

MANY FACES. ONE MISSION.

Impact Stories of Philanthropy



Mind over matter

Determination sees medical student through brain surgery and disability

Turning the page

Innovative program helps children excel in the next chapter of life

A race against time

Flipping the hourglass on Alzheimer's disease



MANY FACES.
ONE MISSION.

The Campaign for UTHealth Houston

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

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

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

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

MANY FACES. ONE MISSION.

The Campaign for UTHealth Houston

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



TRAINING THE NEXT GENERATION OF

HEALTH PROFESSIONALS

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



IMPROVING

HOUSTON'S HEALTH

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



ADVANCING

BRAIN AND BEHAVIORAL HEALTH

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

THIS ISSUE

8

Mind over matter

Determination sees medical student through brain surgery and disability

14

Building bright futures

Educational programs guide students to success

24

Turning the page

Innovative program helps children excel in the next chapter of life

28

When the unexpected happens

Trauma experts provide lifesaving care and improve outcomes for patients

38

A race against time

Flipping the hourglass on Alzheimer's disease

42

Living in the moment

Reimagining mental health care for patients with dementia





TRAINING THE NEXT GENERATION OF HEALTH PROFESSIONALS

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

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

*Scan the QR code with
your mobile device.*



MIND OVER MATTER

Determination sees medical student through brain surgery and disability

BUILDING BRIGHT FUTURES

Educational programs guide students to success



MIND OVER MATTER

DETERMINATION SEES MEDICAL STUDENT THROUGH BRAIN SURGERY AND DISABILITY

Claudia I. Martinez, MD, insisted she needed to finish school before surgery, but her neurosurgeon had a way with words.

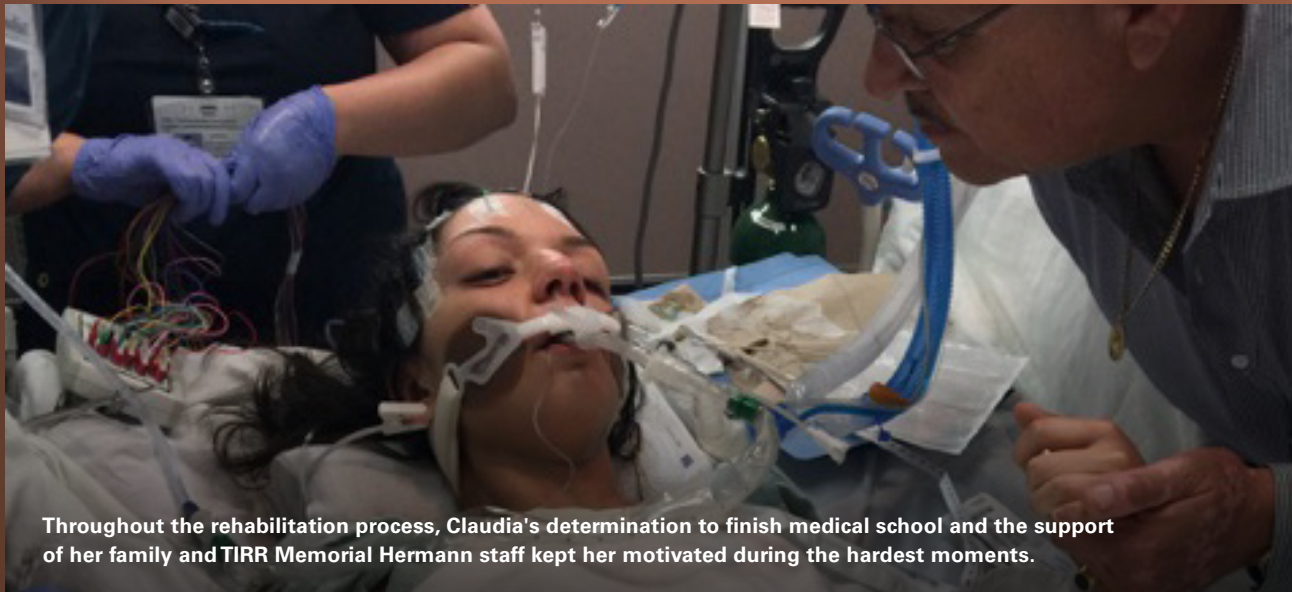
“He said, ‘If you don’t do this, you’ll end up paralyzed from the neck down,’” Claudia recalls.

A high-performing student at the University of Houston, Claudia had devoted herself to becoming the first in her family to graduate from college and achieving her lifelong goal of becoming a physician. Yet the onset of strange ailments—including weakness in her limbs, headaches, vomiting, and coordination difficulties—led to a diagnosis of Chiari malformation, a condition in which the brain protrudes through the bottom of the skull, putting pressure on the spinal cord.

