deeper into the health disparity issues that our communities are facing.”

“It is not about a person’s skin color or language; rather, it is the circumstances of their life that is a major factor here,” adds Boerwinkle.

Students at the School of Public Health are behind the scenes as well, putting what they are learning into action and helping to interpret data in real time. “They are building skills to determine when something is time-sensitive and needs an immediate response—and to manage their own time,” says Sharma. “They have been incredible, providing that backbone and the resources to move this forward.”



Eric Boerwinkle, PhD

Dean

M. David Low Chair in Public Health
Kozmetsky Family Chair
in Human Genetics

Professor, Center for Human Genetics
and Department of Epidemiology
UTHealth School of Public Health

Quantitative Sciences Program
MD Anderson UTHealth Graduate School

Shreela Sharma, PhD, RD

Professor, Department of
Epidemiology, Human Genetics
and Environmental Sciences
UTHealth School of Public Health



Alanna C. Morrison, PhD

Professor and Chair, Department
of Epidemiology, Human Genetics
and Environmental Sciences
Director, Human Genetics Center
UTHealth School of Public Health

Genetics and Epigenetics Program
Quantitative Sciences Program
MD Anderson UTHealth Graduate School



The first phase of the study examined 8,864 records from a diverse group of patients who had COVID-19 throughout Texas. The next phase adds an additional 150,000 records of both adults and children. Faculty from UTHealth School of Biomedical Informatics are helping to interpret the vast amount of data, and experts in the Division of Infectious Diseases at McGovern Medical School at UTHealth help translate the findings into public health measures.

“On the national stage, there isn’t a better setting than Houston and the Texas Medical Center, where you can bring together so much data from so many health care systems with diversity in ethnicities, age, and socioeconomic status,” says Morrison. “The School of Public Health—and the university as a whole—is interdisciplinary by nature. It has been fantastic how people have worked together so well.”

Philanthropy has been a keystone to bringing this cohort study to fruition. Support from the John P. McGovern Foundation, The Elkins Foundation, The Cullen Trust for Health Care, and The Cullen Foundation helped fund critical hires and the technology to initiate the study.

“It is not melodramatic to say that we would not be where we are today with the cohort, if it were not for those four foundations stepping up early,” adds Boerwinkle.

Thanks to their support, we are developing a picture—perhaps the best picture—of what is really happening in our community and how that translates to what we are seeing in the hospitals.

“As we transition from a battle against the virus, we are entering a phase of trying to live with the virus,” says Boerwinkle. “I think that insight of the balance between the community and clinic will be incredibly important.”

And with that data, the unknown slowly becomes the known—and a little less scary.



A GIFT LIKE NO OTHER

A FAMILY HONORS THE MEMORY OF A LEADER IN GLOBAL HEALTH

Not all gifts come in a box with a bow tied on top. For some, it's a gift of life after surviving an illness or a child born into a family. For others, it's an experience with a loved one that leaves a lasting memory. For Stanley G. Schultz, MD, the gift that changed his life came in the form of a cholera toxin sample, which inspired his passion for global health.

As a captain in the medical corps at Brooks Air Force Base in San Antonio, Texas, Schultz discovered in 1962 that restoring the body's balance of salt and glucose resulted in rapid rehydration in the mucus lining of intestines. All that was needed was a small packet of sodium chloride, potassium chloride, and glucose mixed into a gallon of drinking water.

His finding resulted in the development of a lifesaving oral rehydration therapy—a simple, inexpensive treatment that could be served as a beverage—which saved tens of millions of people around the world. In 2003, the American Physiological Society honored Schultz with the Daggs Award for his lifelong work in this area, and in 2006, his work was internationally recognized when he received the Prince Mahidol Award in Medicine by King Bhumibol Adulyadej of Thailand.

Schultz joined the faculty of McGovern Medical School at UTHealth in 1979, serving as Chair of the Department of Physiology and Cell Biology and Dean of the school from 2003 to 2006. Before his retirement in 2010, Schultz's pioneering research and exceptional mentorship set into motion a series of events that ultimately bolstered global health training at the school. Known for his sage advice, he impressed upon medical students the importance of using their hands, eyes, ears, and head when caring for patients.

"I implore you as you progress in your studies, don't ever treat your patients like case numbers—a disease in need of a cure," Schultz told first-year medical students during the school's White Coat Ceremony in August 2004. "They are people who have feelings, loved ones, and aspirations. Become a healer, not a repairman."



Stanley G. Schultz, MD, received the 2006 Prince Mahidol Award for research findings that continue to have a profound impact on global health.



In honor of Schultz's pioneering research and mentorship, his family established a professorship to carry forward his vision of global health training for generations to come.

In spring 2020, his family watched from afar as UTHHealth's health care professionals rapidly created the frontlines of defense against COVID-19. The pandemic punctuated the significance of global health and instilled in the Schultz family an urgency to respond with the creation of the Stanley G. Schultz, MD, Endowed Professorship in Global Health.

"On the sixth anniversary of his death in 2014, we wanted to find a way to ensure that his global health efforts continue through others," says his wife, Harriet.

"In the midst of a pandemic, it has become increasingly obvious to everyone around the world how important global health is and how in many ways it has been too much of an afterthought," explains his son Kenneth. "It seems very appropriate at this time to do whatever we can to support this effort and call attention to the importance of global health now and in the future."

"Our dad was passionate about getting discoveries out of the lab, into the field, and into the hands of those in need," adds Jeffrey, his other son. "The professorship is about that need to be there, to be hands-on."

Patricia Butler, MD, fondly recalls Schultz's dedication to his students and global health. "Dr. Schultz was passionate about educating our students about global health," Butler says. "He would have been delighted that his family has endowed this professorship in his name."

As a leader of the global health scholarly concentration at McGovern Medical School, Deepa Iyengar, MD, was the ideal candidate to become the inaugural holder of the Schultz Professorship in Global Health.

While completing a family medicine residency, Iyengar met Schultz during a presentation on oral hydration therapy. It was that meeting, she says, that established the roots of her interest in global health. She now co-directs the Center for Global Health at McGovern Medical School and has a vision for expanding the center's activities university-wide. She also studies how cultural backgrounds impact health.

