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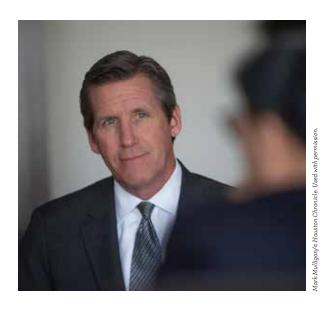


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Tere's a term you might not have heard: "collabatition."

Across the world, institutions that were once rivals are advancing discovery by doing something that might seem counterintuitive. They're collaborating, even as they remain in competition with each other. Hence, "collabatition."

We see emerging examples of collabatition in Boston, where Harvard University and the Massachusetts Institute of Technology joined Los Angeles-based philanthropists Eli and Edythe Broad to launch the Broad Institute in 2004 to advance genomics research. Interestingly, the experts involved maintain their positions at their respective universities while dedicating a portion of their time to the Broad Institute. Similarly, in New York City, a consortium of medical, academic and industry leaders came together to establish the New York Genome Center in 2011 to leverage their collective expertise.

At the Texas Medical Center, historically, we have not been recognized for our collaboration, but this has changed considerably in recent years. Five years ago, and for the first time in our 70-year history, all TMC CEOs and executive leadership came together to form a strategic plan.

Over the better part of a year, the leadership developed a solid plan that identified six key areas that would add value to all institutions and help us all compete on a global scale. The strategic planning committee approved six areas of collaboration:

- 1. TMC Innovation Institute
- 2. TMC Health Policy Institute
- 3. TMC Clinical Research Institute
- 4. TMC Regenerative Medicine Institute
- 5. TMC Genomics Institute
- 6. A new collaborative City Center for Translational Research (TMC3)

The TMC Innovation Institute has been extremely successful, becoming the epicenter for innovation for medical device and digital health startups.

Our partnership with Johnson & Johnson has brought the largest life sciences company in the world to the Texas Medical Center. We built JLABS @ TMC, 30,000 square feet of space dedicated to life sciences startups. Johnson & Johnson leadership were so pleased with their initial experiences that they will soon open their only Center for Device Innovation in the world at the Texas Medical Center.

The Health Policy Institute brings all of the policy experts together from Baylor College of Medicine, Houston Methodist Hospital, Texas Children's Hospital, Rice University, University of Houston, The University of Texas Health Science Center at Houston and The University of Texas Medical Branch at Galveston, among other partners. At a time when the nation's health policies are changing rapidly, the Health Policy Institute has been an anchor, serving as a valuable resource for Houston and beyond as health leaders try to make sense of the shifting policy landscape. This fall, it welcomed some of the country's most well-respected and bestknown health policy experts at a forum attended by 250 people who were eager to learn more about ways to reduce health care costs. We expect the Health Policy Institute to continue to be a valued source of information (and innovation) on this issue and other pressing policy concerns.

We will soon open the TMC Clinical Research Institute, which will provide industry a unified "front door" to the largest research platform on the planet. This platform will accelerate research and access to the latest technologies and therapies to our patients.

The TMC Regenerative Medicine Institute will transform new approaches to disease into clinical practice, while the TMC Genomics Institute will create the world's premier clinical genomics program.

Finally, the TMC³ collaborative translational research campus is deep in the planning phase and awaiting approval by the boards of the founding institutions, including Baylor College of Medicine, Texas A&M University and The University of Texas System. The TMC³ campus will serve as the cornerstone of our collaboration and further distinguish the Texas Medical Center as a global leader in life sciences.

For 70 years, the Texas Medical Center has thrived, as competition among members spawned world-changing innovation. But just imagine what the next 70 years will hold if we maintain that competitive spirit while using our resources to work toward shared goals. Collabatition in medicine is no longer an East Coast phenomenon. I'm excited to see what the future holds as we pursue a new way of doing business here in Texas.