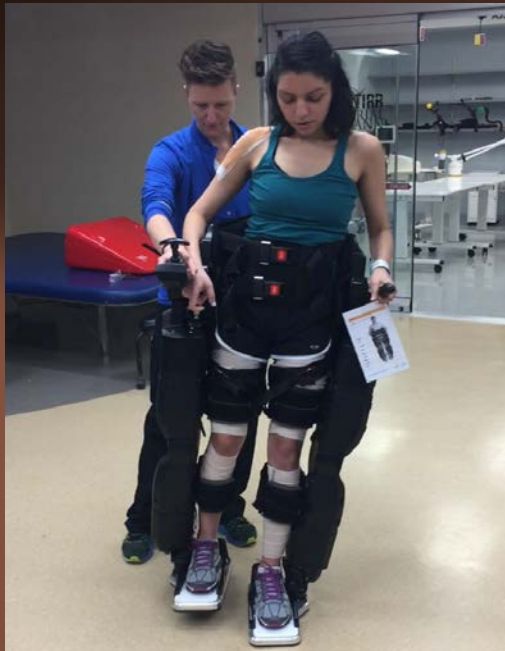
As she pursued her studies with singular determination, trouble took root in her brain once again. The outer lining of her brain tethered itself to her brain stem, pulling on vital cranial nerves. By her second year in medical school, her vision, digestion, ability to swallow, and limb function had all deteriorated. If left untreated, the condition would potentially leave her dependent on a breathing tube or with paralysis in the upper and lower body.

“The first day of my senior year, I was in the operating room getting brain surgery,” she says. A series of operations seemed to correct the issue. Claudia graduated from the University of Houston in 2013 and started at McGovern Medical School at UTHealth Houston the next year.

After undergoing brain surgery while pursuing a medical degree, Claudia I. Martinez, MD, has become a voice for patients and physicians with disabilities.



Throughout the rehabilitation process, Claudia's determination to finish medical school and the support of her family and TIRR Memorial Hermann staff kept her motivated during the hardest moments.



Her only hope lay in a highly delicate surgery, for which she turned to David I. Sandberg, MD, at UTHealth Houston Neurosciences, whom she had previously worked with on a research initiative as part of her medical school education.

“I knew the risks it entailed, and I decided it was worth it rather than just accepting the alternative,” Claudia says.

On February 6, 2017, Sandberg successfully untethered the outer lining of her brain from its stem, returning her cranial nerves to normal. As part of her recovery from this challenging condition, she had to overcome neurological deficits, such as motor difficulties.

Claudia thought of her father, who had no formal schooling but worked all his life so she could have this opportunity. She thought about those who would follow her—students with disabilities who would see her example. She thought of her own determination to not only be the first to graduate college in her family, but to become a doctor.

“I had never allowed my health to keep me from continuing my journey, and I wasn't going to let it start now,” she says.

Claudia transferred to TIRR Memorial Hermann, a teaching hospital of McGovern Medical School. She began a grueling year-and-a-half process of relearning tasks like walking, eating, dressing, and showering.

“Even though it was tough, everyone who worked at TIRR was wonderful,” she says. “They saw every little sign of progress, whether being able to move my hand or shift my legs in bed, as something we could build on to reach that goal.”

In the meantime, Claudia still had medical school to finish. Her mother spent every moment by her side—turning pages in textbooks, transcribing notes and essays as Claudia spoke, and playing recorded lectures from Claudia's professors.

Eventually, Claudia regained enough function to be discharged from TIRR Memorial Hermann and return to campus at McGovern Medical School. She could walk well enough to begin her clinical rounds, but since some of her body's functions had yet to heal, she carried a backpack that delivered nutrition and fluids through a feeding tube and chest port.

In May 2020, only two years behind schedule, Claudia graduated with her medical degree.

“I felt such an immense sense of relief and gratitude for everyone involved in my care, especially my mom,” she says. “I even told my mom, ‘We graduated. We did it.’”





KARINA SAMSUHADI

Karina Samsuhadi, a first-year medical student, is the inaugural recipient of the Claudia I. Martinez Strength Scholarship. Her parents immigrated to the United States in hopes of a better future for their children, but illness derailed their plans, forcing Karina to become the sole provider for the family.

“This scholarship not only provides the financial security to keep both me and my family safe, but it also turns my dream of becoming a physician into a reality,” she says. “I am profoundly grateful for everyone who made this award possible, and I look forward to helping others achieve their goals someday.”

Her classmates decided to honor her achievement by launching a crowdfunding campaign in 2020 to establish the Claudia I. Martinez Strength Scholarship Endowment. In concert with the *Many Faces. One Mission.* campaign and its focus on training the next generation of health professionals, the fund will support a student at McGovern Medical School who has shown resilience in the face of adversity.

“I appreciate everyone who gave because this scholarship helps other aspiring physicians who are facing adversity to reach their goals,” she says.

Since graduation, Claudia has almost completely recovered. The feeding tube and chest port are gone, and only a little trouble with her right hand still lingers. But in many ways, she will never be the same. Now in her third year of a residency in physical medicine and rehabilitation at McGovern Medical School—performing clinical rotations at TIRR Memorial Hermann—her ordeal has brought a special kinship with her patients.

“I am living proof that, with the correct tools, physicians with disabilities can do just as well as anyone else. We have great value in our own experiences to contribute to the medical field,” she says. “We belong here.”

207 donors helped raise more than **\$25,000** to establish the Claudia I. Martinez Strength Scholarship to support a student facing adversity.