"Dr. Schultz leaves such a big legacy and gives us all a reason to pursue our dreams," Iyengar says. "I am so grateful to the family and value this professorship, which will allow me to put into action some of the global health initiatives he would have hoped for."



Patricia Butler, MD

Vice Dean, Educational Programs
Professor, Faillace Department
of Psychiatry and Behavioral Sciences
McGovern Medical School at UTHealth



Deepa Iyengar, MD

Stanley G. Schultz, MD, Endowed Professor
in Global Health
Professor, Department of Family
and Community Medicine
Co-Director, Center for Global Health
McGovern Medical School at UTHealth

TRIP INTERRUPTED



A COUPLE SURVIVES COVID-19 AND DONATES PLASMA
TO HELP OTHERS RECOVER

In 2018, Jose Abdelnoor, 72, and his wife, Evelyn Diaz, 67, decided it was time to close the chapter on their careers and begin enjoying the fruits of retirement. The Houston couple, veterans of the United States Armed Forces who went on to productive corporate careers, purchased a van to realize their dream of touring the country. While their passports arrayed pages stamped with colorful ink, their destination wish list in the United States—including stops from Florida to Alaska—had few checkmarks.

Over the next two years, Jose and Evelyn completed a few short trips as they geared up for some extended cross-country journeys. But just as they began plotting grand adventures, the COVID-19 pandemic shook the world.

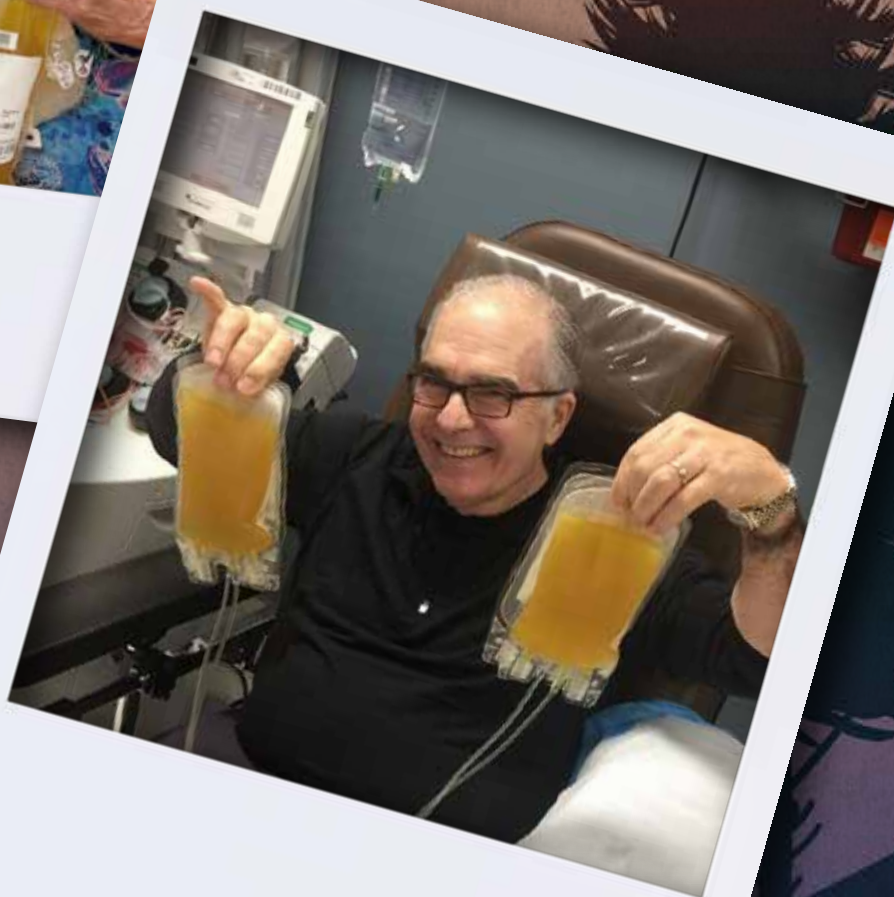
“The pandemic has been rough on everyone, and it has been especially difficult for us,” says Jose. “We have been through a lot since the initial outbreak, and we are grateful to still be here.”



Heinrich Taegtmeier, MD, DPhil

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

Biochemistry and Cell Biology Program
MD Anderson UTHealth Graduate School



After Jose Abdelnoor and his wife, Evelyn Diaz, recovered from COVID-19, they decided to donate their antibody-rich plasma to help other patients fight off the disease. Although the virus upended the couple's life, they say donating plasma made their struggles worth it.

As COVID-19 prompted widespread lockdowns and travel restrictions throughout the United States in March 2020, the couple traveled out of state for a death in the family. After they returned to Houston with flu-like symptoms, both tested positive for COVID-19.

“Between the breathing difficulties, body aches, and fatigue, I felt like I was losing my mind,” says Evelyn. “We both reached a point where we got so sick and breathing became so hard that we felt we may not make it.”

While the illness lingered for what seemed like an eternity, they credit their UT Physicians cardiologist Heinrich Taegtmeyer, MD, DPhil, with standing by them every step of the way.

Evelyn says she will always remember Taegtmeyer’s reassuring words when they called to tell him that they had both tested positive for COVID-19: “We will get through this together.”

“He changed our mindset from fear to believing that we could overcome the illness,” she says. “He called to check in on us every day, taking our blood pressure and temperatures and giving us breathing exercises to help us get more oxygen.”

With Taegtmeyer’s guidance, plenty of rest, and constant hydration, Jose and Evelyn slowly recovered at home over the course of about a month and a half.

“I have cared for Jose and Evelyn for years and know them well,” says Taegtmeyer. “I am glad that I could help them during this difficult time, and I am grateful that they have made a full recovery.”

After recovering, Jose and Evelyn wanted to help others who were fighting COVID-19. Following Taegtmeyer’s recommendation to donate plasma, they joined the ranks of some of the first people to do so.

In people who have recovered from COVID-19, plasma—the component of blood that carries cells and proteins throughout the body—can be full of antibodies that know how to eliminate the virus. Transfusing this antibody-rich plasma into patients who are sick with COVID-19 may help them overcome the illness.

Jose recovered from the virus more quickly than Evelyn did, and he enrolled in the investigational plasma program at UTHealth and Memorial Hermann-Texas Medical Center. The program ended shortly after the United States Food and Drug Administration issued an emergency use authorization for convalescent plasma in August 2020, making the treatment more accessible to patients across the nation.

