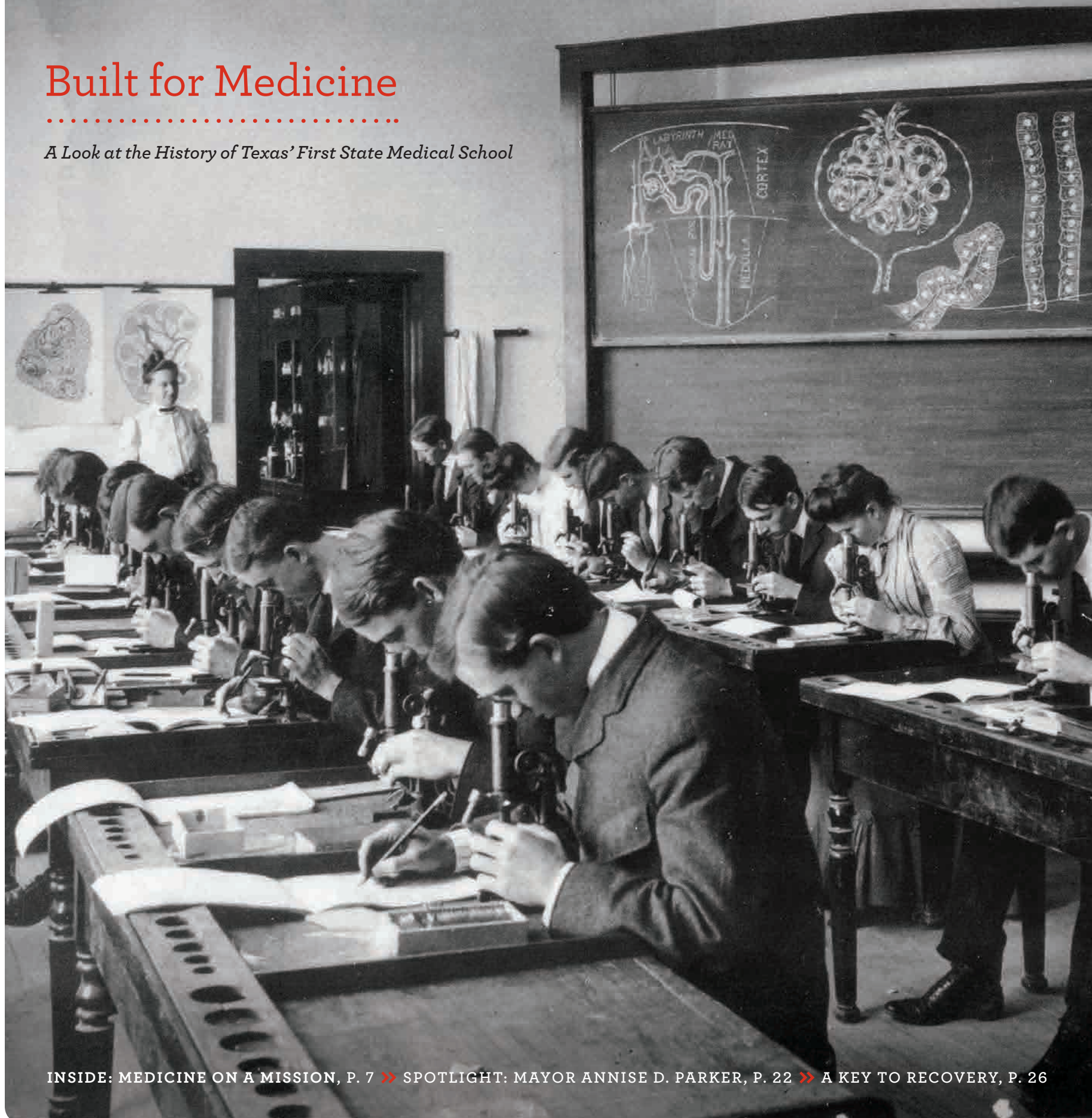


# TMC | PULSE

THE OFFICIAL NEWS OF THE TEXAS MEDICAL CENTER — VOL. 2 / NO. 2 — MARCH 2015

## Built for Medicine

*A Look at the History of Texas' First State Medical School*



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## Vistas De Sevilla

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Free-Standing Homes in a Gated Community

From the \$440's



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Root Terrace with City Views  
Free-Standing Homes

From the  
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\$440's



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**SINCE OPENING ITS DOORS IN 1891, THE UNIVERSITY OF TEXAS MEDICAL BRANCH AT GALVESTON HAS CULTIVATED A PROUD HERITAGE AS THE BIRTHPLACE OF MEDICAL EDUCATION IN THE STATE OF TEXAS. THE STATE'S FIRST MEDICAL SCHOOL CONTINUES TO GROW BY LEAPS AND BOUNDS WHILE REMAINING TRUE TO THE MISSION OF BETTERING HEALTH THROUGH EDUCATION, PATIENT CARE AND RESEARCH.**

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**ROBERT C. ROBBINS, M.D.**  
*President and  
Chief Executive Officer,  
Texas Medical Center*

This cover of TMC Pulse features a 1912 classroom session on the campus of The University of Texas Medical Branch at Galveston. The story and timeline highlight UTMB's rich history of medical education and their role as the first state medical school in Texas. Since 1892, they have graduated more than 14,000 physicians. Many of their graduates work within the Texas Medical Center today.

We often speak to the value of patient care and clinical research, but are always equally mindful of our outstanding academic institutions. For a campus of this size, we are fortunate to have, in total, three medical schools, nine academic and research institutions, six nursing programs, three universities, two pharmacy schools and a dental school.

All of our academic institutions are exceptional in their own right. And together they have truly set the bar for medical education. They help draw in the talent and future leaders of medicine, and it is exciting to imagine what today's medical students will go on to achieve in the future.

Beyond the medical schools, our partner universities are encouraging students to explore business and innovation as possible paths for influencing the future of patient care.

One of the most exciting developments to come out of the new Texas Medical Center Innovation Institute really speaks to the value of education and providing support for a new generation of health care innovators and problem-solvers. The TMC|X Accelerator program pairs experienced mentors with young startup companies to offer the guidance and resources needed to carry ideas through to market and ultimately improve the future of patient care.

The University of St. Thomas, our newest member institution, is undertaking another exciting development. They have partnered with the Houston Methodist Research Institute to offer a master's program in clinical translation management, to help turn basic discoveries into drugs, medical devices or processes that will benefit patients. This program gives students the tools to think critically about the process by which an idea becomes a commercial product and empowers them to be active participants in managing that process.

Education is central to the work being done every day across the Texas Medical Center, and will serve as the cornerstone of our future.

*Robert C. Robbins*

## TMC | PULSE

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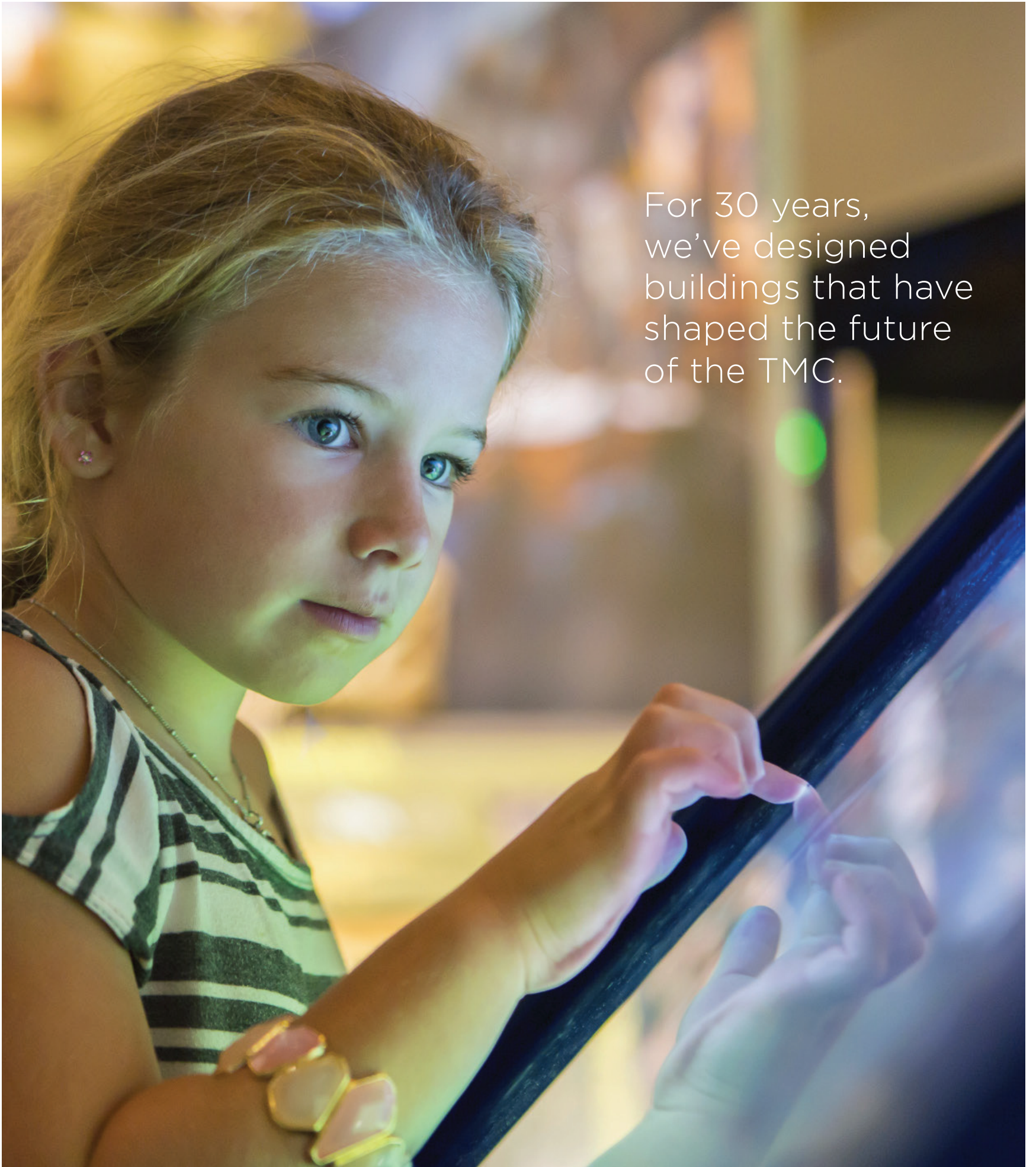
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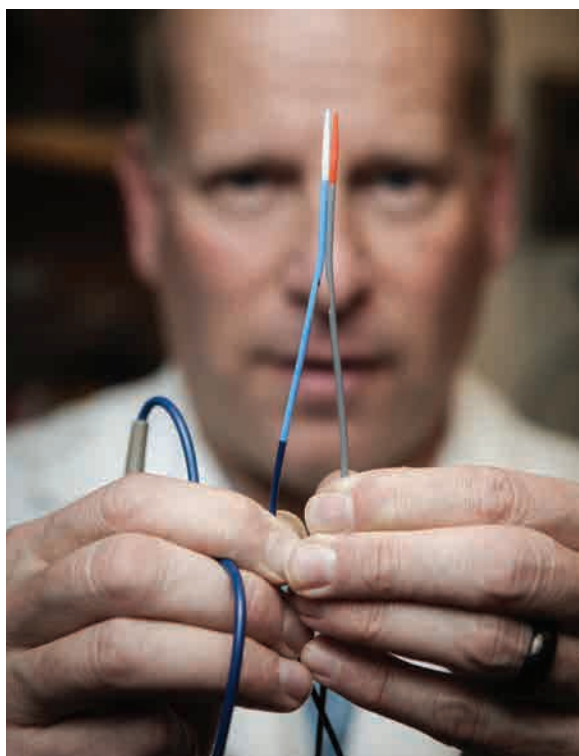
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# Bridging the Gap in Dialysis

*One Texas Heart Institute surgeon's latest invention is changing the game for patients with kidney failure*

BY ALEX ORLANDO



*William "Billy" E. Cohn, M.D., showcases one of his latest technological breakthroughs—a catheter-based device designed to create dialysis access for chronic kidney disease patients.*

Toting a battered, silver pool-cue case over his shoulder like an Old West gunslinger, William "Billy" E. Cohn, M.D., cardiac surgeon and director of the Center for Technology and Innovation at Texas Heart Institute, as well as director of the Department of Surgery Incubator at Baylor College of Medicine, unveils one of his latest technological innovations. As he meticulously holds two slender catheters parallel to each other, the strong magnets inside pull them into perfect alignment with a barely perceptible "clink." Once the magnets are lined up, Cohn activates a spring-loaded electrode that shoots out, bridging the gap between the two catheters. While you have to be paying close attention to notice, this tiny connection has huge implications for patients afflicted by kidney failure.

"Anything I put into this case ends up getting patented, and eventually transforms into a new piece of medical technology," laughed Cohn, also professor of surgery at Baylor College of Medicine, as well as an amateur mechanic whose MacGyver-esque ability to integrate ordinary objects into new biomedical devices is well known. "It's like magic."

“I think this is going to change the game for patients with chronic kidney failure. They're going to be able to get better dialysis for longer, spend less time in the hospital and spend more time living and enjoying their life.”

— WILLIAM "BILLY" E. COHN, M.D.

*Director of the Center for Technology and Innovation at Texas Heart Institute*

The device, known as the EverlinQ System, is a catheter-based technology designed to create minimally invasive dialysis access for patients suffering from chronic kidney failure. Currently, upwards of 400,000 Americans need to be connected to a dialysis machine three to four times a week to have their blood filtered—a biological process normally performed by the kidneys.

"As it stands, the best way to take care of a dialysis patient is an arteriovenous fistula (AVF)," explained Cohn, describing a procedure that entails open vascular surgery and often requires repeat procedures in order to connect patients to the dialysis machine. "We actually make an incision, take a vein, dissect it out and swing it over to the artery so that it becomes a short circuit—like taking a coat hanger and putting it across a car battery." According to Cohn, this short circuit between the artery and the vein dramatically increases the blood flow as well as the size of the vessel, allowing the dialysis nurse easier access.

A surgical AVF has the lowest rate of long-term complications among patients compared to other dialysis solutions that necessitate either a prosthetic graft or a large intravenous catheter, explained Cohn. "Unfortunately, they only work in about half the patients—50 percent of the time, by three to six months, it's completely failed and closed off," he added.

The catalyst for Cohn's innovation came from an unlikely source—the emergency room. "Every once in a while, someone would come into the ER after being shot or stabbed, and they sustained an injury where an artery and a vein are close together," he noted. "In those cases, they developed an AVF that bled directly from the artery into the vein. So here is an AV fistula that never closed spontaneously and resisted our attempts to close it, whereas the ones that we made in the operating room closed off half the time. That didn't seem fair."

Cohn was determined to leverage that innate pathophysiology to create a new type of dialysis access

for patients. "We found a place in every person's arm where there's an artery and two veins right next to each other," he said. "We place these two catheters—one in the artery and one in the vein—and use magnets to pull them into alignment before activating the spring-loaded electrode. It makes a hole in the artery and a hole in the vein without any incisions, without dissecting anything out, and without any surgery. Once we retract the electrode and take out both catheters, the patient bleeds right from their artery into their vein, and the veins dilate just like in a surgical AVF—but without ever closing off."

The EverlinQ system is quickly gaining traction. "We went down to South America and used it in 33 patients—the results are almost too good to be believed," said Cohn. "Now we're involved with hospitals in Canada, Australia, and New Zealand as part of the NEAT (Novel Endovascular Access Trial) study, to further evaluate the performance of the system." Cohn and TVA Medical hope to use the data culled from that study to help design a U.S. trial aimed at gaining approval for domestic use by the Food and Drug Administration.

TVA Medical, the company that Cohn co-founded to develop minimally invasive therapies for end-stage renal disease, including the EverlinQ system, was awarded the 2014 Innovations in Cardiovascular Interventions (ICI) Best Start-Up Innovation Award this past December in Tel Aviv, Israel. The EverlinQ system was selected from a pool of more than 80 international companies according to three main criteria: the impact on novelty, the impact on patient care, and business potential.

"I think this is going to change the game for patients with chronic kidney failure," concluded Cohn. "They're going to be able to get better dialysis for longer, spend less time in the hospital and spend more time living and enjoying their life. That's what motivates all of us at TVA—trying to come up with something that has merit and is meaningful." ■



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# Medicine on a Mission

*Fresh off a trip to rural Guatemala, UTHealth faculty and students share their experiences treating patients who have little to no access to health care*

BY SHEA CONNELLY



“There is no way I could see the number of patients here in the United States like what we try to see and accomplish in rural Guatemala. There are just so many people that are in desperate need of basic general health care that we in the U.S. take for granted.”