“For a number of students who have what it takes to be a physician, life circumstances can get in the way. Scholarships help them overcome these obstacles and enrich the medical profession with their hard-won perspective.”

David I. Sandberg, MD

Dr. Mamie Rose Professor in Pediatric Neurosurgery

Professor, Department of Pediatric Surgery

McGovern Medical School at UTHealth Houston



BUILDING BRIGHT FUTURES

EDUCATIONAL PROGRAMS
GUIDE STUDENTS TO SUCCESS

A few extra skills or a little guidance can make all the difference for the students who will become tomorrow's experts in improving the health of our families and friends. In response to the needs of its student body, UTHealth Houston creates innovative educational programs that steer students on a path to career success. Among these are the Ambassador program at Cizik School of Nursing at UTHealth Houston and The Academy at MD Anderson Cancer Center UTHealth Houston Graduate School of Biomedical Sciences.

LIGHTING THE WAY FOR NURSING LEADERS

In the next 10 years, more than 25% of nurses are expected to retire, while an aging population will need increased health services, requiring even more nurses.

With its Ambassador program, Cizik School of Nursing is helping to address the growing nursing shortage. The program trains confident, empowered nurse leaders to care for our communities and educate future nurses. Undergraduate students with a high grade point average can apply, and as of the summer of 2022, 116 students have benefitted from this opportunity.

Led by Linda M. Brown, PhD, the Ambassador program at Cizik School of Nursing trains students like Isabelle "Gracie" Ruiz, BSN '22, to become confident nursing leaders.



The program offers structured, hands-on activities to develop communication, leadership, and teamwork skills. Students learn integral topics ranging from managing instability in the workplace to interprofessional collaboration.

“It has made me a better nurse, a better advocate for my patients, and a better person,” says Isabelle “Gracie” Ruiz, BSN ’22.

A highlight of the program for Gracie was the Power of Nursing course, which examines perspectives and values in nursing.

“You learn how nurses can empower people, but to do that, first you have to learn how to empower yourself. There was a lot of reflection, and it was very eye-opening,” Gracie says. “I now have a more holistic view of care. It’s not just about giving the patient their medicine and changing their IV bag. The mind and emotions also need to be healed when someone is sick.”

Mentoring and networking opportunities enable students to find key professional support. “Everyone was so incredibly compassionate. I can contact any of them with questions or for help,” Gracie adds.

In 2016, commitments from Deborah “Debbie” Garrett Adams, BSN ’84; Emily Marye, MSN ’13; and Jordan Marye established the Ambassador program, which was bolstered by the UTHealth Houston community in 2021 and 2022 on Giving Day—a 24-hour period where community members come together to advance university initiatives.

Thanks to an additional commitment from Debbie, the program began expanding. In the fall of 2022, the Ambassador program began transitioning into the Deborah Garrett Adams Leadership Academy, which will include graduate students.

“With this larger program, we will help even more students develop needed leadership skills so that they can be an important voice for their patients and teach others to do the same,” says Linda M. Brown, PhD. “The Ambassador program, and now the Leadership Academy, would not exist without philanthropic support.”



Linda M. Brown, PhD

Assistant Professor, Department of Undergraduate Studies

Director, Academic Success Center

Cizik School of Nursing at UTHealth Houston



With hands-on learning opportunities, nursing students hone the communication and presentation skills that prepare them to become leaders of health care teams.



With support from The Academy at MD Anderson UTHealth Houston Graduate School, students from underrepresented communities receive mentorship and assistance that places them on the path to success.



Cherilynn R. Shadding, PhD

Associate Dean
Diversity, Career Development, and
Alumni Affairs

MD Anderson UTHealth Houston
Graduate School

ENSURING EDUCATIONAL SUCCESS

For people from underserved backgrounds, the road to becoming a health expert is often laden with barriers. Many students must leap hurdle after hurdle to further their education and achieve their dreams—a feat particularly more difficult as an underrepresented minority in advanced education.

If these students are Black or Hispanic and in the biomedical sciences, there is nearly a 50% chance that they will not finish graduate school.

“The science environment can be unwelcoming for these students. Many underrepresented students feel isolated and like they don’t belong. They have a hard time identifying themselves as scientists because they have little in common culturally with the scientists they see,” says Cherilynn R. Shadding, PhD.

“A lot of people from underserved communities like mine do not have the opportunity to pursue the next level of education or the next level after that,” says Broderick Turner, a PhD student in the Immunology Program at MD Anderson UTHealth Houston Graduate School. “By graduate school, there aren’t a lot of people who look like me.”

Determined to address this challenge, MD Anderson UTHealth Houston Graduate School established The Academy to provide historically underrepresented students with high-level guidance and support.

“I don’t want any student of color who wants to become a scientist to do something else because they felt like they didn’t belong in graduate school,” Shadding says. “We want to help them develop the resilience and science identity they need to navigate these waters. Part of this effort is creating community support.”

“Meeting with other students and faculty who understand the challenges I have faced makes me feel less anxious and less like a fish out of water,” Broderick explains.

The program starts with three days of activities before the school year begins to give students a preview of graduate student life and expectations and to discuss important research articles. Each month, speakers address academic advancement topics, such as how to present professional papers or secure research funding.