“Donating plasma was a great feeling,” says Jose. “It was quick and painless, and it gave me the feeling that I might be able to give someone else another chance to live.”

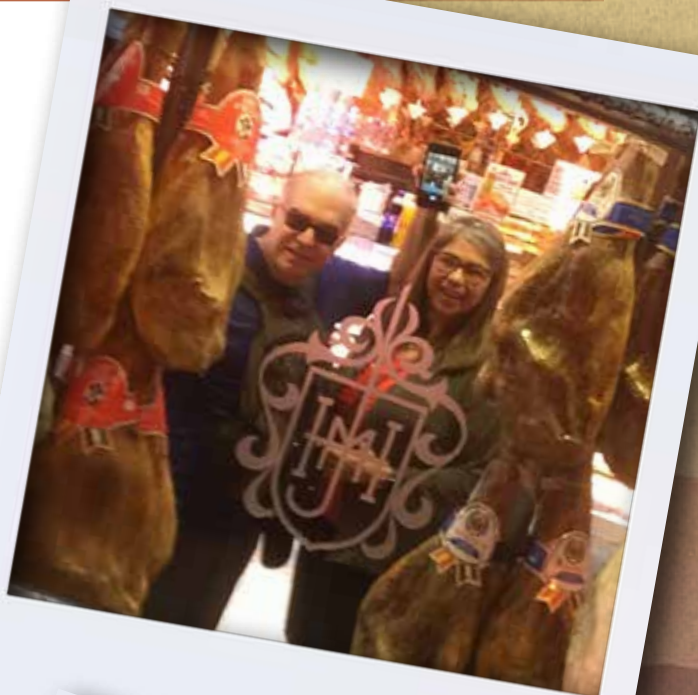
Once Evelyn recovered, she decided to donate plasma at The University of Texas MD Anderson Cancer Center Blood Bank in hopes of helping patients who are fighting cancer and COVID-19.



As Jose and Evelyn adjust to a new life created by the pandemic, they continue finding ways to help others. After researching the importance of wearing masks to help prevent the spread of the virus, Evelyn began creating them to keep friends and loved ones safe—including Taegtmeyer.

“I think back on the moments where I was out of breath, and I see how important it is to protect ourselves and the people we care about,” she says.

The couple reflects on their trials with gratitude, and they look forward to returning to their travel plans once the threat of COVID-19 has subsided. For now, they are happy to continue doing what they can to help others.



LEADING THROUGH THE STORM

UTHEALTH ALUM NAVIGATES COUNTY HEALTH SYSTEM THROUGH COVID-19



Esmaeil Porsa, MD '05, has his hands full these days. As President and CEO of Harris Health System, he oversees the Harris County government entity that owns and operates clinical facilities such as Lyndon B. Johnson Hospital and Ben Taub Hospital. Porsa took the helm in March 2020 with a baptism of fire in the form of COVID-19. From the early stages when scientists struggled to understand the virus to the dark days in July when intensive care units overflowed with patients, clinic and hospital staff faced daunting challenges.

"They not only cared for a lot of very sick patients, but they also had to question if they might bring the infection home to their loved ones," he says. "I can only imagine how stressful that must have been."

Porsa draws on a wealth of UTHealth experience in his role. He completed his internal medicine residency at McGovern Medical School at UTHealth under Philip Johnson, MD, and counted Cheves Smythe, MD, the school's first dean, among his mentors. As a graduate of the General Medicine fellowship program—where he now serves as an adjunct professor—he joins other notable alumni whose advanced training has proven crucial throughout their careers in health care.

Porsa also earned his Master of Public Health at UTHealth School of Public Health, where he taught epidemiology and biostatistics before leaving to take on a series of executive health care roles.

"All my experiences there helped prepare me for what came next," he says.



Esmaeil Porsa, MD, (black facemask) continues to navigate Harris Health System through the COVID-19 pandemic with the help of the knowledge and experience he gained at UTHealth.



Even amid the many harmful ways COVID-19 challenged the world, Porsa has seen positive developments emerge from the pandemic. Harris Health now has a robust telemedicine program, Porsa has formed close working relationships with other health executives and government leaders, and health workers throughout the county have shown a powerful spirit of unity—one that represents the community Porsa proudly calls home.

“I have witnessed a tremendous story of triumph, resilience, and grit here in Houston,” he says. “I think it’s my duty to amplify and communicate that story as often as I can.”



Philip C. Johnson, MD

The Carolyn and William T. Deffebach
Distinguished Professor
The Jerold B. Katz Family Distinguished
Professor in General Internal Medicine
Professor and Chair, Division of General
Internal Medicine
Department of Internal Medicine
McGovern Medical School at UTHealth



FIGHTING *for* A



RESEARCHERS AND CLINICIANS TACKLE LASTING EFFECTS OF COVID-19

A sinister intruder, the coronavirus known as SARS-CoV-2 infects the body in the same way other viruses do—by hijacking healthy cells and forcing them to create copies of the virus. But this virus has a secret weapon: spiky surface proteins that easily bind to cells in the lungs, making the lungs especially susceptible to infection.

As the lungs fight the virus, the body's immune system triggers inflammation to help defend against the intruder. While lung inflammation can cause breathing difficulties, most people recover from COVID-19. But in the most serious cases, the body's immune system may go into overdrive, causing widespread inflammation that can damage lung tissue.

This can lead to acute respiratory distress syndrome (ARDS), a life-threatening injury that allows fluid to leak into the lungs, causing extreme breathing difficulties. With no cure for ARDS, physicians can only offer patients supportive care, often using a ventilator to assist breathing in hopes that the lungs will eventually heal.

Xiaoyi Yuan, PhD, and her team study acute respiratory distress syndrome, a serious complication of COVID-19, using the hypoxia chamber. The hypoxia chamber can simulate low-oxygen environments to help researchers explore how they impact patients.

WIR



Breathing in hope

Physician-scientist Holger Eltzschig, MD, PhD, has studied ARDS for nearly two decades. In a 2013 preclinical study, his team found that a specific protein can help protect the lungs by reducing inflammation and fluid buildup during ARDS. Now, in partnership with clinical expert Bentley J. Bobrow, MD, the team is on the precipice of unlocking an innovative treatment that activates this protein to treat ARDS in patients with COVID-19.