— ROBIN HARDWICKE, PH.D.  
*Associate Professor of General Medicine and Obstetrics and Gynecology at UTHealth*

Just over a week into the new year, a time when most are in a post-holiday recovery daze, a medical mission group of 55 team members arrived in Pueblo Nuevo, Guatemala. Led by Philip Johnson, M.D., division director, professor and vice chair of general medicine at The University of Texas Health Science Center at Houston (UTHealth) Medical School, the group was preparing to spend a week providing free health care to Guatemalan citizens who desperately need it.

Guatemala is a strikingly beautiful country, but the towering mountains and lush green landscape also harbor extreme poverty. Three decades of civil war ending in the 1990s took a toll on many Guatemalan citizens. More than

50 percent of Guatemala's population live in poverty, according to The World Bank, and that number increases greatly among the indigenous Mayan population living in remote, mountainous areas. For the past decade, Johnson and his wife, Linda, have led a team to rural villages to offer what may be the only health care villagers will see for the entire year—or even longer.

Johnson's love for serving the people of Guatemala dates back to high school, when he first traveled to the country with Houston-based nonprofit Amigos de las Americas. He continued to travel to Guatemala through college and completed a two-month long elective in the country during medical school.

ABOVE: Patients wait in line in San Marcos, Guatemala (Credit: Josie Johnson)





**TOP:** Pam Gallacher greets patients at Casa de Fe, Faith in Practice's 100-bed patient facility

**MIDDLE:** A young patient smiles in triage

**BOTTOM:** Yun Wang, M.D., examines a patient's eyes

Johnson has since passed his love on to many of his colleagues at UTHealth, as well as the medical students and residents who embark on his twice yearly trips to villages in Guatemala, organized by Faith in Practice. The organization targets the most remote areas of Guatemala, which do not have health services. Faith in Practice's structure involves a Guatemalan staff and a local volunteer network to ensure the patients referred to surgery are accompanied during the referral process and the patient remains the central focus throughout care.

"There are two types of trips Faith in Practice does—a surgery trip and a medicine trip," said Johnson. "This year, I think there are something like nine one-week medicine trips. We lead one of those. Then there are maybe 31 or 32 surgical trips of one-week duration and we also lead one of those. We're going to do that in May."

Many of this year's team members are regulars, traveling with Johnson year after year. Robin Hardwicke, Ph.D., an associate professor of general medicine and obstetrics and gynecology, has now completed nine consecutive annual trips to Guatemala, motivated by the need she experienced from the start of her very first visit to the country.

"I was blown away with surprise. We arrived to a line of people that was farther than my vision can see waiting at the gates hoping for care and assessment by us. I never imagined the degree of need," she said, describing that first visit. "There is no way I could see the number of patients here in the United States like what we try to see and accomplish in rural Guatemala. There are just so many people that are in desperate need of basic general health care that we in the U.S. take for granted."

The trip consisted of four days seeing patients, and more than 2,500 people visited five different clinics: general medicine, gynecology, pediatrics, dermatology and dental. Complaints ranged in severity from those that could be solved with cold remedies, antibiotics or ibuprofen to much more serious issues requiring more extensive treatment or surgical referrals.

"We made 230-some referrals for surgery. People who have had hernias, have had uterine prolapse, have other

small tumors, things that need removing. They've waited around because there's no access to the surgery," said Johnson. "It's not uncommon to see patients who have had hernias that have affected their work for five or ten years. And we can remove those and they can go back to work."

Hardwicke, who oversees the obstetrics and gynecology clinic, said her team saw as many as 50 to 100 women per day for a variety of gynecologic or obstetric needs, many of whom had never had a pelvic exam before, much less any form of obstetrical care.

"Many Guatemalan women don't understand normal menstrual cycles, they don't understand normal premenstrual symptoms, they don't know anything about their bodies, however, they may have already been pregnant 10 times," said Hardwicke. "They typically don't have prenatal care, so one might imagine what a joyous treat it is to perform an ultrasound and show her a live picture of her baby's heart and reassure her the baby is doing OK."

One of the most crucial roles the obstetrics and gynecology clinic fulfills is cervical cancer screening. According to the World Health Organization, the cervical cancer mortality rate in Latin America and the Caribbean is three times higher than in North America, and for many of the women visiting Hardwicke's clinic, this may be their only shot at finding it. To that end, Johnson explained the team performs a basic cervical screening, which is much more rapid than a traditional pap smear.

"You use acetic acid wash on the cervix of these ladies that are at risk and you do an inspection and then do cryotherapy on any lesions they have that might be precancerous," said Johnson. This year the OB-GYN team referred nine women who appeared to already have cervical cancer.

For the Guatemalan patients, these volunteers can be lifesavers, but the experience is often life-changing for the health care workers as well. Johnson said his trips to Guatemala as a teenager are what ultimately inspired him to become a physician. Now they offer him the opportunity to get back to the basics of medical care.

"You're working with other people really closely. You can ask questions, the pharmacy is right there, the patients



don't have to be screened for insurance, you don't have to use computer systems to send the prescriptions off or do referrals," said Johnson. "It's a little like the way medicine used to be practiced."

Fiona Strasserking, a fourth-year medical student at UTHealth who traveled to Guatemala for the first time this year, said the trip offered the kind of education that can't be found in the classroom or a traditional American hospital. Strasserking is no stranger to health care disparities, having grown up in Sierra Leone; however she was still surprised by her trip to the remote villages of Guatemala.

"Given where Guatemala is, central America, and the fact that the Americas are more economically stable than Africa, I was actually surprised that Guatemala and the people we saw there were worse off than I would have expected for this part of the world," she said. "Better than Africa, but worse than my expectation of the Americas."

Like Johnson, Strasserking's experiences in areas that lack basic health care inspired her to become a physician. She recalled the childhood friend who died of rabies from a dog bite because she did not have access to treatment, as well as a physician mentor who succumbed to the Ebola virus.

"Health care is one of the basics of human life that should not be bargained because somebody doesn't have money or doesn't have the resources," she said. "It should be something that everybody is entitled to."

Trips such as this one are invaluable for medical students, Strasserking added, opening their eyes to lives so different from their own. All medical students are directly supervised by licensed physicians, but still have the opportunity to be very involved in the process.

"It's humbling and it gives you perspective on the rest of the world. The vast majority of the world, this is how they live, this is how they survive," she said. "We have so much in the United States, so we take so much for granted here."

Hardwicke echoed those sentiments, saying the trips have the power to "ground" participants, helping them realize how fortunate they are.

"We take medical students and residents with us, and I love to have that

opportunity to teach the young people in a setting that is so vastly different from our own in the U.S.," she said.

"We also take college students with us and to be able to watch them learn and watch them recognize the problems of the world, there's nothing else like it."

Hardwicke is determined to train her replacement. She is in search of that particular individual on a daily basis, and said she knows it will take many years to get that person trained in the same way that she was by Johnson. "Bringing the value of humanity into a student's life is invaluable," she said.

Taking students and residents on the trip also has the added benefit of bringing fresh eyes to a routine that has become familiar to veterans like Johnson and Hardwicke. In fact, Hardwicke recalled Strasserking noting a piece of equipment that could be

helpful on future trips—a probe that would enable them to more accurately screen for heart defects.

"The OB-GYN clinic had a perfect machine with both the 2-D black and white pictures and color capability, and everything else that we'd need for an echocardiogram," Strasserking explained, "but they didn't have the probe that you'd attach to it to look at the heart."

The team has taken note of Strasserking's suggestion, and will hopefully have the means to bring the cardiac probe to use on future trips.

"That's something I would never have known or thought of," Hardwicke said.

By the end of the week, the team had filled over 6,500 prescriptions, treated 432 people for dental pain, and given away 400 pairs of reading glasses and

close to 1,000 pairs of sunglasses, crucial for many of the patients who spend hours laboring under the blazing sun. But the team did not leave empty-handed. Stefano Sdringola, M.D., professor of cardiovascular medicine and the Weatherhead Distinguished Chair of Heart Disease at UTHealth, traveled to Guatemala for the first time and said his experiences during that week will stick with him going forward. Once he retires, he plans to spend his life taking similar trips.

"There is a feeling of joy and happiness that comes from giving ourselves to others," said Sdringola, who traveled with his teenage daughter, a college student planning to study medicine. "It's a great teaching experience and we can receive more than we can give to them." ■

**BY THE END OF THE WEEK, THE TEAM HAD FILLED OVER 6,500 PRESCRIPTIONS, TREATED 432 PEOPLE FOR DENTAL PAIN, AND GIVEN AWAY 400 PAIRS OF READING GLASSES AND CLOSE TO 1,000 PAIRS OF SUNGLASSES, CRUCIAL FOR MANY OF THE PATIENTS WHO SPEND HOURS LABORING UNDER THE BLAZING SUN.**



*Stefano Sdringola, M.D., speaks with a patient in the clinic*



**ANTHONY E. BRISSETT, M.D., DIRECTOR OF FACIAL PLASTIC AND RECONSTRUCTIVE SURGERY, CO-DIRECTOR OF AESTHETICS, AND ASSOCIATE PROFESSOR OF OTOLARYNGOLOGY-HEAD AND NECK SURGERY AT BAYLOR COLLEGE OF MEDICINE, TALKS ABOUT HIS MISSION WORK IN RWANDA, AND HOW A CHILDHOOD SPENT PLAYING HOCKEY INSPIRED HIS MEDICAL CAREER.**

**Q** | *Can you tell us about your formative years?*

**A** | My journey began as far north as a person can go in the contiguous United States, or even farther north. I was born and raised in Canada, in a small hockey town (Kitchener) with about 200,000 people, just outside of Toronto, in the province of Ontario. My hometown was uniquely international and diverse, with multiple ethnic groups representing almost every span of the world, with a largely German, Caribbean and British influence. My parents were both born on the island of Jamaica, and later moved to England before finally settling in Kitchener-Waterloo, Canada. Needless to say, as

a young boy, my mom's British exposure strongly impressed upon me the importance of proper social etiquette, table manners and social skills, which I continue to appreciate now as an adult and pass onto my children. Like most Canadian boys, I grew up playing a lot of ice hockey and watching a ton of NHL professional hockey teams. In fact, my hometown was home to a successful Canadian Hockey League team: The Kitchener Rangers. I recognize now, that it is likely no accident that I selected a specialty—facial plastic surgery—that focuses on facial aesthetics and reconstruction, given my early years as a hockey player, and exposure and observation of some significant

facial traumas experienced in the sport of hockey!

**Q** | *It sounds like you had a unique blend of cultural experiences that influenced your childhood.*

**A** | Having lived in Ontario, Canada, amongst a rich cultural backdrop, and myself being a dual citizen of Canada and the United States, along with parents of British and Caribbean roots, I really enjoy meeting people from diverse backgrounds in my community, and also have a deep appreciation for the global community and world travel. Having travelled internationally on several medical/surgical mission trips, I not only get the opportunity to see



and travel to remote parts of the world rarely seen by most, but I can bring my gift of service to underserved global regions, and provide help to people who otherwise would go without. The value that I place on community service, whether local or global, can certainly be traced back to my early cultural experiences in Canada, and later developed and continued in the United States and globally.

**Q | What led you to a career in medicine?**

**A |** Having grown up in a small town, with a rich sense of community values and service, I developed a heart for helping others in my small community through volunteer service initially, and later met mentors in the medical field who shared my intellectual curiosity and desire to seek solutions to complex scientific problems. Together those experiences led me to pursue undergraduate in the sciences, and then a medical school career.

**Q | Where did you study and train?**

**A |** I attended medical school on an academic scholarship at Wayne State University in Michigan. I completed my a residency training in otolaryngology/head and neck surgery at Mayo Clinic in Rochester, Minnesota. Upon completion of my residency, I stayed on as a clinician-investigator at Mayo Clinic Rochester, and then pursued my fellowship in facial plastic and reconstructive surgery at the University of Minnesota.

**Q | What brought you to Houston?**

**A |** I was recruited by Bobby R. Alford in 2003 to develop the facial plastic and reconstructive surgery program within the department of head and neck surgery. There really wasn't a program here at the time, and so coming here presented an opportunity to create something unique. Looking back just 10 or 12 years ago, we are a section that

has a true identity in the Texas Medical Center; we have grown to have presence throughout the medical center—Texas Children's, Ben Taub, Michael E. DeBakey VA, St. Luke's and The Houston Methodist Hospital.

**Q | Can you tell us about the patients that you see and treat?**

**A |** I have a unique and diverse practice that is limited to facial surgery. The beauty of my practice is that I treat patients of all ages. For the pediatric population, my practice is primarily focused on outer ear surgery. I build ears for children that are born without them—a disorder called Microtia. For my adult practice, it's a blend of cosmetic and reconstructive surgeries. On the cosmetic side, it can vary from office based procedures such as Botox or injectable fillers to patients that have a desire to enhance their appearance with procedures such as brow lifts, rhinoplasties or face-lift. On the reconstructive side, I care for patients that may need surgery following trauma or the removal of cancerous tumor.

An aspect of my practice that I enjoy is caring for patients with facial paralysis. Being able to restore someone's ability to close their eye or create a smile can be life changing and is a unique experience.

I have the best practice in the world. It varies from trauma and cosmetic, from pediatric and geriatric.

**Q | Can you speak a bit more to what patients with Microtia are struggling with, and what you hope to help them overcome?**

**A |** Microtia can vary anywhere from a child that is born with a normal-looking ear but very small, to a child that is born without an ear at all, and without an ear canal. The incidence of microtia is about one in a 10,000 live births. The cultures that are most often involved are Asians, Hispanics and Caucasians.

The problem for patients with microtia is an issue of form and function. In relation to form, there are body image and sense-of-self issues that develop as a result of an abnormal ear. The function issues relate to their ability to hear, in addition to their ability to acquire speech and language.

We begin seeing these patients as early as possible and identify modalities that can address their hearing issues. Reconstructive surgery to create the new ear typically occurs around the age of nine or 10. Depending upon the

type of procedure I perform, a new ear can be created in two or four stages. Typically I spread these out over a three to six month time frame, so the total duration from beginning to end is about one year.

There are a variety of ways to reconstruct an ear. The technique that I typically use for children begins with harvesting several of their ribs. Once the rib has been harvested over the course of several hours, it is carved and transformed into the shape of an ear.

“For the pediatric population, my practice is primarily focused on outer ear surgery. I build ears for children that are born without them—a disorder called Microtia.”





“ So what we do in Rwanda, and all of the other missions that we participate in, is we partner with the ministry of health, we partner with the hospitals within the region, and we partner with their training program. The focus is always two-fold: providing care and building capacity. ”

Recreating ears that really look like ears is something that I think about routinely, to see how I can improve and perfect this technique. And what drives me to get better is the desire I have seen in my patients, children wanting to be as normal as possible. There is a picture that I keep in my office, and it's one that I think about a lot. It's an incredibly thoughtful picture by one of my 8-year-old patients that she drew of her face. It's a cartoon-like drawing that shows the face of a smiling child but also shows that she has one normal-appearing ear and one ear that is much smaller and different than the other.

**Q | Can you speak a bit more about the clinic that you mentioned earlier?**

**A |** The clinic is called Casa El Buen Samaritano. I am one of the founding members and am on the board. It is a clinic that was developed through a church partnership. It's a 501c3 not-for-profit organization with a mission of providing health care and spiritual enrichment. Casa El Buen Samaritano provides free health care services to those in need. The clinic has been in

existence for almost five years and is open two to three days a week. It's important for me to recognize that there are groups of individuals that are living within the shadows of the medical center that do not have access to care. This clinic creates an opportunity to provide this access and care for our community. All of our providers are volunteers and many of them are clinicians who work within the Texas Medical Center.

**Q | Can you tell us about your trip to Rwanda?**

**A |** My upcoming mission to Rwanda is organized by a foundation I am part of called Face the Future. Face the Future is a Canadian-based organization with a mission of building capacity and providing care to patients around the world. In this mission, we have developed a team of surgeons from Baylor, Johns Hopkins and University of Toronto. While in Rwanda, we will be working with plastic surgeons and head neck surgeons at their major teaching hospital in Kigali. The goal of this mission will be focused on providing care for patients with reconstructive needs.

Several of the patients we will see and treat are survivors of the genocide who have traumatic facial injuries. We will also see other pathology such as congenital abnormalities like cleft lips and palates and patients, with head and neck tumors.

So what we do in Rwanda, and all of the other missions that we participate in, is we partner with the ministry of health, we partner with the hospitals within the region, and we partner with their training program. The focus is always two-fold: providing care and building capacity.

**Q | Have you had any mentors throughout your life?**

**A |** Absolutely. You can't get to this point without having the support of others. And I have had the support of so many people, every step of the way. I have been blessed with both personal and professional mentors in my life. I met my first true professional and career mentor in college. Her name is Cathy McDonald. Cathy taught me the value of persistence and perseverance. She was someone who really believed in my abilities and encouraged me to pursue them.