The Academy launched in the fall of 2021 with 16 students. In addition to the educational activities, the program provides five of its students with \$5,000 scholarships to support their education.

“The scholarship takes away some of my financial worries and gives me a layer of security,” Broderick says. “It lets me devote more of my brain power to my courses.”

Program support has come in large part from philanthropic gifts to the Dean’s Impact Fund at MD Anderson UTHealth Houston Graduate School, which helps meet urgent needs in the school as they arise. In line with the *Many Faces. One Mission.* campaign’s emphasis on training the next generation of health professionals, The Academy was a featured program during Giving Day in spring 2022.

Additional philanthropic commitments will expand the number of scholarships and help even more underrepresented students flourish in the biomedical sciences, enriching future health science teams.

“The more we include students from all backgrounds in science, the better it is for everyone. The data show that diverse teams solve problems that non-diverse teams cannot,” says Shadding. “Including more voices will help us overcome some of our biggest health challenges.”



IMPROVING HOUSTON'S HEALTH

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

For 50 years, UTHealth Houston has stood at the forefront of safeguarding health in Houston and beyond. From ensuring children have the tools to reach their full potential to providing exceptional care that heals patients after an unexpected trauma, we are improving health for people throughout Houston and beyond.

*Scan the QR code with
your mobile device.*



TURNING THE PAGE

Innovative program helps children excel in the next chapter of life

WHEN THE UNEXPECTED HAPPENS

Trauma experts provide lifesaving care and improve outcomes for patients



TURNING THE PAGE

INNOVATIVE PROGRAM HELPS CHILDREN EXCEL
IN THE NEXT CHAPTER OF LIFE

The conversation in the car ride home is a familiar one for Kimberly and Randall Velasquez. Their three-year-old son, Blake, received a book at his annual checkup, and while he can already recite his colors and numbers with pride, he doesn't yet know how to read by himself. He turns to his older sisters—McKenzie, Adriana, and Serenity—for help.

"I always tell my younger kids that we have to wait until we get home to read," Kimberly says. "But they are so excited about the books that they beg their older siblings to read aloud in the car."

The books that the Velasquez family receive are part of Reach Out and Read, an innovative program that sets children up for success by encouraging reading during routine pediatric wellness visits. The Reach Out and Read Texas affiliate, part of the Children's Learning Institute at McGovern Medical School at UTHealth Houston, serves 200,000 children annually through 200 programs across the state.

"Books have enormous power to encourage early brain development and help families build strong connections," says Jocelyn McConnell, MEd, who leads Reach Out and Read Texas. "It's all about the cuddle time and the interactions that happen when families read together."

Continuing a long family tradition, Randall Velasquez is passing a love of reading on to his son, Blake, thanks in part to books from Reach Out and Read.



With Kimberly and Randall's enthusiastic support, sisters McKenzie, Adriana, and Serenity are quickly becoming reading experts—and showing little brother Blake the ropes.



Sevahn A. Carril, MD

Pediatrics
UT Physicians

As part of the Children's Learning Institute, Reach Out and Read Texas helps advance a central mission to improve learning and health outcomes for all children. The institute's programming and evidence-based interventions build on decades of scientific research to ensure that children of all ages and abilities are equipped to learn and excel.

"The kids love the books they get at the doctor's office," Randall says. "They get fun pop-up books that teach them about emotions and other important topics, and they don't even realize they are learning."

Reach Out and Read Texas works with local clinics and pediatricians across the state to provide books to children up to five years old. The program offers age-appropriate books in 17 languages to ensure that children from all backgrounds can engage in reading.

"Many people in Texas grow up speaking Spanish, so we provide books in the language that families know best," McConnell says. "Growing brains learn the most when they are exposed to full, rich vocabularies."

Parents who receive books from Reach Out and Read are 2.5 times more likely to read aloud to their children, and the children typically gain three to six months of vocabulary compared to their peers. The books are also important for pediatric providers who can use them to help evaluate developmental milestones and connect with parents about their child's growth. Sevahn A. Carril, MD, the Velasquez family's pediatrician, incorporates the books in her appointments at UT Physicians Multispecialty Clinic in Rosenberg.

"Dr. Carril is the best. Anytime I call her, she is there for us when we need her," Kimberly says. "It's a real lifesaver with the kids."

For the Velasquez family, reading is just one of many activities they do together. With three kids already in school, the family spends summers on the Texas Gulf Coast and looks forward to quieter moments in the evenings spent with books.

"Reading is definitely a family tradition," Randall says. "My grandmother read to me when I was young, and now I get to pass that on. My older kids have reading assignments that we do for school, and we practice sight words every night."

"Even though Blake is still little, he loves when we read to him," Kimberly says. "He wants to be involved in everything, and he gets so excited that he sometimes tears the pages when he tries to help turn them."

Many other families across the state lack the resources to provide books for their children. Over 50% of the families who receive books through Reach Out and Read Texas live below the poverty line. Philanthropic commitments throughout the *Many Faces. One Mission.* campaign from donors like CenterPoint Energy; Gulf Coast Medical Foundation; The Clayton Fund, Inc.; and The PNC Foundation—as well as the community members who supported a crowdfunding campaign and Giving Day—help ensure that books are available in doctor's offices across the state.