With Bobrow serving as principal investigator, the team is leading a randomized clinical trial to determine whether an investigational oral drug called vadadustat—which activates the protective protein—can help COVID-19 patients with ARDS. Although vadadustat, created by Akebia Therapeutics, is currently in development to treat patients with anemia of chronic kidney disease, Eltzschig quickly recognized its potential to defend against one complication of COVID-19.

“All of my lab’s research in ARDS over the last 20 years has led to this moment,” says Eltzschig. “Dr. Bobrow and his team’s expertise in leading clinical trials allows us to translate this research into a therapy for patients who need it most.”

With help from the UTHealth COVID-19 research task force, the team organized the clinical trial in three short months—a feat that ordinarily takes longer than a year. The team will enroll up to 400 patients with COVID-19 who require supplemental oxygen in the randomized trial, with patients receiving either vadadustat or a placebo. In August 2020, the team enrolled the first patient.

“Every day in the Department of Emergency Medicine, we see patients who are critically ill with COVID-19—oftentimes they are only hanging on with help from a ventilator,” says Bobrow. “That motivates our team to work at warp speed to develop better treatments.”

The trial, initially funded by UTHealth Center for Clinical and Translational Sciences and Akebia Therapeutics, began at Memorial Hermann Health System and will be expanded to other sites across the United States if the team sees promising results. In September 2020, the team

received a \$5.1 million grant from the United States Department of Defense, recognizing the trial’s potential to help protect military personnel from ARDS.

“ARDS is proving to be one of the greatest challenges of the COVID-19 pandemic, but we have the people and ideas to overcome it,” says Bobrow. “This trial is a product of the incredible research and collaborations happening at UTHealth, and a prime example of why we are positioned to tackle a wide variety of health challenges.”



Holger Eltzschig, MD, PhD

John P. and Kathrine G. McGovern
Distinguished University Chair
Professor and Chair, Department
of Anesthesiology
Director, Center for Perioperative Medicine
McGovern Medical School at UTHealth

Biochemistry and Cell Biology Program
Immunology Program
MD Anderson UTHealth Graduate School



Bentley J. Bobrow, MD

John P. and Katherine G. McGovern
Distinguished Chair
Professor and Chair, Department
of Emergency Medicine
McGovern Medical School at UTHealth

The next generation of researchers

Although ARDS can be a serious consequence of the virus, Nathan Berg, a student in the MD/PhD program at McGovern Medical School at UTHealth and The University of Texas MD Anderson Cancer Center UTHealth Graduate School of Biomedical Sciences, remains hopeful that his research in acute lung disease will make a difference.

“At the onset of the pandemic, I knew our work in acute lung injury would have the opportunity to help find a solution to ARDS,” says Nathan.

“This is what we study every day, and now we have a chance to apply our research to help people with COVID-19.”

Under his mentors, Eltzschig and Xiaoyi Yuan, PhD, Nathan has dedicated his entire graduate education to studying acute lung injury, a result of ARDS.

“My main research interests include harnessing the protective properties of lung cells to defend against lung injury and finding ways to subdue the overactive immune system response to lung injury,” Nathan says. “Breakthroughs in these areas could lead to better therapies for people who suffer from deadly lung injuries, such as ARDS caused by COVID-19.”

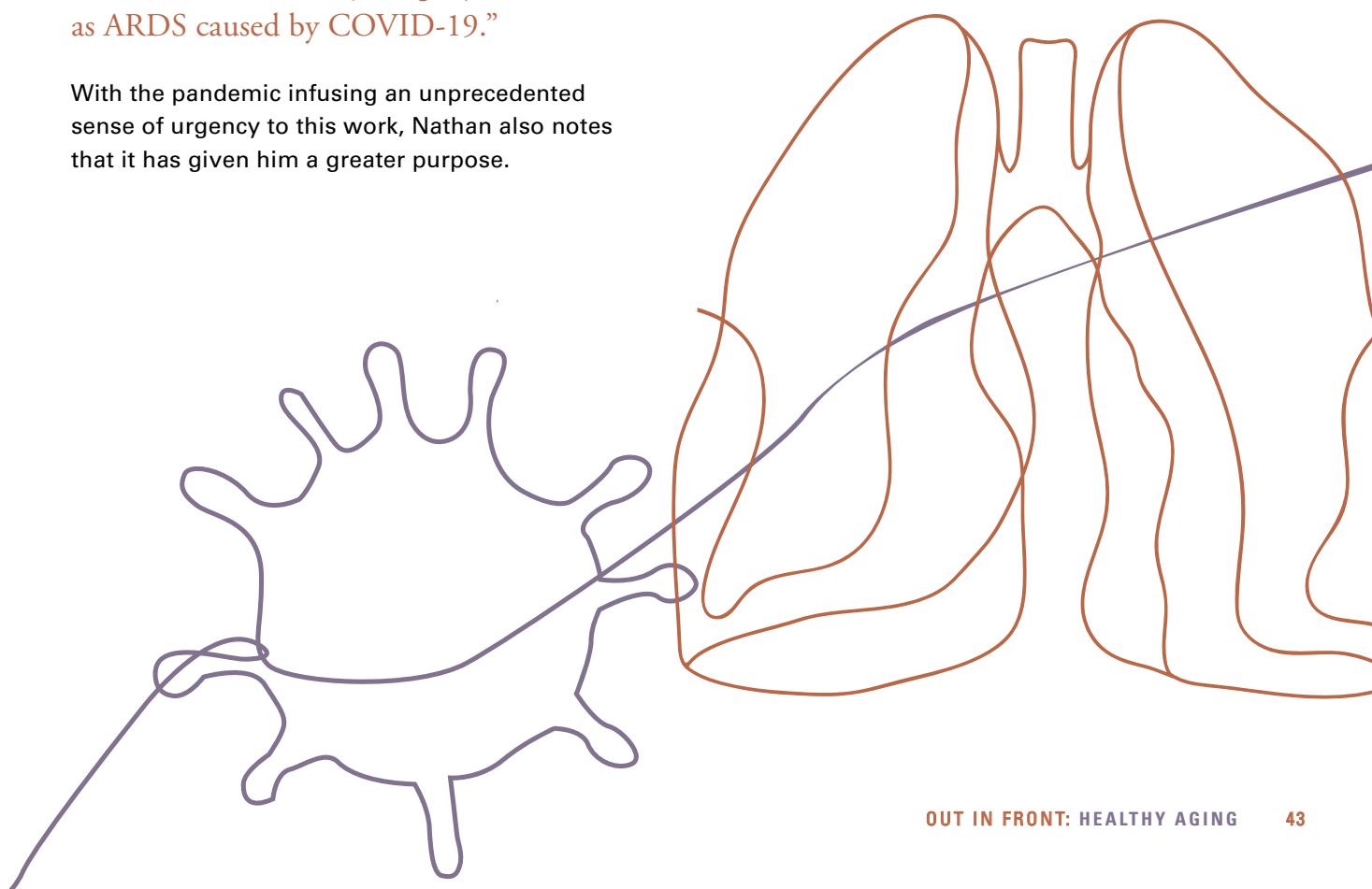
With the pandemic infusing an unprecedented sense of urgency to this work, Nathan also notes that it has given him a greater purpose.