In terms of career guidance, there is a mentor that I met in medical school; his name is Dr. Jack Clark. He introduced me to the specialty of otolaryngology/head and neck surgery. He also identified Mayo Clinic as a place he thought I should be trained. Dr. Clark's guidance allowed me to pursue my specialty within an institution of excellence.

Last, but certainly not least, is my wife, whom I've known since adolescence and has shown incredible wisdom. If you can imagine knowing someone since you were 12 or 13 years old, and having their support throughout your entire educational and professional career. It allows me to see how valuable that kind of friendship and mentorship can be.

When I reflect upon the position I'm in or the person I have become, I can identify specific people or groups of people who have allowed me the opportunity to be here. So these are

just a few of them. There are a variety of others that may have had just a small time in my life, but have had a significant impact.

**Q | What do you see as the benefit of having resources and experienced professionals in one place, as we do here in the Texas Medical Center?**

**A |** What the Texas Medical Center has to offer is a great depth of expertise, resources and collaboration. Practicing within the Texas Medical Center allows me to identify the specialties and specialists that can best support the needs of my patients. What it signifies for me is a massive integrated group practice, with multiple institutions and specialties that allow us to work together to provide the highest quality of care.

We are blessed with the opportunity to care for some of the most complex patients and cases, and thus serve as a resource to our community—not just within the city, but also within the state and around the country. As a physician within the Texas Medical Center, I have access to a group of unique specialists that all have unique areas of expertise. And when one brings all of those components together, we are able to really provide something special for our patients.

**Q | Any closing thoughts?**

**A |** As a surgeon within an academic center, it's so important to emphasize the value of teaching and ongoing education. Undoubtedly, caring for patients is the most important aspect of what I do as a physician. However, at the same time, preparing and educating physicians to care for patients is central to the core of our mission and an important aspect of what we offer here within our section, within our college, and within the Texas Medical Center. Preparing and training our future generations of physicians is very exciting for me. Seeing residents that I have trained or medical students that I have mentored make a difference and attain levels that I have not is an exciting and humbling experience. ■





EVERY WEEK BETWEEN JANUARY AND APRIL, A DIFFERENT “STAR” OF HEALTH POLICY TAKES CENTER STAGE VIA THE INTERNET IN A COURSE ORGANIZED BY THE TMC HEALTH POLICY INSTITUTE. One of the important goals of the Institute is to educate the next generation of health leaders. The course, “The U.S. Health Care System and Its Place in the World,” engages students from four universities—The University of Texas School of Public Health, the University of Virginia, Cornell University and Vanderbilt University—and eminent health policy experts in a one-hour question and answer session.

The Institute also has a goal to educate the public. Members of the public from throughout the United States are invited to watch and to listen. In the first week, there were 61 students from the four universities, and over 150 members of the public. Many of these stars are well known to students and policymakers, but in this format, in which the stars broadcast either from their home or personal office, those taking part get to see a relaxed side of the faculty; a ‘slice’ of an hour in a real conversation with anecdotes, serious topics and humor. All-in-all, this is a memorable experience for the viewers.

The stars and their topics include: **Gerard Anderson, Ph.D.**, Johns Hopkins, on why the U.S. is so expensive compared to other countries; **Uwe Reinhardt, Ph.D.**, Princeton University, on what we can do to reduce waste; **David Blumenthal, J.D.**, former national coordinator of health information technology, on what computerized records can and cannot do for health systems; **Sara Rosenbaum, J.D.**, George Washington University, on Medicaid; **Mark McClellan, M.D., Ph.D.**, former administrator of Medicare and Medicare Services and former commissioner of the FDA,

on new ways to organize doctors and hospitals; **Sean Nicholson, Ph.D.**, Cornell University, on why it is so expensive to educate medical students and what we can do about it; and **Tsung-Mei Cheng, Ph.D.**, Princeton University, on what we can learn from other countries. **Carolyn Engelhard Ph.D.**, University of Virginia, will cover the Affordable Care Act: the Good, the Bad and Ugly, and I will speak on Access to Care: How Many Doctors Do We Really Need?

This course also serves another of our goals: to be the resource for health information and analysis in the state, similar to the U.S. Institute of Medicine. These stars give the most up-to-date information in their discussions—in some cases, just as the news outlets are getting the stories. This is exciting for all who are watching—and very instructive—to see how policy is made.

The Institute is planning a course with a similar format, but with adding a live audience, inviting the stars of the Texas Medical Center. We have so many stars, we could likely go for years without a repeat. What a great problem to have! ■

## TUNE IN

Every Thursday through April 14, 2015

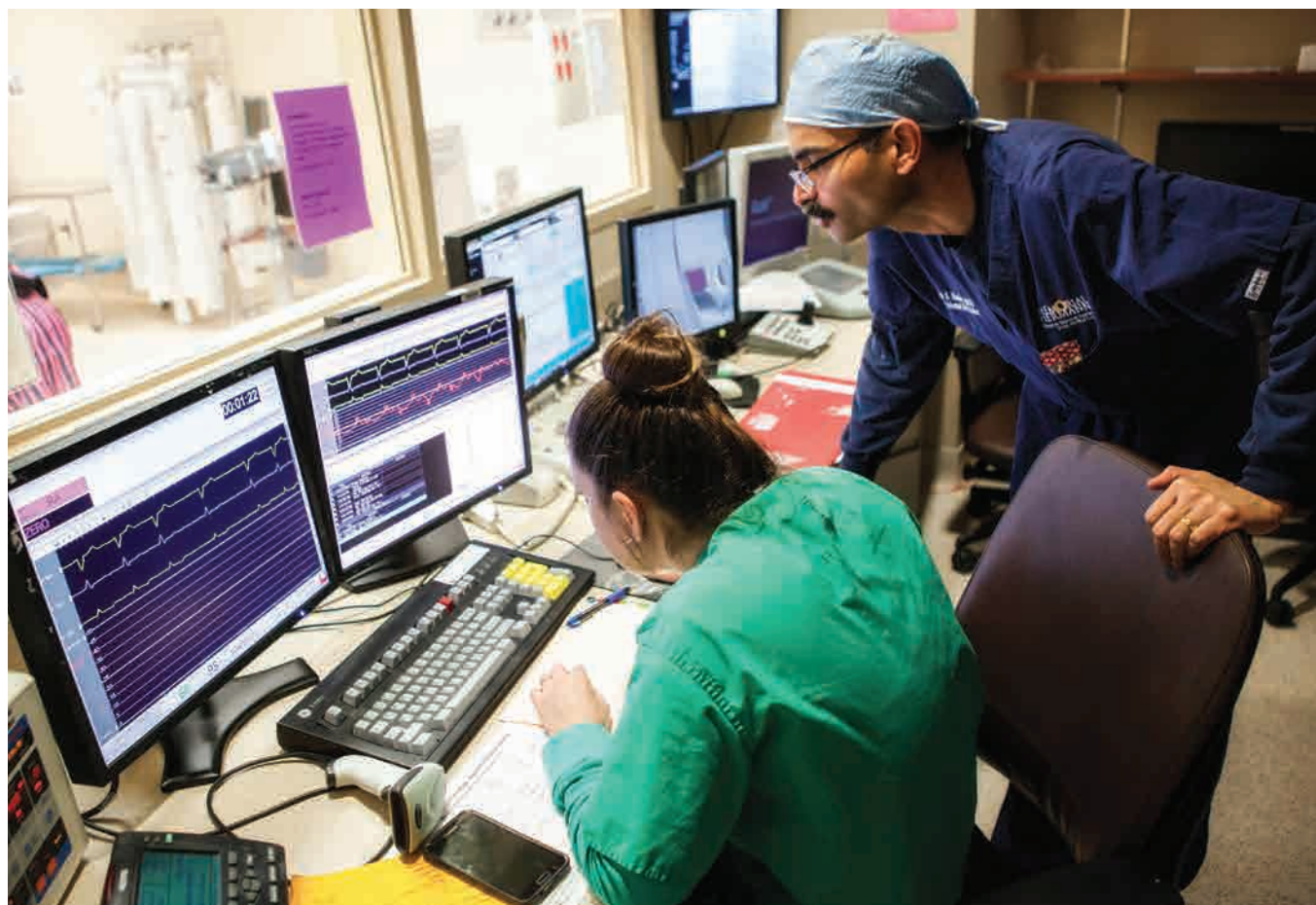
6:00 p.m. CST

For the schedule of speakers and the link to participate in a star course, visit: [TMCNews.org/star-course](http://TMCNews.org/star-course)

# Danger at the Heart of Pregnancy

*Doctors in the Texas Medical Center are working hard to identify and treat women suffering from a rare life-threatening heart condition that strikes during pregnancy*

BY HEATHER HEMINGWAY



*Sriram Nathan, M.D., director of cardiogenic shock at the Center for Advanced Heart Failure/UTHealth, pictured at right, evaluates a patient.*

Imagine waking up in the middle of the night gasping for breath. That's what happened to Diane Russo night after night during her last 12 weeks of pregnancy.

During her third and final pregnancy, Russo discovered that if she sat up, the problem went away. But after it kept happening repeatedly, she talked to her OB-GYN, who, told her it was because she was carrying a big baby, just as her previous babies had been.

When her condition worsened, she finally had an echocardiogram, which revealed blood in her lungs. Her doctor had her rushed immediately to the Intensive Care Unit (ICU) at CHI St. Luke's Health-Baylor St. Luke's Medical Center. Russo then had a Swan-Ganz pulmonary catheter inserted to monitor the heart's function and blood flow.

Due to this pulmonary complication, Russo's baby was induced two weeks

early—only two days after her own hospitalization—on June 10, 1998, weighing 9 pounds 2 ounces. Now that her son was born, all she wanted to do was hold him as she fought for her life.

Her ejection fraction, the fraction of outbound blood pumped from the heart with each heartbeat, was as low as 11-12 percent when she gave birth.

According to Indaranee Rajapreyar M.D., cardiovascular disease specialist with the Center for Advanced Heart Failure at the Memorial Hermann Heart & Vascular Institute-Texas Medical Center (TMC)/UTHealth, the norm for most healthy people is between 55 and 65 percent. It was at this time Russo learned that if she ever got pregnant again, she would die.

Russo recalls how rough those first few days of her youngest son's life were. Due to being jaundiced, he was sent to Texas Children's Hospital while she

stayed in the ICU at Baylor St. Luke's Medical Center.

After 21 days, Russo was finally released from the hospital with her ejection fraction measuring at 19 percent. Over the years, it eventually raised. Russo, however, was never the same and had to return to the cardiologist for routine visits every six months for the first five years after the birth of her son, then once a year from then on.

Fast-forward 13 years. In late 2011, at a routine cardiologist visit, Russo's doctor gave her some news. "It's time," were the words Russo remembers her doctor telling her, meaning it was time to get on the heart transplant list. By March of 2012, Russo recalls feeling "winded and sluggish."

A month later, Russo met with Biswajit Kar, M.D., chief and program director of the Medical Division at the Center for Advanced Heart Failure/UTHealth, who took an active role in her treatment every step of the way. After waiting a year, Russo was "offered the gift of a heart transplant." She was the 19th heart transplant patient Kar treated.

For women like Diane Russo, peripartum cardiomyopathy (PPCM), is a life-threatening disease of the heart muscle that affects women in the last month of pregnancy and even up to five months after delivery. Although it is quite rare, no one knows for sure how many people have ever had it. Rajapreyar said it could be as low as one in 1,000.

While Russo's case was severe and most patients recover after giving birth, symptoms of PPCM are similar to those of heart failure. Besides shortness of breath and excessive fatigue like Russo suffered, other symptoms may include rapid heartbeat or palpitations, chest pain, swelling of the feet or ankles, and tiredness during physical activity.

Sriram Nathan, M.D., director of cardiogenic shock at the Center for Advanced Heart Failure/UTHealth,



who works on Kar's research team, said the disease is more prevalent in women who are African American, middle-aged, diabetic, and those with high blood pressure.

Depending on the severity of the case, treatment varies from the use of a balloon heart pump, intravenous medication, or simply changing the diet and adding medication such as diuretics, vasodilators which dilate the blood vessels, or beta blockers, which work as blood thinners.

Rajapreyar spoke with excitement when she mentioned a breakthrough medicine called bromocriptine in South Africa. The drug works as an antagonist to prolactin, the hormone responsible for secreting breast milk.

Nathan said that a stumbling block they face is trying to keep the baby safe while treating the mother. Sometimes if the mother is far enough along in her pregnancy, they can talk about performing a C-section.

Before they could do any research on PPCM and attain any funding, Nathan said their team of medical researchers had to go before UTHHealth's Institutional Review Board, to have the legality and value of the research approved. Once they overcame that hurdle, the next one was to attain funding. Last February, through the Memorial Hermann Foundation, Memorial Hermann Heart & Vascular Institute-TMC received a grant from the Alpha Phi Foundation called Heart to Heart. In the past six months due to more funding, their research has taken off as they added a registry.

The registry works by screening obstetric patients with heart problems, such as PPCM to study biomarkers in blood samples and echocardiograms, which are then stored in a biorepository. Five years from now, researchers can then check the blood samples to help identify others with the same biomarkers. Through the registry, Nathan said doctors can determine if PPCM is

exaggerated more than heart failure in the average person.

Through this process, researchers are hopeful that they will have the ability to find symptoms earlier in the pregnancy and attain a better understanding of this disease to determine who needs to be screened.

Besides helping identify the triggers of the disease along with its signs and symptoms, the registry also has the capacity to help other doctors around the world, especially in Africa, where the disease is prevalent.

"We want to ensure that this information is something other hospitals can use in the Northeast, Southwest, etc.," said Nathan. "I generally believe this is something we should have done a long time ago."

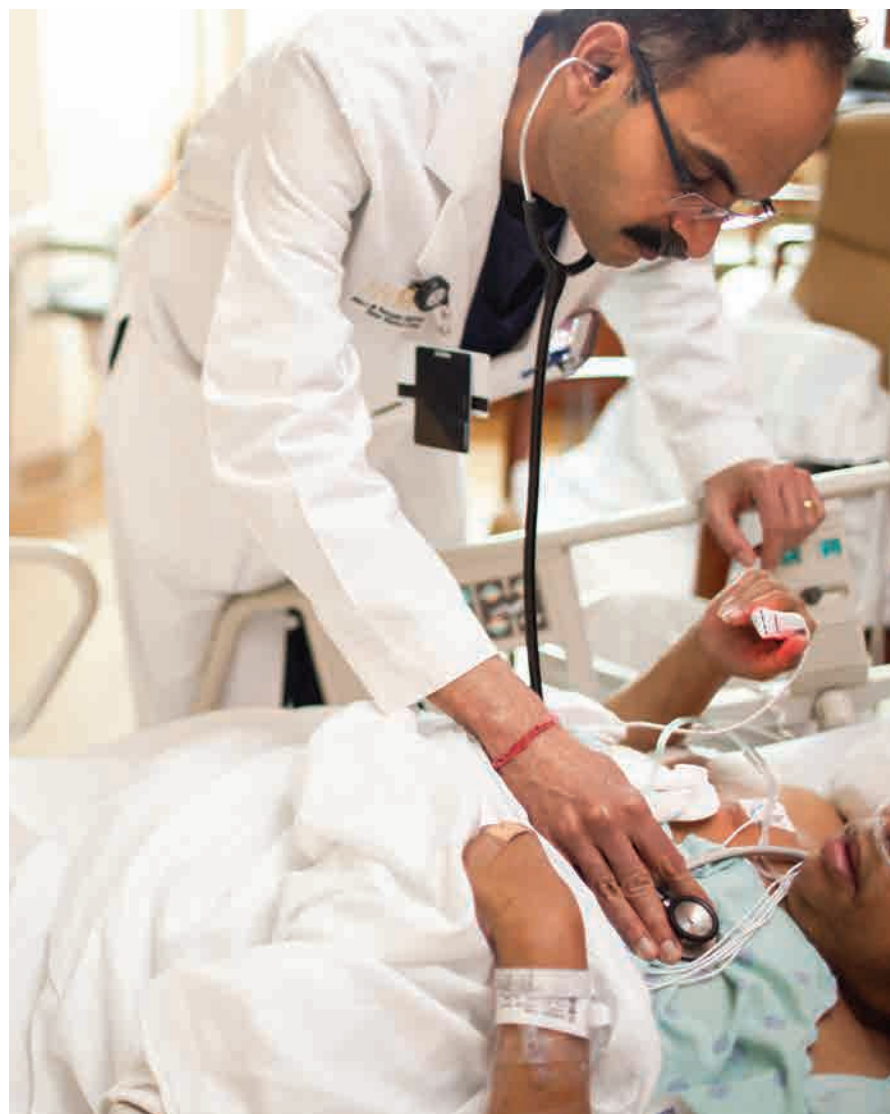
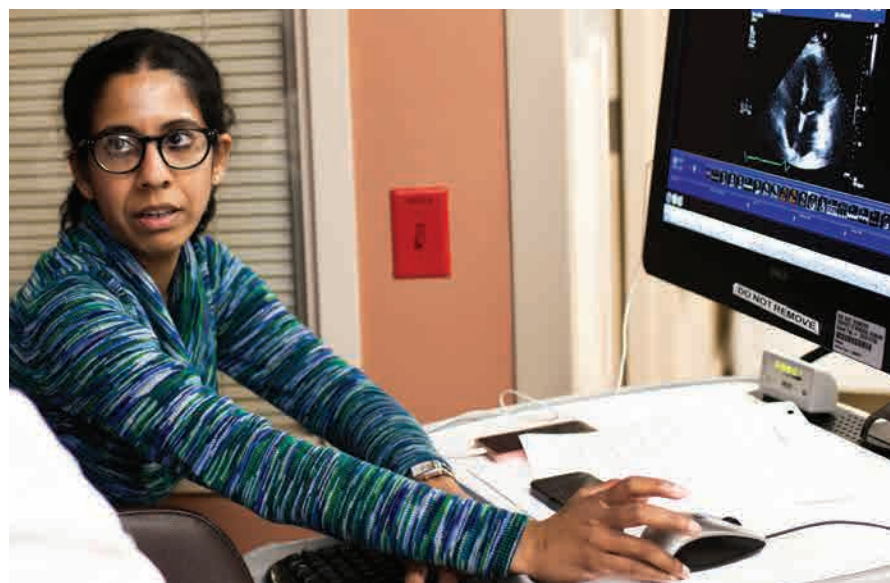
As to why this disease happens, Nathan has a few theories. One is a speculative connection with prolactin, the hormone responsible for secreting breast milk. Sometimes its breakdown affects the heart. Another theory is that PPCM is caused from antibodies from baby to mother whose body cannot handle them.