"Giving a child a book seems like such a simple thing, but it can make such a lasting impact on entire families," says McConnell. "Philanthropy plays a vital role in our efforts by providing books and ensuring we have the staff and resources to reach even more communities in Texas."



Jocelyn McConnell, MEd

Affiliate Director,
Reach Out and Read Texas
Assistant Director,
Texas School Initiatives
Children's Learning Institute
McGovern Medical School at
UTHealth Houston



WHEN THE UNEXPECTED HAPPENS

TRAUMA EXPERTS PROVIDE LIFESAVING CARE
AND IMPROVE OUTCOMES FOR PATIENTS

Much of life can be scheduled: Annual doctor and dental checkups, dinner with friends or family, work meetings. But trauma—a leading cause of death and disability—comes without warning. While it happens at every age, it's the number one cause of death between the ages of one and 45, marking it as a disease of the young and a major health burden.

For avid cyclist John Mafrige, his introduction to trauma happened in March 2014. John was on his way to meet some friends in downtown Houston—only a few miles from his house—to ride in the Tour de Houston. Riding down a familiar section of the road that crosses paths with the MetroRail, his front tire became wedged into the track, sending him careening over the front of his bicycle and shattering his femur when he landed.

When the ambulance arrived, the paramedics told him that he needed to go to the Red Duke Trauma Institute at Memorial Hermann-Texas Medical Center instead of any other hospital.

"I asked why and they said, 'This is bad. You need to go there. Just trust us,'" John remembers.



Thanks to the surgical expertise of Munz (right), John Mafrige (left) was able to return to his way of life after shattering his femur in a bicycle accident in 2014.

As John sat in the waiting room with his wife, Carol, staff encouraged them to wait for orthopedic trauma surgeon John Munz, MD. “Their exact words were, ‘Dr. John Munz needs to do this. It’s going to be worth the wait,’” he says.

Munz and other world-renowned orthopedic surgery and trauma faculty at McGovern Medical School at UTHealth Houston serve the Greater Houston area around the clock. Together with the trainees that follow in their footsteps, they staff clinics across the city and the Red Duke Trauma Institute, one of the nation’s busiest Level 1 trauma centers.

“Trauma is an equal-opportunity event, and you don’t plan for it,” says Munz. “The opportunity to get patients back to their prior level of comfort, back to their families, hobbies, and employment, is truly amazing.”

After hours of surgery, Munz placed a rod, secured by screws, through John’s femur.

“The big key is his expertise in being able to take chips of bones and put them back together again. I’m a living testament to that,” he says. “He made sure that I was fully healed, and I’m very grateful.”

After months of follow-up appointments and physical therapy, John returned to riding his bicycle, going many years without incident. It was March 2021 when trauma struck again.

“I was riding with a few friends, and the last thing I remember is coming around the corner of Hermann Park by the golf course,” he says.

John awoke to his wife snapping a photo of him lying in the hospital with no memory of what happened. The accident left him with a severe concussion, broken hand and collarbone, and shattered elbow. Experts believed that he hit a rough patch on the ground before flying off of his bicycle, which caused complex injuries that could have required multiple surgeries.

“My wife was there with me in the hospital, and the first thing we asked was, ‘Where is Dr. Munz?’” says John.

Munz was able to fix everything during one surgery, helping John on the road to recovery sooner. Munz also connected John to Summer Ott, PsyD, for further evaluation of his concussion.

“I was in the care of someone who wasn’t just interested in getting me past an emergency spot and out of danger. He wanted to get me back to where I was. That is such a huge thing that I can’t even begin to explain,” says John. “Whether it was the femur or the elbow and collarbone, the concussion—I always had such a sense of comfort knowing that Dr. Munz was there, and that comfort helps you heal.”



John Munz, MD

Rochelle and Max Levitt Chair in Orthopedic Surgery

Walter R. Lowe, MD, Professor

Associate Professor, Department of Orthopedic Surgery

McGovern Medical School at UTHealth Houston



Summer Ott, PsyD

Associate Professor, Department of Orthopedic Surgery

McGovern Medical School at UTHealth Houston

IMPROVING OUTCOMES FOR ALL

Trauma, considered a team sport because of the multiple specialties involved, including neurosurgery, orthopedics, pediatrics, and geriatrics, covers the full continuum of care from acute injury, to surgery, to rehabilitation. The volume of patients at the Red Duke Trauma Center has allowed UTHealth Houston researchers to examine patient outcomes and create best practices for care.

“It’s important to identify the problem first, so we spend a lot of time conducting epidemiology studies around patient outcomes,” says Charles E. Wade, PhD, who works alongside clinicians like Munz as the Director of the Center for Translational Injury Research at McGovern Medical School. “Since I’ve been here, our mortality rate dropped from 7% to 4%, and patients get out of the ICU sooner. These are some of the metrics we look at.”



Charles E. Wade, PhD

James H. Red Duke, Jr., MD,
Distinguished Professor in Surgery

Professor, Department of Surgery

McGovern Medical School at
UTHealth Houston

Support to the *Many Faces. One Mission.* campaign from the Howell Family Fund, Clare Glassell, and community donors helps the team conduct research, such as using stem cells to heal traumatic brain injuries, treating and preventing blood clots postoperatively, and collaborating with Cizik School of Nursing at UTHealth Houston to investigate the epidemiology of trauma deaths in Harris County.