“Being part of the MD/PhD program during the pandemic has shown me the importance of being able to translate research from the lab to the bedside to help patients who need it most,” he says. “Pathogens like COVID-19 are among the biggest threats to health. As I grow in my career as a physician-scientist, I want to continue searching for ways to help us overcome them.”



Xiaoyi Yuan, PhD

Assistant Professor, Department
of Anesthesiology
McGovern Medical School at UTHealth



A CATALYST AMID CHAOS

With the urgent need to understand the virus and develop evidence-based therapies, UTHealth created a task force on COVID-19 research. The task force, led by Charles C. (Trey) Miller, PhD, brings together experts from all six schools to ensure effective collaboration for COVID-19 research.

“While COVID-19 has upended life across the world, it has catalyzed our efforts to get things done quickly and efficiently,” says Miller. “The COVID-19 research task force allows us to rapidly streamline studies, mobilize resources, and coordinate teams across the institution.”

Following its first meeting in March 2020, the task force focused its efforts on four areas: creating a cohort study of COVID-19 patients who interact with UTHealth providers, coordinating informatics to link electronic health data with artificial intelligence tools, reviewing clinical trials, and establishing a biobank of COVID-19 samples.

Since March 2020, the task force received more than 200 study submissions, more than 80 of which were complex interventional studies. From these 80, the task force approved and helped facilitate more than 60 clinical trials and biospecimen studies. During normal times and under the best circumstances, it can take more than six months to launch a clinical trial. The COVID-19 research task force is helping research teams kickstart promising trials in less than one month.

“With the largest clinical practice in the city, a thriving research community, and our top-tier UTHealth School of Public Health, our university is well positioned to lead the response to the pandemic, in our community and beyond,” says Miller. “Our infrastructure will enable us to respond to the long-term impacts of this virus, even after the pandemic subsides.”

The Research Accelerator Fund—the university’s crowdfunding initiative to tackle the most pressing health needs—will continue to give UTHealth leadership flexible resources to support high-impact projects that address the pandemic and future health challenges.

To join the response to COVID-19 by supporting the Research Accelerator Fund, visit go.uth.edu/raf.



Charles C. (Trey) Miller, PhD

Professor, Department of Cardiothoracic
and Vascular Surgery
Director, Center for Clinical Research
and Evidence-Based Medicine
McGovern Medical School at UTHealth

Associate Vice President, Clinical
Research and Health Care Quality
UTHealth

A HIGH-STAKES BALANCING ACT

Contact tracing can help slow the spread of COVID-19 by identifying and following up with individuals who may have encountered an infected person, yet the number of positive cases must remain close to 200 cases a day in order for contact tracing to be effectively employed. Using technology can help bridge this gap. Mobile smart devices with GPS technology offer a promising platform to help trace the real-time location of users; however, privacy concerns prevent many people from embracing contact tracing applications.

Through balancing privacy protection and public health utility, two researchers at UTHealth School of Biomedical Informatics, Xiaoqian Jiang, PhD, and Amy Franklin, PhD, developed a contact tracing app to help reduce the spread of COVID-19.

“We believe that privacy is a fundamental human right, even during a pandemic,” says Jiang. “Our contact tracing app allows users to control how often the app collects information and how much information it collects, helping to preserve privacy while also reducing infection risks.”

The app, called Real-time Contact Tracing and Risk Monitoring (REACT), tracks user locations and symptoms. When a user encounters someone who has COVID-19, the app alerts the user. REACT also enables users to monitor their own risks based on the locations they visited and the aggregated risks of other users they have encountered. Additionally, it can detect early signs of community spread to help prepare for larger-scale infections.

“Unlike other apps that use GPS and Bluetooth to track users at all times, REACT only logs when a user contacts another user, and it employs privacy protection techniques to obscure the location of the contact,” explains Franklin.

REACT is a product of Jiang and Franklin’s collaboration with researchers from the University of Southern California and Emory University to harmonize strengths and compare different architectures and solutions to deliver the best performance and usability. Together, the team received a COVID-19 research grant from the National Science Foundation to develop the app.

“The University of Southern California team is skilled in mobile data anonymization, the Emory group is renowned for their work in de-identifying data, and we have expertise in designing models that preserve privacy,” says Jiang.

The team released REACT in December 2020. Visit www.cs.emory.edu/site/react to learn more or download REACT.

Xiaoqian Jiang, PhD

Christopher Sarofim Family
Professor in Biomedical
Informatics and Bioengineering
Professor and Director, Center
for Secure Artificial Intelligence
for Healthcare
UTHealth School of
Biomedical Informatics



Amy Franklin, PhD

Associate Professor
Associate Dean, Student,
Faculty, and Community Affairs
UTHealth School of
Biomedical Informatics



A large, light purple silhouette of a person riding a bicycle, positioned in the background. The cyclist is in a forward-leaning, aerodynamic posture, typical of road racing. The bicycle's frame, wheels, and pedals are clearly visible.

OVERCOMING THE **CYCLE OF PAIN**

UTHEALTH PHYSICIANS TAKE A COMPREHENSIVE APPROACH TO PAIN MANAGEMENT



Jim Huddleston always had an active life. An outdoors enthusiast, he enjoyed running and playing soccer and football for years. When a knee injury sidelined his morning jogs, he quickly took up cycling and fell in love with the sport. For Jim, riding his bike over 100 miles a week posed few challenges. But when back pain started getting in the way, Jim knew he had to seek help.