"We try to save the mother and the baby, but sometimes we have to tell mothers that they can't have any more children," said Nathan.

Russo, now a 54-year-old mother of three, takes the work Kar, Nathan, and Rajapreyar very personally. She made friends with the doctors and nurses who treated her. They and her family gave her "something to hang on to."

They also gave her the gift of time. She will be forever grateful for the heart transplant that prolonged her life. Although she still sees a cardiologist every three months, she is happy to be able to help others, and enjoys her family and her career.

Tearing up, Russo spoke from the heart. "I am very thankful. I'll feel indebted to these people for the rest of my life." ■



TOP: Indaranee Rajapreyar, M.D., cardiovascular disease specialist with the Center for Advanced Heart Failure at the Memorial Hermann Heart & Vascular Institute-Texas Medical Center (TMC)/UTHealth







# BUILT **FOR** MEDICINE

## THE HISTORY OF TEXAS' FIRST STATE MEDICAL SCHOOL

BY SHEA CONNELLY

The University of Texas Medical Branch at Galveston is the picture of a modern academic medical center. Students hustle across the grounds, rushing to class. Researchers in white coats are hard at work in the Galveston National Laboratory and numerous other research buildings. Patients check in for care at John Sealy Hospital and clinics, and the emergency department's Level 1 Trauma Center is always at the ready. Standing at the center of it all is a stately red building of a strikingly different style than the rest of campus. The Ashbel Smith Building, or Old Red, was once the entirety of the medical school, flanked by its clinical facility, the original John Sealy Hospital. Although Old Red is now surrounded on all sides by more than a century of progress, the building still serves as a reminder of the university's humble beginnings as the first state medical school in Texas.

The founding of UTMB in Galveston began with a vote. In an 1881 state referendum, the people of Texas overwhelmingly selected Galveston as the site of the medical branch of the University of Texas—70 percent of voters chose Galveston over Houston. At the time, Galveston was a bustling seaport town—one of the largest ports in the United States and the commercial center of Texas. State funds

secured the school's location on the eastern end of The Strand and architect Nicholas Clayton was hired to design it. Clayton was one of the first professional architects in the state of Texas, and his work was already known on the island.

"In the height of his career, from 1874 to 1906, he did 225 buildings in Galveston alone," said medical historian Heather Wooten, Ph.D. "Everything from the beautiful Bishop's Palace on Broadway, to a lot of the old established churches like the First Presbyterian. His contribution cannot be underestimated."

Though Clayton was prolific throughout the island, Old Red was a particularly significant project for the architect. Built of red sandstone and granite, topped with a dome and covered with ornate Romanesque Revival details, Old Red was a work of art.



When UTMB opened, medical school took **THREE YEARS**

"Of all those beautiful buildings he designed throughout Galveston, and also throughout Texas, Old Red was really one of his babies," said Wooten. "What he thought was his masterpiece."

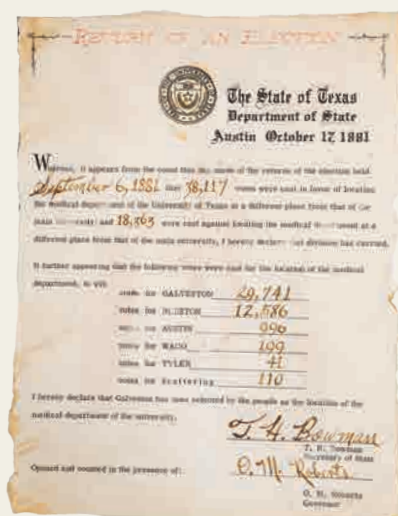
On Oct. 5, 1891, what was officially known as the Medical College Building opened its doors to the first students—just 14 first-year students, five second-year students, four third-year students—and 13 faculty members. At that time, medical school lasted three years and did not require any college prerequisites. Though the students were green compared to today's medical students, the faculty was not easy on them.

"They may have had a very raw group of students, but their standards were the top," said Wooten. "It was like, 'Just because our student body is struggling does not mean we lower our standards to meet

them. They are to climb and reach it."

Those first years were a time of growth for UTMB. By 1897, the student body comprised over 200 students and a fourth year of curriculum was added. But just about a decade in, during the summer of 1900, a disaster happened that almost destroyed UTMB, as well as the entire island of Galveston.

Early Sept. 7, 1900, the national Weather Bureau issued a storm warning for the Gulf Coast region. Galvestonians watched clouds gather, but even as waves swelled and winds howled, no one could have predicted how bad it would become.





The full force of the hurricane hit Sept. 8. By the time it was over, between 6,000 and 8,000 lives were lost in Galveston, and the majority of the island's structures were destroyed.

Nicholas Clayton rode out the storm in Galveston, and was shocked to find much of his life's work still standing, including Old Red. Though badly damaged, it fared better than most buildings on the island. The walls were intact, but most of the roof was destroyed, as was the dome.

UTMB physicians tended to the injured. Just days after the storm, a telegram from Beauregard Bryan, a regent of the University of Texas, declared, "The University of Texas stops for no storm." It became a rallying cry for the campus, and two short months after the hurricane, UTMB opened its doors again. In fact, thanks to the UT regents' generosity, UTMB was repaired and restored to be better than ever.

The next decades saw a highly anticipated visit from President Franklin Delano Roosevelt in 1937, and new construction as the medical school outgrew Old Red. Another local disaster, the Texas City explosion in 1947, called upon UTMB physicians to care for about 800 of those who were injured when a ship carrying nitrate-based fertilizer exploded, killing nearly

600 and injuring over 3,000.

Truman Blocker Jr., M.D., a professor and chief of plastic and maxillofacial surgery at the time of the disaster oversaw treatment of the victims.

Blocker became world-renowned for his work with burn victims, much of which was inspired by the victims of the Texas City explosion, still to this day the worst industrial disaster in U.S. history. As a result, Blocker was largely responsible for bringing the Shriners

Hospitals for Children to the UTMB campus in the 1960s, making UTMB the location of the very first of the Shriners' burns institutes. In 1967, the UT regents named him the first president of UTMB. The burn treatment center in John Sealy Hospital, one of the world's leading burn facilities, is called the Blocker Burn Unit.

The mid-1900s represented a bit of a shift in focus for UTMB. Chauncey Leake, Ph.D., became dean of UTMB in 1942 and during his 13-year tenure brought an increased emphasis on research. Leake expanded academic programs on campus and offered increased laboratory space to faculty.

"He really pushed that a medical school is not just a teaching school, it is a research

institution," said Wooten.

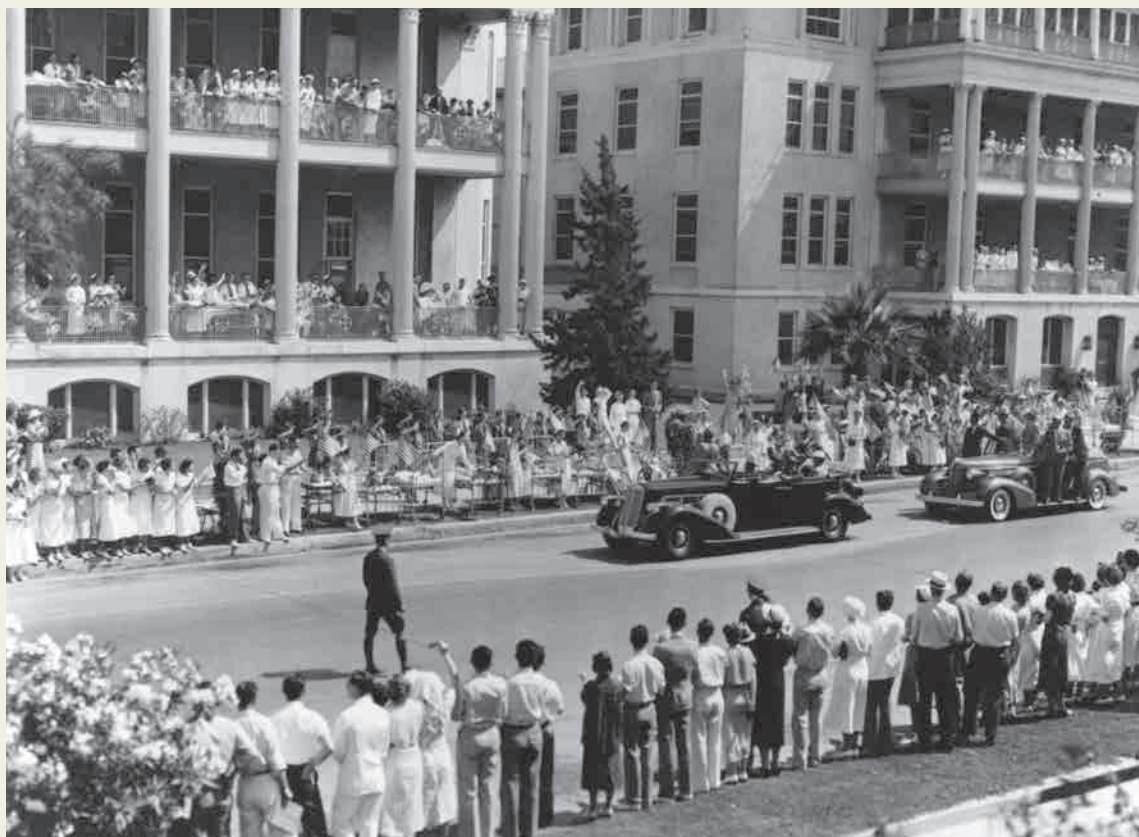
While the expansion of the university brought about exciting developments, it also nearly caused the demise of Old Red. In the 1960s, the building was set to be demolished in order to build a parking lot.

"By the '60s, it was pretty much used for subsidiary offices or storage. It did not have the same importance anymore," said Wooten. "With technology advancing, Old Red couldn't handle it and became obsolete."

Armond Goldman, M.D., a UTMB graduate and professor in the Department of Pediatrics for nearly five decades, recalled the discussion happening at the time.

"The thought was, 'Well, there's this old building here, and we can use it to attract more

**SHRINERS HOSPITAL FOR CHILDREN—  
GALVESTON** opened on the UTMB campus in **1966**



*Medical staff and patients greet President Franklin Delano Roosevelt during his 1937 visit to Galveston.*



As of **2014** UTMB has conferred over  
**38,000 DEGREES AND CERTIFICATES**

patients to come in, so when they park they'll be very close to the campus and hospitals," he said. "I think it was misguided, but I understand."

Outcry from alumni and faculty members, however, was fierce.

"Just about every physician in Texas at that time had gone to UTMB. There were only two medical schools in the state—UTMB and Baylor," said Wooten. "The vast majority had gone to UTMB and took classes in Old Red, so it was like taking a part of their identity, part of their heart."

Goldman echoed those sentiments from the faculty point of view.

"That building held a sort of spirit to the faculty who helped educate in it," he said. "Our species is very interested in symbols. For UTMB, Old Red was the principal symbol and they felt they couldn't do without it."

Through aggressive fundraising, the building was saved and went through extensive renovations in the 1980s, costing a total of \$6.4 million. The Graduate School of Biomedical Sciences and the Institute for the Medical Humanities were moved into the building, which was rededicated in April of 1986. The Institute for the Medical Humanities was first in the U.S. to offer a Ph.D. degree in medical humanities. Wooten later earned her Ph.D.—taking classes in Old Red—and wrote a book about the building's history.

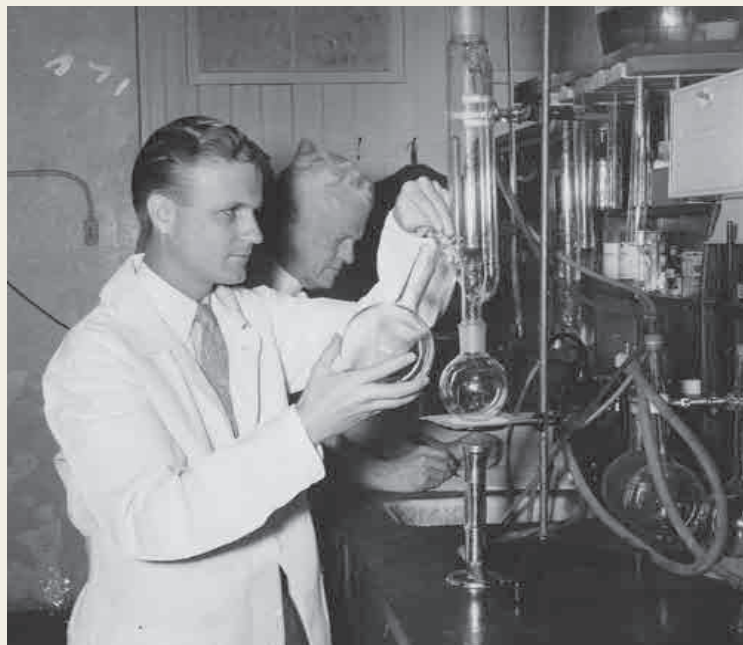
"You're going up this huge cedar staircase. It has all the creaks and everything of an ancient staircase. You're going in these halls that are huge, high-ceilinged, and when you shut the door it reverberates—'boom'. All of that gave

this sense of history to it. You are in a place where so many other people have been."

Thanks to the efforts to save it, Old Red is now a part of UTMB's future, one that continues the legacy of research set into motion by Leake. In 2003, the National Institutes of Health selected UTMB as the site of the Galveston National Laboratory, one of two such laboratories in the United States. It contains Biosafety Level 4 laboratories, where researchers study naturally occurring diseases like SARS, West Nile, and Ebola, as well as countermeasures for microbes that could potentially be used in bioterrorism.

In 2008, UTMB was again devastated by a storm: Hurricane Ike. The storm surge flooded the ground floors of buildings throughout campus, and the amount in damages was astronomical. But again, "The University of Texas stops for no storm." After almost seven years and \$1 billion in repairs and improvements, the campus is thriving once more. A new hospital is under construction, the Jennie Sealy Hospital. Located on the site of the recently demolished Jennie Sealy Building and old Shriners building, it will contain 310 patient rooms and 20 operating suites. The \$438-million facility is expected to be completed later in 2015 and operational in 2016. UTMB recently began operating the Angleton Danbury Medical Center, and will open another hospital and emergency department at its League City location.

UTMB, which will celebrate its 125th anniversary in 2016, has been home to many firsts for the state of Texas—the first



RELEASED ESPECIALLY TO YOU. GRATIS. IF UNABLE TO USE PLEASE RETURN.  
 WILL APPRECIATE TEAR SHEETS. ROSELLA H. WERLIN.  
 GALVESTON, TEXAS. —And bit by bit out of this labyrinth maze of research  
 comes forth findings for advancement of science for the betterment of man-  
 kind— herewith is a typical study as shown by two professors, Doctors  
 J.K. Lamar, front and Willard R. Gooke, rear — carrying on research in their  
 respective fields of obstetrics.

university-affiliated nursing school in the U.S. in 1896, the first female physician to graduate in 1897, the first African-American physician to graduate in 1953, the first school of health professions in the state. Even as the institution looks forward to a future of more innovation and discovery, it remains dedicated to its legacy and storied past.