Munz—who holds the Rochelle and Max Levit Chair in Orthopedic Surgery and the Walter R. Lowe, MD, Professorship—and Wade—who holds the James H. Red Duke, Jr., MD, Distinguished Professorship in Surgery—are able to direct funds from these faculty endowments to support junior faculty development and research, as well as to enhance educational opportunities for students and trainees.

Unlike McGovern Medical School, many medical students across the nation don’t have exposure to the volume of trauma patients or the facilities or specialists to treat them.

“We do a lot of education with medical students, residents, fellows, visiting students, and international surgeons. We are a very big teaching center, as big as they come,” explains Munz. “And our trauma fellowship is the most competitive fellowship out there.”

“Philanthropic support helped fund a new fellowship in burns, and last year, we put together a scholarly emphasis in trauma,” adds Wade. “The idea is to help students who are interested in the field find a specialty that interests them but focuses on trauma. Philanthropy also allows us to support student participation in national meetings to share their work with the goal of building the next generation of trauma experts.”



When John broke his elbow and shattered his collarbone just a few years later, he turned to Munz’s surgical expertise and calming spirit once more to help him heal.



ADVANCING BRAIN AND BEHAVIORAL HEALTH

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

As the brain is the most delicate organ in the body, addressing complex brain disorders—like Alzheimer’s disease—requires a comprehensive approach that considers both the neurological and behavioral impacts of the disease. Our experts collaborate to push the frontiers of brain and behavioral health to explore how the brain works and deliver new treatment options for patients everywhere.

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your mobile device.*



A RACE AGAINST TIME

Flipping the hourglass on Alzheimer’s disease

LIVING IN THE MOMENT

Reimagining mental health care for patients with dementia



A RACE AGAINST TIME

FLIPPING THE HOURGLASS ON
ALZHEIMER'S DISEASE

The warmth of a parent's smile, the glow of a significant other on their wedding day, the fiery sunset over the sea during a blissful vacation: Treasured memories that we carefully clutch like grains of sand to keep forever. As we age, the grains pile in our palms, but only a few trickle out between our fingers. For people living with Alzheimer's disease, this trickle eventually turns into a cascade, where memories flow freely through their grasp no matter how desperately they grip.

Alzheimer's disease, the most common type of dementia, typically takes root decades before the first symptoms appear. Like other neurodegenerative conditions, it is an irreversible, progressive brain disorder that slowly destroys neurons.

Schulz, who leads the Neurocognitive Disorders Center at McGovern Medical School at UTHealth Houston, recalls a patient in his 60s who was brought in for cognitive evaluation by his wife.

"People with dementia may not even recognize they have a problem," says Paul E. Schulz, MD, a neurologist with UTHealth Houston Neurosciences. "By the time symptoms like memory loss appear, the brain may have already suffered critical damage."

Paul E. Schulz, MD, and his team at the Neurocognitive Disorders Center are developing new ways to detect and treat Alzheimer's disease long before debilitating symptoms appear.



Philanthropy ensures researchers and clinicians like Claudio Soto, PhD, and Schulz can translate groundbreaking discoveries on Alzheimer's disease into real solutions for patients and their families.

During the assessment, the man crossed his arms and furrowed his brow, insisting nothing was wrong. Meanwhile, his wife described how his uncharacteristic outbursts and rude comments had transformed him from husband to stranger.

“Through testing, we found that this patient’s gradual, yet significant, shifts in mood and behavior were the result of dementia. For other patients, dementia can also prompt changes in cognition like memory loss and increased difficulty with daily activities,” explains Schulz.

Making the right diagnosis early on can ensure that patients receive prompt treatments that could improve quality of life or slow the progression of disease. At the Neurocognitive Disorders Center, Schulz and his team use advanced diagnostic tools including brain MRIs, blood tests, and PET scans to identify abnormal protein buildups in the brain that may signify different types of dementia.

“Time is the most precious gift that earlier diagnoses and better treatments can provide,” says Schulz. “Above all, we hope to offer families more time to create and cherish memories together.”

Through the *Many Faces. One Mission.* campaign, the gift of philanthropy has empowered Schulz and his team to test therapies, such as reducing the buildup of abnormal proteins in the brain, offering families more time together.

Since the launch of the campaign, more than 70 donors—including Shelaghmichael Brown and Joan and Stanford Alexander—have helped advance Schulz’s immediate scientific needs, like purchasing equipment and supporting research personnel and clinical trials. Additionally, the Rick McCord Professorship in Neurology and the Umphrey Family Professorship in Neurodegenerative Diseases provide dependable resources that allow Schulz to sustain ongoing studies and launch new projects.

Philanthropy also fuels discovery science, which helps elucidate the underpinnings of how the brain operates. Claudio Soto, PhD, and his team at The George P. and Cynthia W. Mitchell Center for Research in Alzheimer’s Disease and Related Brain Disorders at McGovern Medical School are changing the way we understand the brain by studying brain models in the laboratory.