In the mid-1960s, Jim had just completed graduate school and was working as an engineer when he began experiencing pain in his lower back that radiated down his hips and into his legs. Diagnosed with sciatica, he managed the occasional discomfort for years through physical therapy and exercises to support his spine.

“Over time, the sciatica just kept getting worse no matter what I did,” Jim says. “My breaking point was when it took me off my bike.”

To find a long-term solution for his pain, Jim’s orthopedic surgeon referred him to John C. Quinn, MD, a neurosurgeon who provides care through UTHealth Neurosciences.

“Back pain can be a complex diagnosis,” says Quinn. “The examination revealed that although Jim has scoliosis, or abnormal curvature of the spine, it wasn’t the ultimate source of his discomfort.”

Instead, Jim’s pain originated in his sacroiliac joint, the junction between the hip bones and the lowest segment of the spine. Believing that Jim’s pain could be managed without surgery, Quinn referred him to a colleague, Ashley Amsbaugh, MD, a specialist in interventional pain management at UTHealth Neurosciences.

“We first tried managing the inflammation in his sacroiliac joint with steroid injections,” Amsbaugh says. “The injections allowed him to resume some normal activities like getting out of bed and walking with minimal discomfort, but they didn’t bring him long-term relief.”



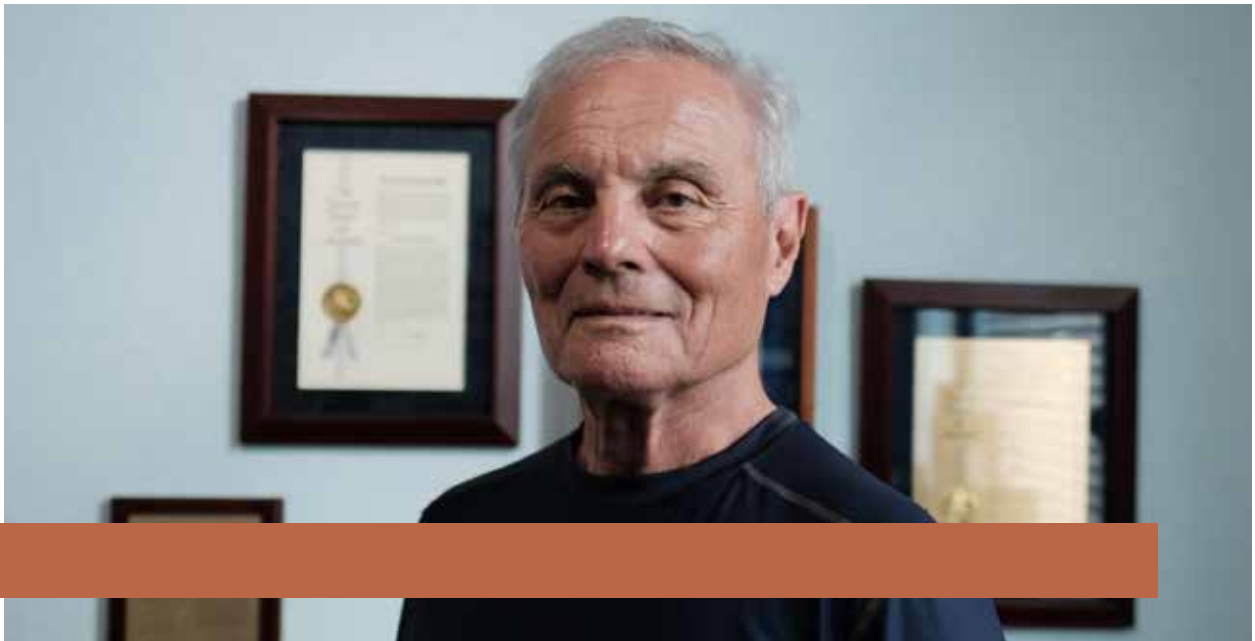
John C. Quinn, MD

Assistant Professor, Vivian L. Smith
Department of Neurosurgery
McGovern Medical School at UTHealth



Ashley Amsbaugh, MD

Assistant Professor, Vivian L. Smith
Department of Neurosurgery
McGovern Medical School at UTHealth



Hitting the spot

Jim needed a more permanent solution for his sciatica, but his doctors wanted to avoid a major surgery, which would require a longer recovery time. To help resolve his pain, Amsbaugh suggested using radiofrequency ablation, a nonsurgical therapy that delivers radio waves through a needle to destroy nerves that carry pain signals to the brain. By treating the area around Jim's sacroiliac joints with radiofrequency ablation, Amsbaugh was able to eliminate his sciatica pain.

"In most people, this treatment can take four to six weeks to receive the maximum benefit," Amsbaugh says. "But Jim's pain subsided almost immediately, and he was able to return to his active life right away."

Thanks to the radiofrequency ablation therapy, Jim lives pain-free for months at a time, requiring only annual follow-up treatments to ensure its continued efficacy.

"The radiofrequency ablation treatments are a beautiful thing for somebody like me who wants to continue riding my bike without surgery," Jim says. "I am thrilled with the results, and I am so thankful to Dr. Amsbaugh and Dr. Quinn for all their help."

Back on track

Without the burden of sciatica pain, Jim quickly ramped up his cycling routine, returning to familiar bike routes around Houston. About a year and a half after his initial radiofrequency ablation treatments, he began experiencing a very different kind of back pain.

"My neck started bothering me while I was riding my bike, and I had this consistent pain that spread from the top of my spine up around my ear," he says.

Because Jim was so pleased with his experiences getting treatment for sciatica, he immediately returned to see Amsbaugh and Quinn, who found a fracture in the cervical vertebrae of Jim's neck. To fix the fracture—and relieve his pain—Jim needed surgery.

"I've enjoyed working with these doctors, and they have become almost part of my family at this point," Jim says. "Even though neck surgery was a big step, I knew I would be in good hands."

Quinn performed the procedure, successfully repairing the fracture in Jim's neck. With time and healing, he believes that it will bring an end to Jim's neck pain.