"We're proud of our legacy," said UTMB president David L. Callender, M.D. "We honor our long history of accomplishment and service by staying focused on the future. The future of health care lies in the hands of people like our researchers, clinicians and educators. Texans are

proud of our heritage and UTMB is an integral part of our state's medical history and future."

"You really don't know who you are unless you know where you've been and where you've come from," added Wooten. "It was all about the patient...All the compassion, empathy, research and burning the night oil was to make this profession an altruistic profession."

That mission of bettering the health of society remains a constant, from UTMB's humble beginnings in that single red building, to the busy, vibrant campus it is today. ■

**“We honor our long history of accomplishment and service by staying focused on the future.”**

— DAVID L. CALLENDER, M.D.  
 President of The University of Texas Medical Branch at Galveston

# UTMB | 125 YEARS OF

*The people of Texas vote to place a state medical school in Galveston.*

1881

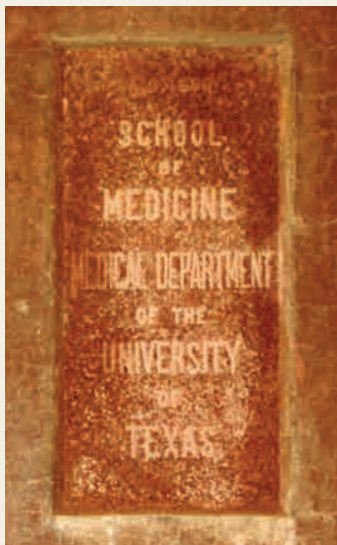


1891

The University of Texas Medical Department opens in Old Red—its first session begins October 5th with **23 STUDENTS** and **13 FACULTY MEMBERS.**

THE NAME OF THE MEDICAL SCHOOL IS CHANGED *from* THE UNIVERSITY OF TEXAS MEDICAL DEPARTMENT *to* THE UNIVERSITY OF TEXAS MEDICAL BRANCH.

1919



1966

**OLD RED** is rededicated after extensive renovations.

*The Galveston National Laboratory—one of only two National Biocontainment Laboratories established by the NIH—is formally dedicated. Shortly after, Hurricane Ike devastates the UTMB campus.*

2007



*Photos provided by the Blocker History of Medicine Collections, Moody Medical Library, The University of Texas Medical Branch, Galveston, Texas and Rosenberg Library, Galveston, Texas*



# MEDICAL EDUCATION



1900

The John Sealy Hospital Training School for Nurses joins UTMB to become the first university-affiliated nursing school in the U.S.

The Galveston Hurricane of 1900 strikes the island, killing thousands and severely damaging Old Red. School was back in session within two months.

1900

NO. 291.  
**THE WESTERN UNION TELEGRAPH COMPANY**  
INCORPORATED  
21,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.  
THOS. T. BOKERT, President and General Manager.

Receiver's No.	Time Filled	Check
ND the following message subject to the terms of the contract hereof, which are hereby agreed to. } SEPTEMBER 12, 1900		
To <i>Prof. Prather - Galveston</i>		
<i>The University of Texas stops for no storm.</i>		
<i>B. Bryan</i>		

SEPT 12 1900 AMSTERDAM

The Texas City explosion, the worst industrial disaster in U.S. history, sends about 800 patients to John Sealy Hospital in a single day.

1947

1960s

**OLD RED** is set for demolition and later saved after outcry from faculty and alumni.



The UTMB fall semester begins with **3,211 STUDENTS** and **898 FACULTY MEMBERS.**

2014

Expected opening of the new Jennie Sealy Hospital.

2016



**HOUSTON MAYOR ANNISE D. PARKER, NOW IN HER THIRD AND FINAL TERM, SAT DOWN WITH TEXAS MEDICAL CENTER EXECUTIVE VICE PRESIDENT AND CHIEF STRATEGY AND OPERATING OFFICER WILLIAM F. McKEON, TO REFLECT ON THE INITIATIVES OF WHICH SHE IS MOST PROUD—FROM INFRASTRUCTURE TO REDUCING THE HOMELESS POPULATION—AND WHAT SHE CONSIDERS HER FAVORITE PLACE IN HOUSTON.**

**Q | Can you tell us about your formative years?**

**Where were you born and raised?**

**A |** I was born in Houston, and both of my parents were born here. My grandparents came to Houston in the 1920s and '30s, so this is home. I grew up in the Spring Branch area, where my mom also grew up. In fact, Beltway 8 goes right through the land where my grandparents had a farm. I have seen many changes in the city over the years.

**Q | What led you to attend Rice?**

**A |** When I was young, we would often take weekend trips to the zoo or just go for a drive. That was what you did on weekends back then. It often led to a trip through the Rice campus. My parents would say, 'If

you're really smart, when you grow up you may be able to go to Rice.' And then they would laugh. We were living out of state when I graduated high school and Rice was the only school to which I applied. I was a merit scholar in high school and I knew I could go anywhere I wanted to go, so I came back to go to Rice.

**Q | Did you know early on in life that you would end up in a career in public service, or were you leaning toward a career in oil and gas?**

**A |** Actually, neither. At Rice, you are expected to have two majors. I ended up with three: psychology, sociology and anthropology. After college, I wanted to go to graduate school. I was going to become Margaret Mead, I guess. Teach anthropology somewhere. I attended

Rice with a full merit scholarship. I wanted to work for a while after graduation so I could make enough money to pay for graduate school. I just never went back. Once you get out of school, it's hard to go back.

I was a shy, brainy nerd—very socially awkward, not unlike a lot of my peers at Rice at the time. My family still can't believe I wound up in politics, because it never occurred to them that would be the direction I would take. My career actually began at Texas Gulf Oil and Gas where I worked for the only woman manager of a Fortune 500 company. The company always hired a lot of Rice students for summer employment.

It was the very early days of those clunky, slow Apple computers. No one I was working with knew how to use them. They asked for volunteers to learn



“My goal is to eliminate chronic homelessness in Houston by the end of 2015. I don’t know if we will get there by then, but I am optimistic that we will be close to having no one on the streets of Houston simply because there is not a bed or social service resource available.”

how to run this new petroleum software program. I was the only one who knew how to do it. Two years later, I was recruited away by another oil company that needed someone with that particular skill. I spent 20 years riding the tech wave in the oil industry, completely accidentally. Always volunteering. I’m willing to go learn that new software program. I ended up doing reservoir mapping, project economics, building spreadsheets on foreign fiscal tax regimes...for over 20 years. That’s important: volunteer to learn something new.

**Q | Tell us about your mentors.**

**A |** Toby Turner, the woman I just mentioned, she was in information services. In the mid-’70s women were either in HR or information services. She helped me professionally, but she also helped me with some personal things. I left that position for a job at Robert Mosbacher’s Mosbacher Energy Company. I spent the next 18 years there.

While I didn’t work directly for Mr. Mosbacher, he had a huge influence on how I approach my current job. It was his company, he knew everybody, he knew their names, he was a walk-around manager. And it was not unhelpful for me, when I ran for public office, to be a Democrat who worked closely for a very famous Republican in Houston. And accidentally, too. So he was not a direct mentor, but a huge influence.

**Q | What is different about the corporate environment early in your career compared to today?**

**A |** As I mentioned, there was a real lack of women in management roles across most industries and certainly very, very few at the C suite level. I really didn’t know any. I think it is better today. There is a lot more outreach. I get regular requests to address diversity groups and women’s groups in major corporations. That was completely nonexistent when my career began. I am now in my 18th year in public life, and it is still one of the most male-dominated professions that exists today. The best elected bodies in the United States are about 20 percent women. As for governors and big city mayors, I think it’s about eight percent right now. There have only been ten women who have been mayors of major American cities with over a million population—two here in Houston. That’s a feat.

**Q | Do you remember the exact moment when you decided to run for mayor?**

**A |** I do. There is a lot of research out there indicating that one of the challenges for women in politics is that we wait to be asked. In the private sector, I was asked

if I wanted to learn that software program. I was asked to run for city council. And I ran against an incumbent, and got absolutely crushed in the election. But I did something that most women don’t do when they run for office and lose, and that is I ran again. And I lost. And then, even rarer, I ran a third time and won. Now I have ran and won nine citywide races in Houston.

I have read a lot of research about that. As it turns out, a lot of the women who persevere in politics have been in sports. That is true for me. I was a jock, I was in track in high school and I played varsity softball in college. I still enjoy sports to this day. Of course, I am a big Rice baseball fan. I like all sports, but most of what I enjoy is attending Rice baseball games. Reckling Park is one of the best places to watch baseball, and Rice has one of the top teams in the country, so it’s good baseball, too.

**Q | Congratulations on recently being named as one of the best mayors in the world! Looking back on your career, what are some of the most significant accomplishments?**

**A |** I was a very active community volunteer for the 20 years before I decided to enter politics. I was a president of this and an officer of that. My evenings were filled with meetings. I helped found a civic association, and I realized I was going to work every day to support my volunteer habits. By becoming a council member, I got to do things every day that I was passionate about. I had a good job, but it wasn’t changing the world. It wasn’t fulfilling. When I became a councilmember, the Mosbacher company offered me a consulting contract, that lasted three months, going back and forth. Being a council member is technically a part time job but I took a full time approach.

Because I entered public service after having been a civic club president and a neighborhood activist, I had a whole list of things that I wanted to work on. My agenda included everything from the pooper scooper ordinance that requires owners to pick up after their pets to regulating ownership of exotic pets. Believe it or not, it used to be legal to own a tiger in Houston. There was no law against it until my ordinance passed. I also authored the ordinance that we use today to regulate density of development in inner-city neighborhoods.

My tenure as city controller was focused on bringing the city of Houston into the modern era. I’m not a techie at all, but I rode the tech wave, so I had an understanding of the power of technology and how rapidly it was changing. When I became a council

member in the early 2000s, the city’s financial systems were still housed on a mainframe computer, held together with duct tape and bailing wire. I was able to lead the city’s massive migration to SAP Business systems. In fact, SAP contacted me after we were done and said it was the most successful municipal migration that they had ever worked with.

As mayor, I have been all about infrastructure. Oddly enough, what I’m most criticized for today is potholes, potholes and potholes. But what people don’t realize is that we had spent 30 years not investing in our infrastructure. We created a new revenue source via the voter approved Rebuild Houston drainage fee. We are now putting more money into infrastructure than ever before, but you cannot recover from thirty years of deferred maintenance overnight. The drought of 2011 didn’t help.

Houston has 6,000 lane miles of road, but if each lane is considered separately, the total is 16,000 miles of road. Utilizing vans equipped with special radar that can detect voids under the road surface, we mapped the entire city. We finished and rolled out the data in June of 2011, just before the drought hit. The lack of rain caused so much shifting we had to start all over again the next year.

Rebuild Houston includes a very good government aspect that I could shoot myself for agreeing to. It is financed on a ‘pay as you go’ basis so there is no more debt financing for any of our street and drainage projects. And yet, here we are today in the cheapest money environment in decades, and I am not allowed to borrow money to do street repair. The new fee gives me \$100 million of additional money a year—more than we have ever spent. As we pay down old debt, more money becomes available. However, I am prohibited from leveraging it. The voter-approved City Charter provision won’t allow it. So we kind of outsmarted ourselves on that.

This commitment to rebuilding our infrastructure is what I am most proud of. We are overhauling the water sewer system. We are overhauling the street and drainage system. Two years from now, the new mayor is going to look like a genius because there will be so much work going on.

I am also proud of the Bayou Greenways initiative. I am just thrilled to pieces about the new hike and bike trails this project is adding along our bayous. It’s a five to seven year plan. Again, we have made a lot of progress, but it will really be about two years after I am out of the mayor’s office before you will really see the impact. It’s more than just trails.



Houston Mayor Annise Parker is pictured with her family on election night in 2009 (left), and with her mother (right). (Credit: Office of the Mayor, Houston, Texas)



Once we reconnect people to the bayous, they are going to want to rip up the cement that lines these waterways. They will want to plant wildflowers. They will want more trees. They will want benches. The end result will be an amazing linear park system that connects our neighborhoods and provides all Houstonians with access to green space.

The other thing that I am really proud of is what we are doing to address homelessness in Houston. Unfortunately, the perception hasn't quite matched the reality for a lot of folks in downtown Houston. The reality is that both transient homelessness and chronic homelessness have been cut in half over the last three years. Our efforts are getting a lot of national attention. In fact, several cities are looking to Houston as the model for how to get it done.

Obviously, we can't force someone into housing who doesn't want it. That is why we have focused a lot on reparative social services for the chronic long-term homeless who have either a mental health issue or substance abuse problems.

My goal is to eliminate chronic homelessness in Houston by the end of 2015. I don't know if we will get there by then, but I am optimistic that we will be close to having no one on the streets of Houston simply because there is not a bed or social service resource available.

**Q | Let's speak a bit now about the Texas Medical Center. What impact does the Texas Medical Center have on Houston?**

**A |** As a destination, as an employer, I think anyone who has been in Houston for any length of time sees it as 'the medical center.' Even if you are going to a particular institution, people say they are going to 'the' medical center. And it is a huge economic engine for Houston.

As a commercial downtown, if you will, it is significant in its own right. It is the single most popular destination for foreign visitors to Houston. If you can imagine pulling that out of Houston and throwing it away. The traffic through our airport system would plummet—the economy of Houston would be fundamentally different. A lot of the diversification we have

seen in the Houston economy since the oil bust of the 1980s has been due to growth in the medical center. The oil and gas industry is less price-sensitive than it was, but the impact of the Texas Medical Center has grown exponentially. I always say the current Houston economy rests on five pillars: oil and gas, medicine, the port, aerospace and manufacturing. We are seeing a manufacturing explosion in other areas. It needs to happen in medicine. You have the research capabilities and the built-in patient population. It is a perfect storm for manufacturing anything from big pharma to biomedical.

Since the founding of Houston, there has been a tradition among the city's business leaders of giving back to the city that has given them so much. This ranges from those who can donate \$50-\$100 million and have huge buildings named in their honor, to those who buy a \$1,000 table at a gala. Houston is not a place that cares where you were born or who your people are. We care about what you have to offer. You can achieve anything here, but to be embraced by Houston society requires a willingness to give.

**Q | What other aspects of the city positively impact our brand?**

**A |** NASA. Our connection to the space program is very much part of our psyche. We all know that 'Houston' was the first word spoken from the moon during the Apollo 11 mission. What many of us forget is the rest of what was said. When I am giving a speech, I'll say, 'Houston' and everyone will answer with, 'We have a problem.' Of course, what was really said was: 'Houston, Tranquility Base here, the Eagle has landed.' 'Houston, we've had a problem up here,' was actually said by the Apollo 13 crew. Of course, Houston had the solution. Solving problems is what we do. It's been that way since the Allen Brother's saw a future in this mosquito-infested swamp, to the discovery of oil at Spindletop, to the dredging of the Port of Houston.

**Q | How do you balance the intensity of your schedule with a family? I imagine you are constantly invited to every event in the city.**

**A |** I get invited to the opening of an envelope. When people talk about work life balance, it's not like you find this magic balance where both get the same amount of attention. It's more like a seesaw. Whatever is in crisis mode gets the attention.

We have a 38-year-old son and three daughters. The girls were adopted when I was running for city controller. They were older, but still in need of all the attention required of parents. Being in the controller's office was very helpful. I was able to be home in the evenings. I went to the games, I went to the dance recitals, I coached little league, I coached T-Ball, and I coached machine-pitch for one year. By the time I was elected mayor, they were high school teens who wanted nothing to do with me.

When I finally get to go home, I dock my phone and unplug. I am not shooting emails out. There are people on my staff who send emails at 2 a.m. I tell them not to bother with it because I'm not going to look at it at that time. There are ways to get a hold of me if there is an emergency.

My favorite place in Houston is home. It's where I putter in the garden or read. So when I am with my family, and I am at home, I am with my family and I am at home. Also, when at work, if the kids or the wife call, I will stop any meeting and take care of that.