“We can generate stem cells and program them to become brain cells,” says Soto. “Using this method, we grow living brain-like organelles in preclinical models that we can use to see how Alzheimer’s disease progresses.”

While most clinical trials for Alzheimer’s disease focus on removing harmful proteins in the brain, stem cells may also provide a way to regenerate neurons and restore function to patients.

“Because parts of the brain are already damaged by the time people with Alzheimer’s disease experience symptoms, there is a tremendous need for regenerative therapies,” Soto explains. “We are studying whether we can restore lost brain cells by replacing them with the brain tissues we generate from stem cells.”

Philanthropic support to the *Many Faces. One Mission.* campaign has served as a catalyst for this discovery science research. Donors to the Mitchell Center have provided seed funding to pursue breakthroughs like stem cell therapies, which could revolutionize the way we understand and treat neurodegenerative diseases. Additionally, the Huffington Foundation made a significant commitment to establish the Huffington Foundation Distinguished Chair in Neurology, which has enabled Soto and his team to launch high-impact research projects that advance brain health.

“Different neurodegenerative diseases often present similar problems in the brain,” says Soto. “Philanthropy ensures we have the resources to find the links between these disorders and translate our discoveries into lifesaving solutions. It’s only a matter of time before we’re able to eradicate these devastating diseases.”



Paul E. Schulz, MD

Rick McCord Professor in Neurology

Umphrey Family Professor in Neurodegenerative Diseases

Professor, Department of Neurology

Director, Neurocognitive Disorders Center

McGovern Medical School at UTHealth Houston

Associate Member, Neuroscience

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Claudio Soto, PhD

Huffington Foundation Distinguished Chair in Neurology

Professor, Department of Neurology

Director, The George P. and Cynthia W. Mitchell Center for Research in Alzheimer’s Disease and Related Brain Disorders

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Member, Biochemistry and Cell Biology

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LIVING IN THE MOMENT

REIMAGINING MENTAL HEALTH CARE FOR PATIENTS WITH DEMENTIA

When memories of the past begin to fade, patients with Alzheimer's disease and other types of dementia often experience life changes that can bring heavy emotional tolls. From the shock of receiving a diagnosis to the anticipation of further memory loss, patients and caregivers alike encounter challenges that have a lasting impact.

Antonio L. Teixeira, Jr., MD, PhD

Professor, Faillace Department
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McGovern Medical School at
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Associate Member, Neuroscience

MD Anderson UTHealth Houston
Graduate School

In addition to providing mental health care for patients with dementia, Antonio L. Teixeira, MD, PhD, hopes to provide lasting relief through novel treatments like transcranial direct current stimulation.

"Although many people think of dementia as mainly a cognitive condition that affects memory and decision-making, the most difficult problems for patients and their families often relate to their behavior and mental health," says Antonio L. Teixeira, MD, PhD.

Nearly 40% of people with Alzheimer's disease suffer from anxiety or depression, and most experience behavioral shifts—like paranoia, agitation, and apathy—that can disrupt their daily lives.

While neurologists focus on addressing the cognitive impairments associated with Alzheimer's disease, psychiatrists like Teixeira and his team strive to address behavioral changes and improve the mental health of both patients and their caregivers.

"Many of my patients with dementia no longer understand how their actions affect the people around them," Teixeira says. "We see that behavioral health problems can have a greater impact on families than cognitive decline alone."



Most mental health conditions fluctuate in severity for people with Alzheimer's disease over days, months, and even years. In particular, the late afternoon can be a difficult time for patients due to sundowning.

“Sundowning can be especially difficult for caregivers. It's a time when most people are getting ready for bed, yet people with Alzheimer's disease can experience heightened restlessness and agitation, which makes it difficult to sleep,” Teixeira says.

In addition to providing behavioral care to reduce the impact of sundowning and ease symptoms of depression and anxiety, Teixeira and his team conduct research to develop new treatment options to improve the mental health for people with dementia. Collaborating with Holly M. Holmes, MD, Teixeira is testing a noninvasive therapy to help patients with cognitive impairment who experience apathy.

Robbing people of their motivation and interest in life, apathy differs from conditions like depression and anxiety in patients with dementia because it gets progressively worse over time.

“Unfortunately, apathy does not seem to respond to standard interventions or medications,” Teixeira says. “To help our patients, we had to think outside the box.”

Using transcranial direct current stimulation—a noninvasive device that sends tiny, pain-free electrical charges to the brain—Holmes and Teixeira hope to help people with Alzheimer's disease and other dementias overcome apathy. Patients can use the cap-like device from the comfort and convenience of home, making it available to people with limited mobility and other health challenges.

Based on promising preliminary results, Teixeira and Holmes are now expanding this project to evaluate if transcranial direct current stimulation can also help

improve anxiety, depression, and other behavioral disorders in people with dementia.

“Behavioral symptoms often come in clusters, so we are trying to maximize our impact and improve multiple symptoms at once,” Teixeira says.

As the incidence of conditions like Alzheimer's disease, depression, and anxiety continue to rise across the nation, philanthropic support to the *Many Faces. One Mission.* campaign can help to develop more effective, accessible therapies to improve brain and behavioral health.