During recovery, Jim says he been looking forward to one thing: "I can't wait to get back on my bike!"

PORTABLE PAIN MANAGEMENT

Knee pain from osteoarthritis can be more than just a nuisance. As tissues that cushion the joint wear away, the disease can create painful, tender knees that keep people from everyday activities like riding a bike or walking the dog. To help resolve knee pain without invasive surgeries or addictive opioid pain medications, Brian Ahn, PhD, is testing a novel approach that goes directly to the source of all bodily pain: the brain.

“We think of knee pain as a joint problem, but many patients experience serious pain while their x-rays show only mild osteoarthritis,” says Ahn. “So instead of treating the joint, we are targeting signals in the brain that result in the sensation of pain.”

Using transcranial direct current stimulation — a treatment that sends tiny, pain-free electrical charges to the brain — Ahn and his team believe they can disrupt pain processing. They have already begun testing this therapy in clinical settings, and they recently received a grant from the National Institute of Nursing Research to expand their study and develop technology to make the therapy available at home.



Brian Ahn, PhD

Isla Carroll Turner Chair in Gerontological Nursing
Associate Professor, Department of Research
Assistant Dean of Research
Cizik School of Nursing at UTHealth



“Patients need to use transcranial direct current stimulation several days in a row for it to be effective, so having home-based options for treatment will make it more accessible,” explains Ahn.

The take-home device is the size of a cell phone and easy for patients to use while guided by Ahn’s team over videoconference. To increase the potential efficacy of this treatment, Ahn and his team are also combining it with mindfulness meditation designed to help ease pain. With these two techniques, they hope to bring much-needed relief to patients suffering from knee osteoarthritis.

“Our population is getting older, so knee pain concerns will likely become a serious problem in the future,” says Ahn. “The generosity of donors is critical for the continued development, modification, and success of this kind of therapy that will make pain relief available to everyone.”

THE PULSE OF HEART HEALTH

PREVENTIVE CARDIOLOGY FORUM CELEBRATES MILESTONE ANNIVERSARY



Each February, medical communities across the nation celebrate American Heart Month to raise awareness for cardiovascular disease. At McGovern Medical School at UTHealth, the first Saturday of the month is always reserved for the Preventive Cardiology Forum, a special program that has been connecting practitioners, students, and the community to fight heart disease for 30 years.

“The Preventive Cardiology Forum began as a way to bring elements of cardiovascular disease prevention to the community to improve overall health,” says Francisco Fuentes, MD. “Over the last three decades, we have opened our doors to anyone who wants to learn about heart health.”

Cardiovascular disease is the leading cause of death in the United States, with large disparities in disease outcomes among the nation’s diverse populations. Through partnerships with the American Heart Association and institutions in the Texas Medical Center, the Preventive Cardiology Forum brings together top clinicians and scientists for intensive courses and roundtable discussions on cardiovascular disease prevention.

“Our primary goal is to educate the educators,” says Fuentes. “We want to ensure that physicians, nurses, and health professionals gain experience in every facet of cardiovascular medicine so that we can work toward a world without heart disease.”

Students from schools across UTHealth also play an important role at the Preventive Cardiology Forum. “We ask students to present posters and gain experience participating with this type of advanced scientific community,” says Fuentes. “They always bring excellent ideas and learn a lot from the forum.”



Francisco Fuentes, MD

Theodore R. and Maureen O’Driscoll Levy
Endowed Professor in Cardiology Research
Professor, Division of Cardiovascular Medicine
Department of Internal Medicine
McGovern Medical School at UTHealth



To provide practitioners with up-to-date scientific information about preventing cardiovascular disease, the forum focuses on a different topic each year. During the Preventive Cardiology Forum's first meeting in 1990, experts shared what is now a standard of care: giving patients aspirin to help prevent heart attacks.

"We've come a long way since then," says Fuentes. "Every year, it's something new—new ideas, new solutions to prevent cardiac sudden death. The forum topics are always changing."

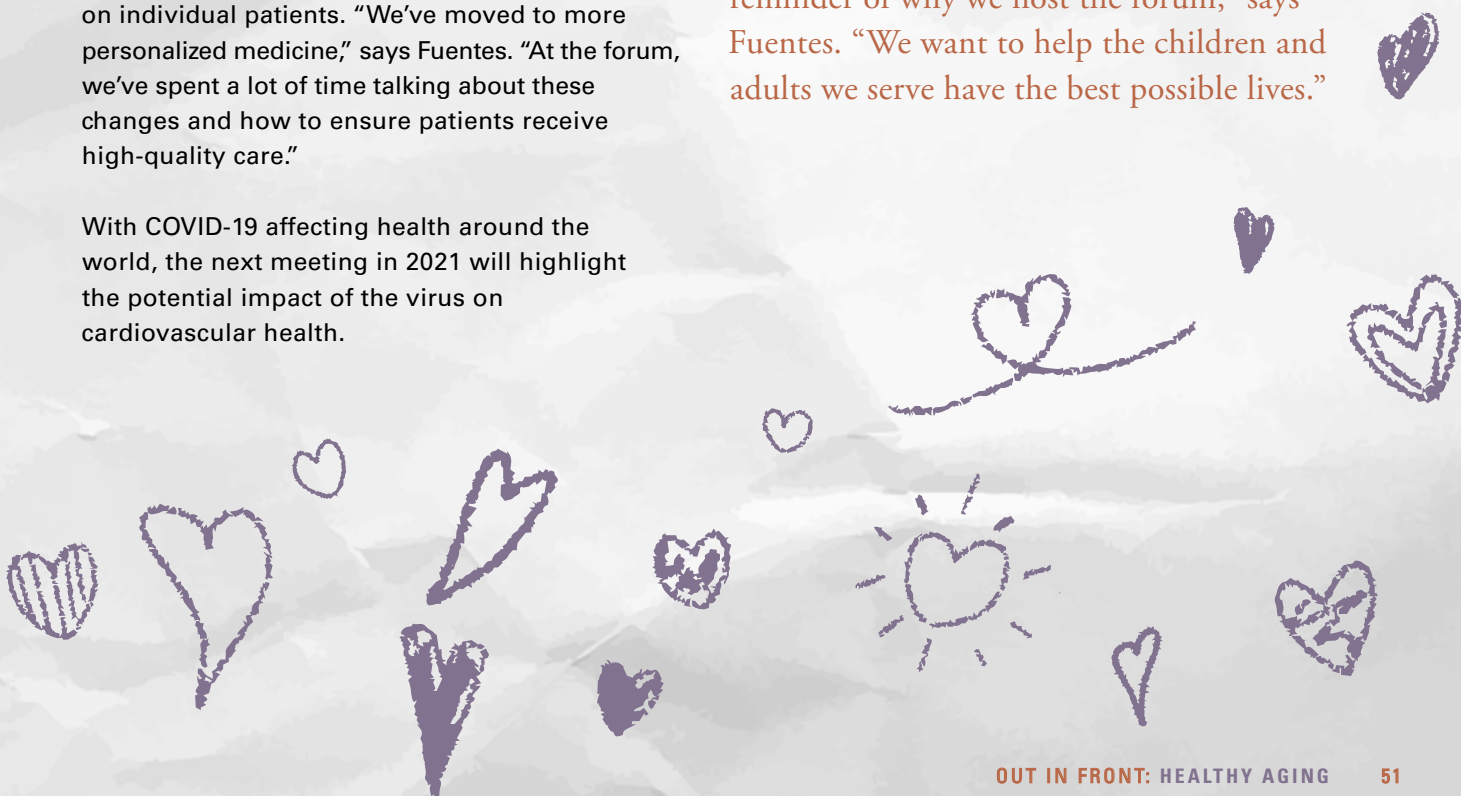
Over the years, forum discussions have tracked cardiology's shifting focus as the field has transitioned from emphasizing disease to focusing on individual patients. "We've moved to more personalized medicine," says Fuentes. "At the forum, we've spent a lot of time talking about these changes and how to ensure patients receive high-quality care."