**Q | Can you share what's next for you?**

**A |** I have now had the best political job. Having talked to other former mayors who have gone on to other things, they all agree. This is the best job. I believe them. But I will be leaving at the end of this year, and I plan to run through the tape, because there is still a whole lot to get done. I do plan to look for an opportunity to continue to serve—either in a nonprofit organization or in politics. Unfortunately, the positions that I might be interested in either at the county or state level won't be available until 2018, so there is a gap that I am going to have to fill. I'm not interested in going back to the business world. ■



# Bringing Bench Science to the Public

*The Health Museum's newest permanent exhibit is the country's largest and only bilingual immersive science lab experience*

BY NICOLE ZHAO

Extracting giant chromosomes and testing antimicrobials—these are just a few of the activities young and adult visitors alike can do at the DeBakey Cell Lab, The Health Museum's newest permanent exhibit. Visitors will experience a slice of life as a scientist and look the part, too—lab coat and all.

Debating on March 27, the DeBakey Cell Lab features two duplicate labs, with seven cellular-biology based experiment stations each, targeted at visitors ages seven and up. Named

after revolutionary medical pioneer, Michael E. DeBakey, M.D., the exhibit is designed to inspire an interest in science in the public and spark curiosity in young future researchers. Cell Labs exist at museums in Minnesota, Maryland and Colorado, but this \$1.2 million, 2,000-square-foot exhibit is the largest and only bilingual (English/Spanish) museum lab of its kind in the country.

“Everything within the lab is hands-on and they are not designed for you to be successful in every attempt,”

said Adam Benjamin, director of education at The Health Museum. “As with any scientific experiment, it’s about the scientific method. The beauty of this exhibit to me is that the visitors can be successful or [they] can fail.”

Before entering the lab, visitors can learn how to use a microscope, a key piece of lab equipment, and then apply their new skills to examining human and protozoa cells. Inexperienced patrons need not worry—the lab will have three layers of bilingual instruction. Once inside, bilingual computer-guided and text instructions walk visitors step-by-step through each experiment, with staff and volunteers on hand to assist.

Budding scientists can heat-fix and stain cells removed from their own cheeks to study cells’ inner workings at one bench and test the effectiveness of over-the-counter antimicrobials at the next. Other stations invite patrons to investigate how amylase, a digestive enzyme found in saliva, works by watching it break down packing peanuts, isolate a long and visible strand of DNA from a wheat germ, and identify unknown microbes using a chemical test, stain and microscopic examination. At the Blood Bench, visitors can peer at real sheep’s blood through a microscope, measure the proportion of red blood cells and use a simulated blood sample to determine the blood type. At one of the more advanced benches, they can use various laboratory tools to extract oversized chromosomes uniquely found in fruit flies’ salivary glands.

Depending on the age and comprehension level of the visitor, each experiment can take 10-30 minutes to complete. The exhibit’s free form and openness has a “choose your own adventure” feel that allows for a customized and distinct experience each visit.

Supplemental programs to the DeBakey Cell Lab include school field trips, which feature a pre-exhibit class organized by the DeBakey Cell Lab manager, birthday parties for students ten years and older, and a Discovery Camp in which children 11-13 years old can spend a week during the summer getting up-close-and-personal with the DeBakey Cell Lab.

“It’s the most comprehensive Cell Lab that’s out there,” said Benjamin. “There are other incarnations of it, but none of them have the supplemental activities—for example, the birthday parties, the school programs, the bilingual access.”

The DeBakey Cell Lab is The Health Museum’s first permanent exhibit in five years, providing an opportunity for prior visitors to re-engage, as well as attracting new visitors. Located in Houston’s richly diverse Museum District, The Health Museum is an interactive science learning center that aims to help families better understand their bodies, promote healthy habits and inspire awe at the intricacies of biology and medicine.

“We’re a fantastic resource here in Houston, and it’s important that the Houston community knows that The Health Museum is here and utilizes us,” said Benjamin.

Among its many offered experiences are a hands-on walk through the human body and real organ dissections. On Friday, March 27, the museum can add the DeBakey Cell Lab to this list. ■

## General Information:

The Health Museum  
1515 Hermann Dr., Houston, TX 77004  
www.thehealthmuseum.org  
713-521-1515

“As with any scientific experiment, it’s about the scientific method. The beauty of this exhibit to me is that the visitors can be successful or [they] can fail.”

— ADAM BENJAMIN

Director of Education at The Health Museum



The Health Museum's first permanent exhibit in five years, the DeBakey Cell Lab, is the country's largest and only bilingual (English/Spanish) immersive science lab experience. Young visitors to the DeBakey Cell Lab can don goggles, glasses and gloves to use microscopes and conduct authentic cellular-biology-based experiments. (Credit: The Health Museum)





# A Key to Recovery

*A team of passionate and energetic music therapists are out to make a difference through patient care and rehabilitation*

BY AMANDA D. STEIN

Spend ten minutes with Maegan Morrow and you will see how much she truly loves helping people. It's not just in the way her face lights up when she talks about the work she has done over the past 15 years. It's also evident when patients stop her in the hallway for a hug, or offer updates on their at-home therapy sessions.

Morrow is part of TIRR Memorial Hermann's team of music therapists—all trained in utilizing neurologic music therapy techniques to help stimulate speech, increase mobility, and generally improve quality of life for patients struggling to overcome stroke or traumatic brain injury.

It's a lesser-known form of therapy, but growing in popularity thanks to the dedication of those in the field, and high-profile stories like that of Gabrielle (Gabby) Giffords, a former Arizona congresswoman who suffered severe trauma to the left side of her brain after she was shot at a local community event in 2011. Giffords was transferred to Memorial Hermann-Texas Medical Center, then TIRR Memorial Hermann, in the weeks following the shooting, and worked regularly with a team of speech, occupational, physical and music therapists, including Morrow and her colleague Amy Marroquin.

While Giffords still struggles with aphasia—trouble recalling and stringing together words—she is quick to sing along with some of her favorite songs from the Broadway musical, “Annie.” Monica Verduzco-Gutierrez, M.D., Medical Co-Director of the Outpatient Medical Clinic at TIRR Memorial Hermann, and Assistant Professor at The University of Texas Health Science Center at Houston (UTHealth) Medical School, explained how the brain processes language and music.

“Our brains are all very similar, and the language centers for almost everyone are going to be on the left side of our brain, in certain areas,” she said. “There is an area that makes you come out with the word, there is an area that helps you comprehend the word...and for most people, those are on the left side of the brain.

“Music is not just one side of the brain or the other. Music is everywhere in the brain, because music can be so complicated and you have to be able to

understand pitch, intonation, rhythm and the words that are coming through the music. So both sides of the brain process that. And we definitely think that music therapy helps for patients who have aphasia. Particularly for patients who have a musical background, because their brains are more developed towards music. So let's say someone has aphasia or is a little bit paralyzed in an arm, but they previously played the guitar and sang. They have really complex neurons laid down in their brain, and I think they would be more likely to get the movement and words back because of how complex their brain is from being a musician before and their ability to pull language from different areas of the brain through music.”

“I use a technique called music/speech stimulation. And it basically looks like I'm just singing with them, but I am actually stimulating speech from their brain. So I am accessing a different part of their brain to retrieve words. I'm retrieving lyrics instead of proper semantic speech.”

— MAEGAN MORROW

Music Therapist at TIRR Memorial Hermann

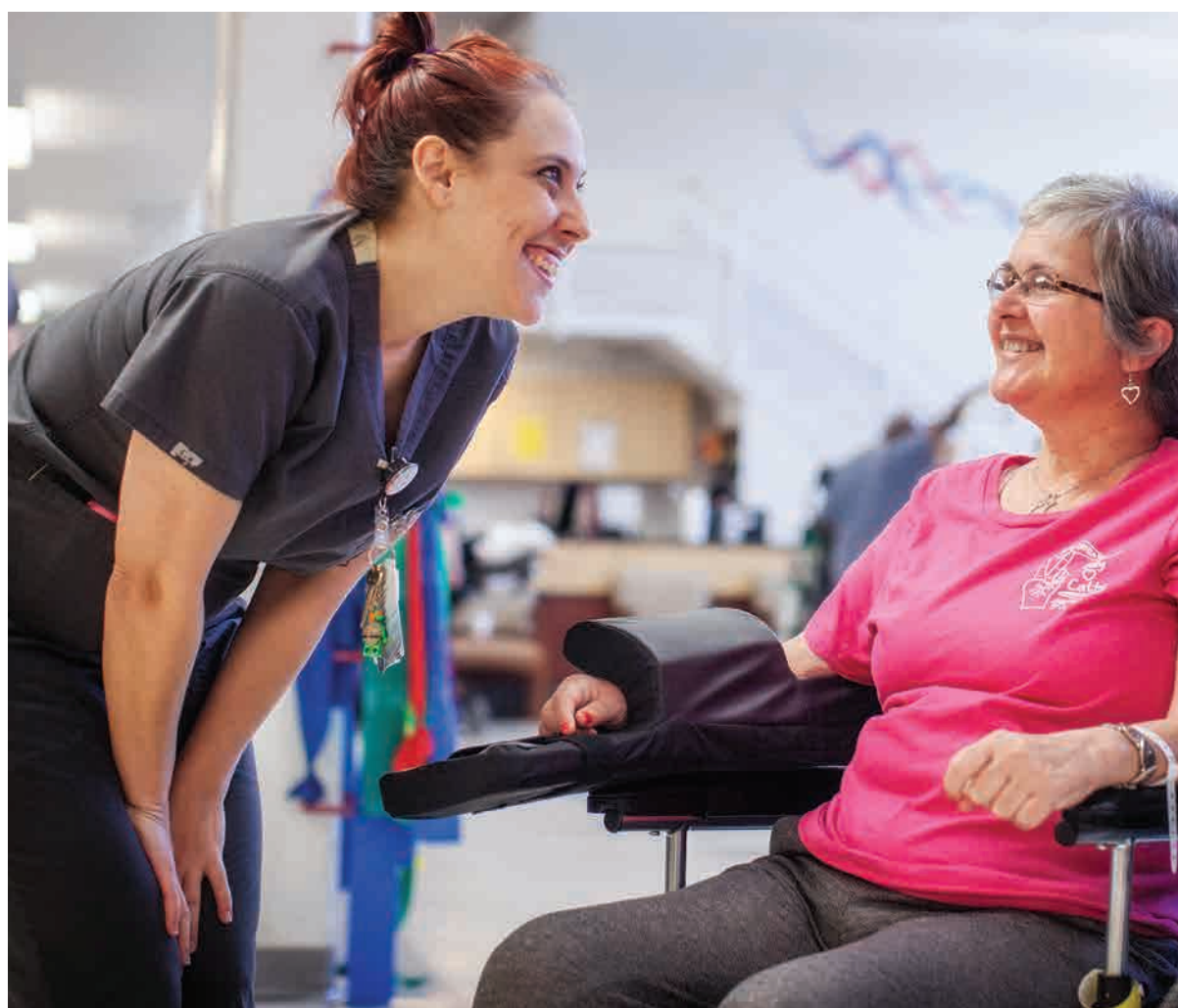




“For us, music was like a key that unlocked the doors inside her head that might otherwise have stayed shut or taken longer to open. Music therapy has unlocked her potential.”

— BILLY FLOWERS

*Husband of TIRR Memorial Hermann Patient Cathy Flowers*



Cathy Flowers, pictured top left with her husband Billy, and bottom with music therapist Maegan Morrow, suffered a debilitating stroke in May of last year. Today she is on the road to recovery thanks to extensive therapy and determination.

Before a massive stroke last year robbed her of speech and mobility, Cathy Flowers was always actively involved with her husband Billy's band—dancing and singing along during their shows and practice sessions. So when Billy was told early on that Cathy's outlook was so dismal that even if placed in a nursing home she would “only be taking up space,” he had a hard time accepting that he would never again enjoy those moments with his wife. So Billy jumped on the opportunity to have his wife transferred to TIRR Memorial Hermann. When she arrived, Cathy was unable to open her mouth and could not speak. Several weeks into her therapy at TIRR Memorial Hermann, Cathy was working with Morrow and Kelly Betts, a physical therapist, when Billy suggested they play a song by Johnny Cash.

“They played the song, ‘Walk the Line,’ and they gave Cathy a fake microphone,” recalled Billy. “And she sat there with Kelly and Maegan and started mouthing the song. As the song went on, she was even singing along with the key chorus. And at the very end, Maegan cut the music off, but Cathy kept on going to sing ‘because you're mine, I walk the line.’”

That day marked a huge milestone in Cathy's recovery. It was so monumental that Billy had shirts made featuring a line from the song's lyrics, “because you're mine, I walk the line.” For Billy, seeing his wife's personality and smile return in the seven months since her stroke has been nothing short of incredible. Morrow feels fortunate to be able to help patients reach those milestones.

“In patients like Gabby and Cathy, who were dealing with aphasia, where they can't get the words out when you ask them a question, spontaneous speech might come out,” she said. “But when I work with them, I use a technique called music/speech stimulation. And it basically looks like I'm just singing with them, but I am actually stimulating speech from their brain. So I am accessing a different part of their brain to retrieve words. I'm retrieving lyrics instead of proper semantic speech.”

Music therapy has also found a home in Children's Memorial Hermann Hospital, where services range from helping children in their pediatric trauma center work through severe burns or brain injury, to facilitating socialization and parent/infant bonding.

“There is almost never a ‘typical’ day for us here,” said Jessica Jarvis, a music therapist at Children's Memorial Hermann Hospital. “And I love it because that means I get to use music in a variety of ways for emotional, physical, cognitive, communicative, and/or social goals. Music is used psycho-emotionally, writing a song to process a death or a traumatic accident. It can be used during the beginning stages



of neuro-rehabilitation for patients with brain injuries to increase awareness and purposeful responses, or, in later stages, in the recovery of motor, communicative, or cognitive skills—like the work done by the music therapists at TIRR Memorial Hermann. Music is also used for pain management, whether it's pain due to the diagnosis, a procedure, or during rehabilitation exercises. The Gate Control Theory of Pain explains how using music, such as playing a drum or singing, creates a type of engagement that lowers the patient's perception of pain.

"An over-simplified explanation of the gate control theory of pain with music therapy is that when we are going through something painful the brain kind of opens up a pathway to perceive and feel that pain," she added. "And in the brain music is a 'large fiber' stimulation that demands our brain's attention as well. Because the brain cannot focus on two things at once it essentially 'shuts the gate' on the pain pathway and lowers the patient's perceived pain. And that works for babies all the way up to adults. So with a therapist engaging the patient in music, the patient can engage in their treatment longer, they can stretch farther, and they may potentially need less pain medication."

The three music therapists at Children's Memorial Hermann Hospital also lead group sessions for infants, school-age children and teens. They work in group activities, through song and instrument play, to provide an outlet for self-expression, develop coping skills, and give young patients some sense of control over their circumstances—control they don't often feel when it comes to their treatment.

"We have a group, Musical Monday, with school-age patients. The main focus is on social interaction for the kids, through interventions that allow for self-expression and opportunities to be successful," said Jarvis. "So they're working on things like turn-taking with each other and following the leader, and getting to assert their own independence with what they want to play and how they want to play it, fast or slow, loud or soft."

"And those do seem, on the surface, like elementary things," added Alyson Ryall, a music therapist and child life specialist at Children's Memorial Hermann Hospital, "but really they go such a long way because these are things that kids don't get to do in the hospital. Jessica is talking about making choices and asserting their independence and expressing themselves. Whereas in the hospital rooms, to take care of their medical needs, they need to be poked and have different medical tests and things, and they don't get to be in charge of that. So these groups are really important."



## GATHERING OF FRIENDS

Late last year, the Institute for Spirituality and Health (ISH) partnered with TIRR Memorial Hermann to host their annual "Gathering of Friends" fundraiser. Former TIRR Memorial Hermann patient and Arizona Congresswoman Gabby Giffords attended the event with her husband, Mark Kelly, and was there to cheer on her TIRR Memorial Hermann therapy team as they received the Caring Heart Award.

The event was capped with a performance of the Annie song, "Tomorrow," by Cantor Daniel Mutlu of Congregation Beth Israel. The song is one of particular importance to Giffords, as her mother would sing it to her often throughout her recovery.

"For almost 60 years now, the mission of the Institute for Spirituality and Health has been 'to increase awareness of the role spirituality plays in health and healing,'" said John Graham, M.D., president and chief executive officer of the ISH. "Our Gathering of Friends Luncheon was a beautiful reflection of our mission. Our time together gave us the opportunity to reflect on the impact of the devastating injury Congresswoman Gabrielle 'Gabby' Giffords sustained and to learn more about the compassionate care she received at TIRR Memorial Hermann was touching. Especially, learning of the role music therapy played in her recovery.

"It was amazing to see Gabby sing the entire song along with the Cantor. That was a spiritual experience for us all. We call them 'sacred moments' where we connect with one another in a deep and profound way."

Also during the ceremony, Kelly offered remarks on Giffords' journey, and the support that helped carry her through. He thanked her team of therapists and caregivers from TIRR Memorial Hermann for their role in helping her to never give up.