“Federal grants don't allow much space for curiosity or creativity. Philanthropy gives us the freedom to explore exciting new frontiers in dementia research so we can deliver better treatments to even more patients,” Teixeira says.

“Philanthropic support empowers us to pursue bold solutions to the toughest brain and behavioral health challenges facing our communities. With age-related conditions like Alzheimer's disease and other dementias on the rise, research funds act as a catalyst to accelerate discovery and help deliver life-changing treatments to patient bedsides.”

Holly M. Holmes, MD

Joan and Stanford Alexander
Chair in Gerontology

Professor and Director,
Joan and Stanford Alexander Division
of Geriatric and Palliative Medicine

Department of Internal Medicine

McGovern Medical School at
UTHealth Houston

—
Vice President
for Community Engagement

UTHealth Houston



The new **John S. Dunn Behavioral Sciences Center at UTHealth Houston** provides the state-of-the-art facilities and resources that make this kind of research possible. Opened in spring 2022, the center is helping scientists pursue translational and clinical research while providing the latest treatments and therapies for people across Texas.

A COLLECTIVE EFFORT TO OVERCOME DEMENTIA

While there are still no cures for Alzheimer’s disease and other dementias, clinicians and researchers across UTHHealth Houston are uniting to transform how we understand and treat these conditions. Fueled by philanthropy, our experts are identifying preventative strategies to delay disease progression, developing treatments that can repair damage in the brain, and addressing the behavioral health impacts on patients and their families.

SPARKING INTERPROFESSIONAL COLLABORATION

COLLABORATING SCHOOLS

- School of Dentistry -
- McGovern Medical School -
- Cizik School of Nursing -

June Sadowsky, DDS, leads clinical rotations to offer dentistry, medical, and nursing students the opportunity to work together to diagnose oral health issues in older adults with other major health problems, including dementia.

“Patients with advanced forms of dementia are among the most vulnerable, and they depend on health providers to make the correct diagnosis and preserve their dignity,” says Sadowsky. “Students in this program learned the importance of collaborating with other health professionals to deliver the best possible care to some of our most vulnerable patients.”



INVESTIGATING THE LINK BETWEEN STROKE AND DEMENTIA

COLLABORATING SCHOOLS

- Cizik School of Nursing -
- School of Public Health -

After her own father suffered a stroke at age 49, Seema S. Aggarwal, PhD '16, RN, decided to dedicate her career to creating better outcomes for stroke patients. With stroke elevating a person’s risk for developing dementia, she is seeking ways to improve post-stroke cognitive rehabilitation and to identify other factors that may help predict who is most susceptible to dementia.

In partnership with experts at UTHHealth Houston School of Public Health in Brownsville, Aggarwal is studying risk factors—including diabetes, high blood pressure, and cardiovascular disease—that may lead to dementia in an underserved minority population. Her findings could lead to earlier prevention and treatment interventions.

“To make an impact on patients who have suffered stroke or are living with dementia, it takes the expertise of a diverse team of health science professionals,” says Aggarwal. “At UTHHealth Houston, we have the people and ideas to change the narrative of dementia and cerebrovascular disease.”

IDENTIFYING GENES ASSOCIATED WITH ALZHEIMER’S DISEASE

COLLABORATING SCHOOLS

- School of Biomedical Informatics -
- School of Public Health -
- McGovern Medical School -
- MD Anderson UTHHealth Houston Graduate School -

While researchers have used the brain images of patients to help identify genes that may be associated with Alzheimer’s disease, existing approaches are unable to capitalize on the vast troves of brain imaging and genetic data available in biobanks. Degui Zhi, PhD, is leading a team of researchers to develop new artificial intelligence methods that can analyze large amounts of neuroimaging data and pinpoint biological markers of Alzheimer’s disease.

Composed of experts in big data, genetics, public health, and biomedical sciences, Zhi’s team expects to discover genes relevant to Alzheimer’s disease. These discoveries may improve our understanding of the biological mechanisms behind Alzheimer’s disease and lead to new treatment strategies.

“The concentration of expertise at UTHHealth Houston and with our national partners allowed us to create this powerhouse team and bring this project to fruition,” says Zhi. “In the future, the tools and methodologies we create could extend beyond Alzheimer’s disease to allow us to investigate other neurodegenerative diseases and mood disorders in a similar way.”

ILLUMINATE THE PATH FOR FUTURE GENERATIONS

Linda Lee, DrPH '05, knows quite a bit about danger. An expert in industrial hygiene, environmental health and safety, and public health, she has built a career helping others avoid work-related hazards. As a diabetes patient, she understands the importance of a proactive response to illness.

Committed to protecting future generations from harm whether it starts outside or inside the body, Lee is illuminating the path ahead with an estate commitment to McGovern Medical School at UTHealth Houston and UTHealth Houston School of Public Health.

Visit go.uth.edu/LindaLee to read her story.



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

UT★Physicians

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

utphysicians.com



UT★Dentists



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

UT★Health Services



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

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Harris Health Lyndon B. Johnson Hospital
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The University of Texas MD Anderson Cancer Center
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THANK YOU

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

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

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

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