With COVID-19 affecting health around the world, the next meeting in 2021 will highlight the potential impact of the virus on cardiovascular health.

As speakers descend on Houston each year to attend the forum, a network of philanthropic partners and volunteers helps ensure the program continues without a hitch. "The forum would not be possible without our donors or volunteers," says Fuentes. "They support everything we do."

The faculty and volunteers who donate their time to the Preventive Cardiology Forum receive a special gift to recognize their support. Each year, children with cardiovascular disease at Children's Memorial Hermann Hospital color pictures for the forum's volunteers.

"These drawings are the most wonderful reminder of why we host the forum," says Fuentes. "We want to help the children and adults we serve have the best possible lives."



DIVING DEEP

A NEW CENTER USES DATA TO IMPROVE ORAL HEALTH CARE



How might a cavity prevention program reduce oral health disparities in children? Is it possible to reduce how often dentists prescribe opioid pain relievers following certain procedures?

The Texas Center for Oral Healthcare Quality and Safety, a new program at UTHealth School of Dentistry, is tackling complex questions like these. Led by Muhammad F. Walji, PhD '06, the center partners with biomedical informaticians at UTHealth School of Biomedical Informatics to use big data analytics to seek answers in the BigMouth Dental Data Repository. This centralized database includes more than four million dental electronic health records from 11 dental schools across the nation, including UTHealth.

“Each year, dental practitioners in the United States provide care to more than 127 million patients, amounting to total costs of more than \$120 billion,” says Walji. “Despite our nation’s tremendous investment in oral health, we have an untapped opportunity to improve the quality of care and to reduce and prevent adverse events that result from standard dental intervention such as using sealant to prevent cavities in children.”

Another way the center is improving oral health is by developing dental learning health systems to continuously evaluate dental care and create better patient outcomes. Informatics tools help dental providers capture patient data, which researchers and computer programs analyze to improve care. The improvement process is ongoing, with patient care informing research, and research informing patient care.


For example, researchers in the center are partnering with University of California San Francisco School of Dentistry to create the Open Wide Learning Lab, which will help identify threats to dental patient safety, test strategies to prevent them, and implement and evaluate those strategies.

“With the Open Wide Learning Lab, we’re examining the big picture to reduce adverse dental events and make dental care safer for patients at both institutions,” explains Walji. “We’re identifying changes we can make in organization, policies, practices, and culture to improve care.”

But quality dental care goes beyond caring for the mouth; researchers at the center also study how dental care can make a greater impact on overall health by embracing the importance of treating the whole patient.

“We think dental providers could play a role in mitigating the opioid epidemic,” says Walji. “To study this, we are implementing a mobile health application that allows patients who had a recent dental procedure to self-report their pain to their care provider via text messages with the hope of reducing unnecessary opioid prescriptions.”

INTO DATA

A portrait of Muhammad F. Walji, PhD '06, a man with dark hair, glasses, and a goatee, wearing a blue blazer over a striped shirt. He is standing with his arms crossed against a dark background with vertical light streaks.

Muhammad F. Walji, PhD '06

Chair in Dental Informatics
Professor, Department of Diagnostic and Biomedical Sciences
Director, Texas Center for Oral Healthcare Quality and Safety
Associate Dean, Technology Services and Informatics
UTHealth School of Dentistry

Adjunct Professor
Associate Director, National Center for Cognitive Informatics and
Decision-making in Healthcare
UTHealth School of Biomedical Informatics

UT★Physicians

UT Physicians, a 501(c)(3) tax-exempt organization, is the clinical practice of McGovern Medical School at UTHealth. Our faculty offer urgent, highly specialized, or complex care to individuals and families in Houston and across Harris County and surrounding areas. Revenue from UT Physicians provides UTHealth with additional resources to support our faculty and further enhance the education of the health care professionals of tomorrow.



1.9M
PATIENT VISITS
TO CLINICS



2,000+
PROVIDERS
80+
SPECIALTIES AND
SUBSPECIALTIES



100+
LOCATIONS



UTHealth
Neurosciences

UT★Dentists

UT★Health Services



UTHealth Neurosciences is a comprehensive academic and research-based program with more than 150 health professionals—including nationally recognized leaders—who are committed to improving the quality of life for people with neurological disorders.



UT Dentists is the multidisciplinary faculty practice of UTHealth 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 is a nationally recognized nurse-managed primary care center through Cizik School of Nursing at UTHealth. Nurse practitioners provide patient care in collaboration with a McGovern Medical School 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 Harris County Psychiatric Center

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RESEARCH



PATIENT CARE

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