"While Gabby would certainly trade her own life to bring back any of those six individuals who died that day, she is incredibly thankful for her life, and her friends, family and caregivers," said Kelly. "Too many to name. People that brought Gabby from that bottom and into the light [...] The power of the human spirit is an incredible thing. To watch how hard people fight to survive, and the fight to come back. I got to see that up close.

"Still today when Gabby goes off to do something, like physical therapy, when she gets in the car, the last thing she will say to me is 'Fight, fight, fight,'" he added. "And I think she learned that from some of you in this room. And she reminds me each day to deny the acceptance of failure." ■



“It’s almost a selfish job, because I love seeing the results with these kids. To see the joy in a mom’s eyes when her child gets up and walks for the first time because it’s easier with music as a stimulation and motivation...I see music therapy making a real difference in my patients. And I just think that’s awesome.”

— JESSICA JARVIS

*Music Therapist at Children’s Memorial Hermann Hospital*

Memorial Hermann was an early adopter of music therapy, having implemented their program more than 15 years ago to support physical, occupational and speech therapies. However, many patients struggle to find access to music therapists once they leave the hospital, or they face insurers unwilling to cover music therapy sessions.

“Unfortunately, they don’t offer music therapy where we are going [after leaving TIRR],” said Billy Flowers. “It seems like music therapy is not a profitable therapy, and so not a lot of folks offer it. I would never wish this on anyone, to have a personal family member go through what Cathy has been through, but if they could see firsthand, they would understand the magnitude of how good this therapy can be.

“For us, music was like a key that unlocked the doors inside her head that might otherwise have stayed shut or taken longer to open,” he said. “Music therapy has unlocked her potential.”

To help better understand the science behind the techniques—which include musical speech stimulation, melodic intonation therapy, oral motor and respiratory exercises, and rhythmic auditory stimulation, among others—and provide some much-needed visibility and support for the field of music therapy—TIRR Memorial Hermann Chief Medical Officer Gerard Francisco, M.D., is overseeing several research projects. TIRR Memorial Hermann has also partnered with Michael Thaut, Ph.D., director of the Center for Biomedical Research in Music at Colorado State University, to bring a music therapist training course to Houston. These are all exciting and promising steps forward for the music therapists who see the results every day.

“We do have a large base of research for music therapy, but we are a new field. That’s what I have gone back to school to do,” said Jarvis. “I am getting my Ph.D. in rehabilitation sciences, so I can learn more about how we can produce the kinds of research that will be generalizable and that we can disseminate so that people can start to take music therapy as a standard part of care.

“It’s almost a selfish job, because I love seeing the results with these kids. To see the joy in a mom’s eyes when her child gets up and walks for the first time because it’s easier with music as a stimulation and motivation...I see music therapy making a real difference in my patients. And I just think that’s awesome.” ■





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DISCOVERIES**

Houston's Texas Medical Center, globally recognized for excellence in adult and pediatric care, should also be known as the destination for hosting medical meetings. Just as the TMC has state-of-the-art medical facilities, our convention campus offers first class meeting facilities. The Greater Houston Convention and Visitors Bureau (GHCVB) has partnered with the Texas Medical Center to provide an unparalleled set of resources to ensure that conventions and special events are a success here in Houston.

How it works: The GHCVB Destination Sales staff will handle all of the logistics and negotiations required for hosting conferences and will work in tandem with the TMC to pair the best professionals for each event.

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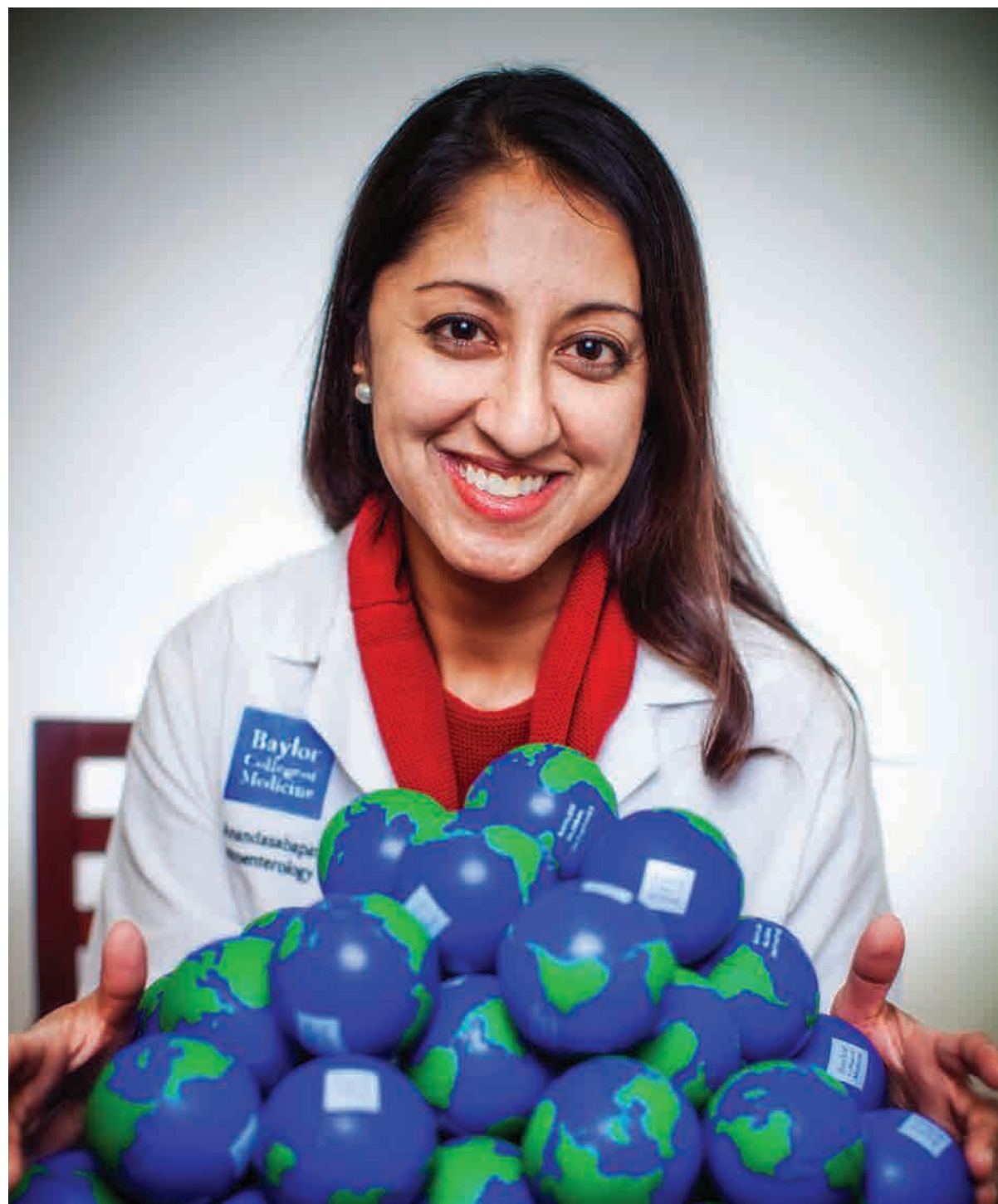
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# Global Perspective

*Through innovation, education and collaboration, Baylor Global Initiatives seeks to transform health and patient care worldwide*

BY SHEA CONNELLY



“There’s a can-do spirit here, and that is perfect because you have to have that spirit to address global health. Otherwise the problems seem so overwhelming.”

— SHARMILA ANANDASABAPATHY, M.D.

*Professor and Director of Baylor Global Initiatives and Baylor Innovation Center*

In the United States, a grave diagnosis—cancer, diabetes, dementia—can bring fear and anxiety, but it’s also often accompanied by a distinct plan for medical care. Chemotherapy, insulin injections, medications—there are strategies for moving forward. In the far-flung corners of the world, however, the story is often different. How can a patient in Sub-Saharan Africa access cancer screening? Will a diabetic patient in northern China be able to regularly check his blood sugar? How will a dementia patient in rural Honduras have access to caretakers if physicians and nurses are scarce? These are just a few of the types of questions Baylor Global Initiatives at Baylor College of Medicine strives to answer.

Health care costs in the U.S. number in the multi-trillions, a number incomprehensible to a large portion of the world. In many under-resourced regions, the health care solutions the U.S. relies upon are simply not feasible. Physicians, nurses and researchers must take a problem that is relatively easy to solve in the U.S. and look at it in a new light. The creativity and collaboration global health problems require led Sharmila Anandasabapathy, M.D., director of Baylor Global Initiatives, to devote her career to looking at medicine on a worldwide scale.

“I went from doing high-tech, high-cost devices in the U.S., to realizing that those approaches and those technologies did not work in other parts of the world,” she said. “If we were going to have any impact on global cancer mortality, we had to change both the devices that we were using and the environment and systems in which those devices were being unfolded.”

Anandasabapathy, also a professor at Baylor and director of the Baylor Global Innovation Center, was formerly Chief of Endoscopy at The Mount Sinai Hospital in New York City. A number of experiences caring for patients in other countries inspired her to globalize her focus.

“We do health care in a very expensive way in this country and it’s not exactly appropriate for other areas,” she said. “If you start with a blank slate, and you have the opportunity to do this in other countries, you actually have the opportunity to be more innovative in your approaches to health care.”

For example, she explained, a procedure traditionally done by a gastrointestinal endoscopist with nine years of experience is not practical in areas of the world where such health care workers are not available. In those situations, creativity is a must and thinking outside of the box can provide solutions that not only



work in under-resourced international areas, but can also be put into practice right here at home.

“You have to think about training other health care workers. You have to think about using software to make the interpretation of images more accessible. You have to think about using wireless or 3G to transmit those images elsewhere for interpretation,” she said. “The wonderful thing about trying to adapt technologies is that you come up with solutions which may not only be suitable for those other parts of the world, but may actually be suitable for the United States.”

With these goals in mind, Anandasabapathy arrived in Houston in July 2014 planning to expand global health offerings both at Baylor and in the Texas Medical Center community overall. Alicia Monroe, M.D., provost and senior vice president of academic and faculty affairs at Baylor, said Anandasabapathy’s recruitment represents Baylor’s added emphasis on global health education and innovation.

“We want to involve our students in thinking about global health and becoming better prepared to be either scientists or health professionals that really operate in a global environment,” said Monroe. “Thinking not just locally about challenges and population health issues but also adding a more global perspective to it.”

To that end, Baylor Global Initiatives recently held its annual Global Health Symposium, which provided a look at some of the projects students and researchers have been working on, as well as discussion of the future of Baylor Global Initiatives.

During her opening remarks, Anandasabapathy outlined some of the innovations that serve as models for the types of projects Baylor Global Initiatives encourages. StepStoneMed, for example, develops tablet and mobile-based educational tools featuring culturally appropriate graphics and language.

She also described a recent project Baylor students and faculty have been working on: the Emergency Smart Pod. Made from shipping containers, which are virtually ubiquitous in many parts of the world, these mobile clinical management units are solar-powered so they do not require electricity. They also have features like controlled-access entry, bar-code scanning systems to use phones and tablets for tracking patients and supplies, and areas for disinfection and donning personal protective equipment.

Baylor recently received a grant from the United States Agency for International Development (USAID) to build a prototype of the Emergency Smart Pod. Baylor is one of 12 recipients awarded grants for responding to President Barack Obama’s challenge to find innovative tools to help with the Ebola crisis.

“Although our focus is on chronic, noncommunicable disease,” explained Anandasabapathy, “that is not exclusive and we are trying to be innovative in other spaces as well.”

As a follow up to the Global Health Symposium, and to further foster innovation, Baylor Global Initiatives will host its first ever Global Hack-a-thon

“If you start with a blank slate, and you have the opportunity to do this in other countries, you actually have the opportunity to be more innovative in your approaches to health care.”

Sept. 18-20 in the TMC|X Accelerator space.

“What we’ll be doing is enlisting some of our global health collaborators from all over—surgeons, obstetricians, anesthesiologists, emergency medical workers—to present a few critical medical problems in specialized areas around the world,” Anandasabapathy explained.

Though participants will know the general topics beforehand, the specific clinical issue will be a surprise. For example, they will be informed of whether it’s going to be related to procedural care, operative care or emergency response, but they will not be told details until the event begins. The hack-a-thon is open to anyone who wants to participate from any background. Whether their expertise is in medicine, business, engineering, or another area, the idea is to provide an even playing field to let participants’ imaginations run wild.

“We’re hoping that over a 48 to 72-hour period we’ll see some amazing questions get answered,” said Anandasabapathy. “This is where you bring your creativity—it’s a completely open, safe environment to let your creative juices run free. We’ll see what they come up with, and I think it’ll be a lot of fun.”

Monroe echoed Anandasabapathy regarding the breadth of experience and knowledge the hack-a-thon is intended to embrace.

“It will allow students from a variety of backgrounds, along with faculty and investigators, to look at large, real-world problems and to begin to think about solutions to real-world problems while they’re still in the midst of their education,” said Monroe. “Thinking not just locally about challenges and population health issues but also adding a more global perspective to it.”

In fact, the hack-a-thon represents what Baylor Global Initiatives aims to do on a larger scale—to unite people from a variety of backgrounds, both in expertise and in geography, with the common goal of improving health throughout the world.

“As a clinician, if you’re not working with biomedical engineers, if you’re not working with competent health care managers, if you’re not working with epidemiologists and public health people, you don’t have the kind of context or support for application of your work,” said Anandasabapathy. “You realize that it’s not just a question of providing medical care to underserved areas, you have to address the problem at a larger scale.”

A hospital in Africa can have excellent physicians, she said, but if the power keeps going out or if there isn’t anyone to properly manage the hospitals from a business perspective, the clinicians will not be able to



*Baylor College of Medicine recently received a grant from the United States Agency for International Development based on their proposal for the Emergency Smart Pod, a portable treatment unit intended to help combat Ebola. (Credit: Baylor College of Medicine)*

work to their full potential. And for Baylor, reaching that potential entails forming partnerships with institutions in the wider global community.

“We’re very much looking to identify a small number of international institutions where we can have both research partnerships and reciprocity with faculty,” said Monroe. “We can have collaborations around teaching and research, and there may be some opportunities for us to provide or share or develop new training models.”

These partnerships will be centered on mutually beneficial, bi-directional learning, and will provide opportunities for student and faculty exchanges.

“We don’t have all the answers,” said Monroe. “There are some countries that have pioneered certain kinds of use of technology that we can learn from with all humility.”

The Texas Medical Center itself is also rife with opportunities for collaboration, and Baylor Global Initiatives is taking full advantage. This includes working with Rice’s 360 Institute for Global Health Technologies to develop novel approaches to cancer screening and imaging, for example, using battery-operated tablets and devices that work on 3G or wirelessly. The idea is to decrease international cancer mortality by enabling earlier detection in places that don’t have electricity or the capacity to support complex devices. These are the challenges on which Baylor Global Initiatives thrives.

“There’s a can-do spirit here, and that is perfect because you have to have that spirit to address global health,” said Anandasabapathy. “Otherwise the problems seem so overwhelming. You have to approach it with that optimism and a sense of challenge and wanting to fix it. I think it’s a great environment. I’m really excited to be here.” ■

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# Lessons in Bioethics

*A new course held by Baylor College of Medicine and Houston Methodist Hospital will offer hands-on practice dealing with complex ethical issues that arise in clinical settings*

BY SHEA CONNELLY

What is the best course of action when a clinician and a patient's family member disagree about a treatment plan? What should a health care professional do if a patient's religion requires abstaining from medically necessary blood transfusions? These are the types of challenging questions health care professionals and ethics consultants face on a regular basis. An upcoming intensive bioethics course sponsored by the Baylor College of Medicine Center for Medical Ethics and Health Policy and Houston Methodist Hospital is intended to provide the training and confidence necessary for those who deal with the complexities of ethical issues in a clinical setting.

The course will be held May 11 through May 15 at Houston Methodist Research Institute and is primarily geared toward health care professionals and individuals who have not necessarily received advanced training in ethics consultation but may be responsible for dealing with such issues at hospitals and medical centers.

"Some of the rural hospitals in particular, where they don't have access to professional bioethicists, frequently ask their clinical staff to do clinical ethics consultation," said Amy McGuire, J.D., Ph.D., Leon Jaworski Professor of Biomedical Ethics and director of the Baylor College of Medicine Center for Medical Ethics and Health Policy. "Their accreditation bodies require something in place to address ethical issues, so people are being asked to do this without the formal training. This is sort of a crash course in how to do it."

Those engaging in clinical ethics consultation also come from a variety of backgrounds, said Courtenay Bruce, J.D., M.A., assistant professor at the Baylor College of Medicine Center for Medical Ethics and Health Policy and course director. "It's a very multidisciplinary audience—physicians, nurses, social workers, case managers, chaplains, just about anybody."

This is the first intensive course of

its kind held by Baylor and Houston Methodist. Though personnel and trainees from the two institutions are eligible for discounted enrollment, the course is open to participants from around the country and is intended to provide a well-rounded, practical look at what ethics consultation entails.

"The real challenge is most of the courses out there, most of the intensive courses, aren't very grounded in what you do on an everyday basis," said Bruce. "They're very theoretical, so they sit there and lecture about various core topics and that's the end of it."

Given that each ethical issue is likely to present unique challenges, discussions of theory, while valuable, will not necessarily provide the confidence necessary to tackle difficult and often emotional conflicts that arise.

"When the pager goes off, that lecture about the core principles of bioethics doesn't get you very far," said J. Richard Cheney, J.D., project director of biomedical ethics at Houston Methodist and course director. "We're hoping to give people an opportunity to practice with each other and with us, and also to foresee some of the kinds of issues an active hospital will probably generate."

To that end, the structure of the course will include an overview of foundational theories and principles, but will also be packed with hands-on workshops and opportunities for debate, analysis and reflection. Participants will practice writing up chart notes and are encouraged to bring examples of cases and policies they have dealt with at their own facilities to help fuel discussion and exercise.

"We are really trying to make it as customizable as we can to each person's needs," said Bruce.

The course itself grew from a need both in the Texas Medical Center and in the surrounding region, where such in-depth lessons are scarce.

"We did some studies about where courses are set up. There were quite



Course directors J. Richard Cheney, J.D., project director of biomedical ethics at Houston Methodist Hospital, left, and Courtenay Bruce, J.D., M.A., assistant professor at the Baylor College of Medicine Center for Medical Ethics and Health Policy.

“The best way you can really improve is to learn from other people who are in the field.”

— COURTENAY BRUCE, J.D., M.A.

*Assistant Professor at the Baylor College of Medicine Center for Medical Ethics and Health Policy*

a few on the east coast, quite a few on the west coast, maybe a few up in the Midwest, but nothing on what I'm calling the third coast," said Cheney. "This is the third coast voice. We are trying to fill a void here, and we hope to continue it."

Bruce added that although the course may be aimed at those with less experience in ethics consultation, participants of all levels of experience are welcome. Health care is a complex and sensitive topic and even the most seasoned ethics consultants can be faced with new challenges.

Even health care professionals who are not directly involved in clinical ethics consultation can benefit from the course. Ethical issues arise all the time in clinical practice, said Bruce, and the course is designed to provide participants with the knowledge and skills necessary to responsibly manage those

issues, whether they are doing so as an ethics consultant or as part of the health care team.

"The best way you can really improve is to learn from other people who are in the field," said Bruce. "Between us there will be ethics consultants facilitating the course who have conducted more ethics consultations than anywhere in the country."

No matter how experienced you are, there is always room to learn more, Cheney added.

"You just have to get your hands dirty, and you have to sort of tussle with each other," he said. "Part of the enjoyment that I've had and will expect to continue to have is I've learned a lot as a result of working on this program. I'm looking forward to the conversations during the course—it's a two-way street." ■

# ACCOLADES



**SUSAN L. GARBER, professor of physical medicine and rehabilitation at Baylor College of Medicine,** was awarded the Eleanor Clarke Slagle Lectureship Award from the American Occupational Therapy Association. The award honors a member of AOTA who has creatively contributed to the development of the body of knowledge of the profession through research, education and clinical practice. Garber is being recognized for her work in advancing the management and education of pressure ulcers, or bedsores. She will receive the award next year and deliver a lecture at the 2016 AOTA conference.

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**GERALD W. PARKER, D.V.M., PH.D.,** vice president for public health preparedness and response at Texas A&M Health Science Center, will serve as an ex officio member of the Blue Ribbon Study Panel on Biodefense. Formed in 2014, the Blue Ribbon Study Panel on Biodefense will evaluate the nation's preparedness against bioterrorism and potentially catastrophic emerging infectious disease outbreaks. Parker holds a doctorate of veterinary medicine from Texas A&M University, a doctorate in physiology from Baylor College of Medicine and a master's degree in resourcing the national strategy from the Industrial College of the Armed Forces.

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**PETER JAY HOTEZ, M.D., PH.D.,** dean of the National School of Tropical Medicine and professor of pediatrics at Baylor College of Medicine, was one of 15 scientists who received the Passion in Science Awards from New England Biolabs. Hotez also is president of the Sabin Vaccine Institute and holds the Texas Children's Hospital Endowed Chair of Tropical Pediatrics. The Passion in Science Awards recognize scientists for inspirational works that crosses into the arts, humanitarian service, environmental stewardship and scientific leadership. Hotez received his award for humanitarian duty.

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**LUCY J. PURYEAR, M.D.,** medical director of The Women's Place: Center for Reproductive Psychiatry at Texas Children's Pavilion for Women and associate professor at Baylor College of Medicine in the Departments of Obstetrics and Gynecology and Psychiatry, was recently inducted into the Greater Houston Women's Chamber of Commerce Hall of Fame. Puryear is also co-director of the Menopause Center, an initiative to improve the health of women as they age. She has been nationally recognized for her work in women's mental health and has educated other health professionals and lay persons through numerous invited lectures, print, and television appearances.

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**LAUREN C. KANE, M.D.,** has joined Texas Children's Heart Center as a new cardiovascular surgeon. Kane is also an assistant professor of surgery and pediatrics at Baylor College of Medicine. Kane's clinical and research interests include the full spectrum of congenital heart surgery, with a particular interest in neonatal palliation and outcomes-based research. She previously served as assistant professor of congenital heart surgery at The University of Texas Health Science Center at San Antonio. She earned her bachelor's degree from The University of Texas at Arlington, and her medical degree from The University of Texas Medical School at Houston.

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**BENJAMIN L. SHNEIDER, M.D.,** was recently announced as the new chief of gastroenterology, hepatology and nutrition service at Texas Children's Hospital. Shneider, whose appointment was effective Jan. 1, was also appointed as professor of pediatrics at Baylor College of Medicine. An internationally-recognized clinician, researcher and expert in diseases of the liver and gastrointestinal system, he has previously held leadership positions at Yale University, Mt. Sinai and the University of Pittsburgh. Shneider's clinical expertise includes liver disease in children with a particular focus on cholestatic liver disorders and portal hypertension.

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**DUCK-HEE KANG, PH.D.,** the Lee and Joseph D. Jamail Distinguished Professor at The University of Texas Health Science Center at Houston (UTHealth) School of Nursing, is among the 20 Outstanding Nurses of 2014 to be honored by the Texas Nurses Association (TNA) District 9 Foundation. She was selected for her outstanding research mentorship of junior faculty, particularly in the area of biobehavioral research. Kang received her Ph.D. in the joint major of Physiological Psychology and Nursing from the University of Wisconsin-Madison. Her research has been focused on biobehavioral research, particularly in the area of psychoneuroimmunology.

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**PATRICIA L. STARCK, PH.D.,** dean of The University of Texas Health Science Center at Houston (UTHealth) School of Nursing, where she also holds the John P. McGovern Distinguished Professorship in Nursing and the Huffington Foundation Chair for Nursing Education Leadership, received the 2014 President's Award from the Texas Nurses Association (TNA) District 9 Foundation. The President's Award is given each year to a leading advocate for nurses and the nursing profession. Starck also serves as UTHealth's Senior Vice President for Interprofessional Education.

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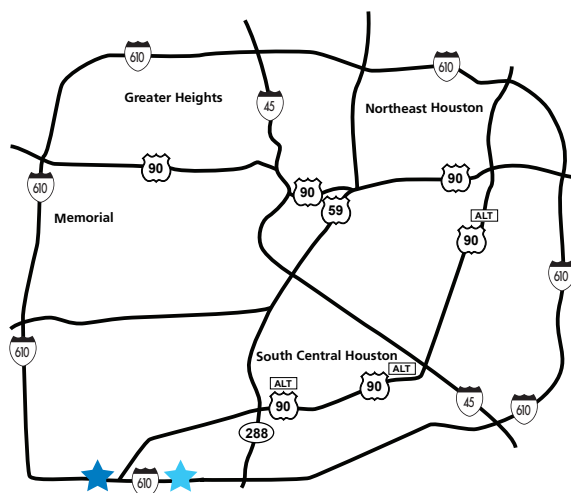
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## Baylor and Miraca Holdings Finalize Joint Venture on Clinical Genetic Testing

**O**n February 2nd, Baylor College of Medicine and Miraca Holdings Inc. finalized a joint venture in which the College will share ownership and governance of its clinical genetics diagnostic laboratories with the Japan-based international health care company that has a focus on clinical diagnostics and laboratory tests.

The name of the new entity is Baylor Miraca Genetics Laboratories. Baylor Miraca Genetics will be built on Baylor's existing Medical Genetics Laboratories, which engages in clinical laboratory genetic testing.

Baylor and Miraca agreed on the terms of the joint venture on Oct. 31, with Paul Klotman, M.D., president, CEO and executive dean of Baylor, and Hiromasa Suzuki, Ph.D., president and CEO of Miraca, signing the documents in Houston. In the weeks that followed, work was completed on the governmental, business and scientific regulatory

approvals needed for closing.

The jointly-owned clinical diagnostic venture will be headquartered in Houston, initially in space in the McGovern Building on the McGovern Campus in the Texas Medical Center, the same location as under Baylor.

"The formation of Baylor Miraca Genetics Laboratories demonstrates the tremendous technologies emerging from The Texas Medical Center and new partnerships with industry. We are delighted that this company will be based in Houston, which is emerging as one of the most exciting destinations for life sciences," said Robert C. Robbins, M.D., president and CEO of the Texas Medical Center.

Baylor has provided diagnostics services for over 35 years and is the number one National Institutes of Health-funded genetics program. It also is home to one of three U.S.-based large-scale genome sequencing centers

funded by the NIH. Baylor will continue to independently drive its genetic diagnostic research agenda and the joint venture is expected to fully support the academic mission of the college's department of molecular and human genetics.

All Baylor faculty involved in clinical diagnostics will remain Baylor faculty members and employees. The college's educational training programs in genetics and genome sequencing will continue operating through a formal academic affiliation with the joint venture, enabling trainees to have an opportunity to expand their laboratory diagnostic skills in a larger enterprise with samples coming from around the world.

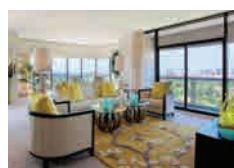
Miraca, a holding company operating in the health care sector, is dedicated to in vitro diagnostic, clinical laboratory testing and other health care-related businesses through its

subsidiaries such as Fujirebio Inc., one of the major domestic in vitro diagnostic reagent manufacturers, and SRL, Inc., the largest clinical laboratory testing company in Japan. Miraca also has the largest U.S. independent anatomic pathology business, Miraca Life Sciences, Inc., headquartered in Irving, Texas, and is continuing to expand its footprint outside Japan. Miraca will provide its experience and capability to commercialize the joint venture. ■

—Lori Williams  
Baylor College of Medicine

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# Rice University Bioengineers Use 3-D Printers to Give Kids a Hand

Rice University bioengineering students, staff and faculty teamed up with Marvel Universe LIVE! and Houston's Shriners Hospitals for Children to offer patients who lack all or part of one hand a free mechanical hand and a once-in-a-lifetime experience.

Volunteers from Rice and the online community e-NABLE, and performers from the Marvel Universe LIVE! show helped patients and their families build mechanical hands using Rice's 3-D printers.

"E-NABLE is a wonderful and inspiring online group of about 3,600 volunteers that I found out about through the 3-D maker community," said Jordan Miller Ph.D., assistant professor of bioengineering at Rice. "E-NABLE community volunteers create open-source designs for mechanical hand assistive devices that can be freely downloaded and 3-D printed for less than \$50 in materials."

**"E-NABLE community volunteers create open-source designs for mechanical hand assistive devices that can be freely downloaded and 3-D printed for less than \$50 in materials."**

— JORDAN MILLER, PH.D.

*Assistant Professor of Bioengineering at Rice University*



Credit: Jeff Fitlow/Rice University

A typical prosthetic hand can cost \$4,000 or more, and patients can out-grow several during childhood.

Kim Harris said the hand that performers, students and volunteers helped her family build will be her son Keith's first prosthetic.

"He's really not eligible for [more expensive prosthetics] because he's six, and he's growing quite a bit," she said.

Keith, who has symbrachydactyly, has part of two fingers on his left

hand. Harris said she believes the new mechanical hand will boost Keith's confidence by making it easier to do things like tie his shoes and carry his lunch tray.

The event allowed patients and their families to meet and work alongside performers from the Marvel Universe LIVE! show. Everyone involved in the build session was also invited to attend the show for free.

"This project is a prime example of

why I chose bioengineering as my major," said Rice senior Kim Le. "I get to interact with people, help them and improve their lives with the work that I've done. To see the children with the hands is an extraordinary experience." ■

— Jade Boyd, Rice University

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### Part-Time

- ER Physicians  
Staffing for the new ETHAN project or Emergency TeleHealth And Navigation.  
Requirement: Two years experience in emergency care.
- Physicians, MD  
Requirement: Two years of experience as a practicing physician in the United States are required.

For more information: [cohcareers@houston.tx.gov](mailto:cohcareers@houston.tx.gov)

# March 2015

5 **Novel Drugs Acting on the Androgen Receptor**  
Friday-Saturday, 12:00 p.m.-3:45 p.m.  
MD Anderson Cancer Center  
6767 Bertner Ave, Mitchell Building,  
3rd Floor  
keldavis@mdanderson.org  
713-563-0603

9-11 **Texas Children’s Hospital International Colloquium**  
Monday-Wednesday, 8:00 a.m.-5:00 p.m.  
6500 Main St  
BioScience Research Collaborative  
cfsmith@texaschildrens.org  
832-824-2574

18 **The Road to the Biologic IND: Best Practices When Filing Biologic Investigational New Drug Applications**  
Wednesday, 1:00 p.m.-6:00 p.m.  
2450 Holcombe Blvd  
TMC|X – Accelerator Space  
chewitt4@its.jnj.com  
415-405-6385

19 **Acute Coronary Syndromes and Pharmacotherapy**  
Thursday, 12:00 p.m.-1:00 p.m.  
1441 Moursund, Room 112  
ghallett@central.uh.edu  
832-842-8387

**Texas Medical Center– Women’s History Project**  
Thursday, 4:00 p.m.-6:00 p.m.  
The TMC Library  
1133 John Freeman Blvd  
phillip.montgomery@library.tmc.edu  
713-799-7145

21 **Houston Global Health Collaborative– Impact 2015 Conference**  
Saturday, 8:00 a.m.-5:00 p.m.  
6970 Firethorn Houston  
Tahani.S.Hamdan@uth.tmc.edu  
409-554-1384

25 **Friends of Nursing Luncheon and Fashion Show**  
Wednesday, 11:30 a.m.  
1600 River Oaks Blvd  
River Oaks Country Club  
tgoodwin@stlukeshealth.org  
832-355-5855

26 **Light Mediated Control of Biology: From Ontogenetic Engineering to Drug Delivery**  
Thursday, 4:15 p.m.-5:15 p.m.  
University of Houston Science & Research Bldg 2 (Main Campus)  
dsalazar@central.uh.edu  
713-743-1345

FOR MORE EVENTS, VISIT [TMCNews.org](http://TMCNews.org)





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Monday, March 2, 9, 16

8 and 9 p.m. – back-to-back episodes

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### Collaborating to Address Health Problems

**Monday, April 27, 3:00 – 5:00 p.m.**

Presentations include:

- The First Annual TMC Policy Institute Health Care Survey: What Patients Really Want in Their Health Care System
- Clinton Health Matters Initiative: Houston and Harris County Blueprint for Action
- Beyond the Headlines: Critical questions on the top of minds of health care executives today

### Chairman's VIP Reception

**Monday, April 27, 5:00 – 7:00 p.m.**

Dr. Robbins, President and CEO of the TMC, invites all MWA attendees for a networking reception following the opening plenary session.

Explore the entire conference program at [medicalworldamericas.com/schedule-at-a-glance](http://medicalworldamericas.com/schedule-at-a-glance)

### Featured Speakers:



**Rafael Grossmann, M.D.**  
Connected Health Visionary  
Attending Surgeon  
Eastern Maine Medical Center



**Sue Siegel**  
Innovation and Personalized Medicine Accelerator  
CEO  
GE Ventures & Healthymagination



**Brett P. Giroir, M.D.**  
Leader in Fighting Ebola and Infectious Disease  
EVP & CEO  
Texas A&M Health Science Center



**Rain Henderson**  
Community and Public Health Champion  
CEO  
Clinton Health Matters Initiative

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