William 7 Myc

WILLIAM F. McKEON President and Chief Executive Officer, Texas Medical Center

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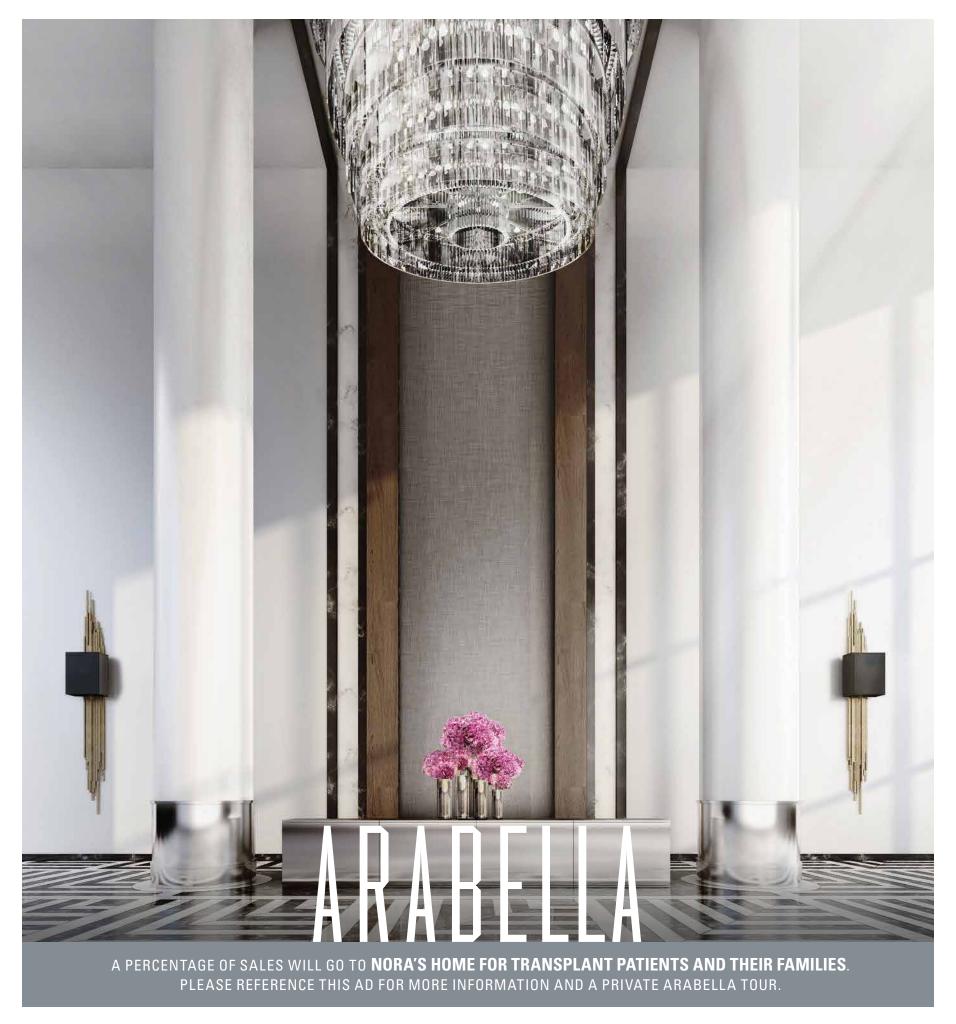
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PLEASE PASS THE CRANBERRIES

The antioxidant-rich food helps the body in multiple ways

BY BRITNI N. RILEY

ranberries can strengthen the immune system, increase bladder health, fight bad cholesterol and maybe even help prevent stomach cancer and other illnesses.

In short, they're more than supporting players in an annual turkey-centric production.

"Cranberries contain high amounts of vitamin C and dietary fibers," said Rachael Vega, dietetic intern at The University of Texas Health Science Center at Houston School of Public Health. "We know that vitamin C is really good for your immune system—preventing the common cold and flu—and fiber is great for keeping your digestive system regular." The fiber, she added, can help lower LDL or "bad" cholesterol.

The tart berries are also known for helping prevent urinary tract infections in women.

"The main bacteria that causes urinary tract infections is E. Coli and cranberries prevent the E. Coli from attaching to the cells on the urinary tract," said Larissa Grigoryan, M.D., assistant

professor of family and community medicine at Baylor College of Medicine.

Although antibiotics remain the most effective course of treatment for urinary tract infections, researchers are eager to find alternative treatment options because of the growing risk of antibiotic resistance. The World Health Organization maintains that antibiotic resistance is one of the biggest threats to global health, food security and development today.

"There still needs to be a lot of work done on the active ingredients of cranberries,"
Grigoryan said. "We know they are packed with antioxidants and proanthocyanidins—the active ingredient that prevents bacteria from sticking to bladder cells. All of the studies that have been done to learn more about the preventative properties of cranberries have used different cranberry products and very different study populations, and have come back inconclusive."

Some researchers believe the special properties of cranberries might be able to prevent stomach cancer and

"Because cranberries have a compound that can basically block bacteria from attaching, researchers are now looking at whether it helps prevent bacteria from attaching with other illnesses like HPAI [highly pathogenic avian influenza] in your stomach or candidiasis [a fungal infection] in your mouth," Vega said.

Cranberries come in many forms—fresh, frozen, juice, tablets and canned.

"Fresh or frozen cranberries are the best to buy," Vega said. "Frozen fruits and vegetables are picked at their prime and then they are flash-frozen. They don't lose nutrients and they usually do not have added sugars."

Although cranberry juice is a very popular option year-round, Vega suggests using caution when heading to the juice aisle.

"A lot of times with cranberry juice, all of the dietary fiber is gone," she said. "Juice has a lot of added sugar which can be bad for weight gain, cardiovascular health, diabetes and a number of different things."

But canned cranberries are a healthy, storebought option, according to Vega.

"Canned is great," she said. "It's kind of a similar thing to frozen and it can be a more affordable way for people to get fruits and vegetables into their diets. The main thing you want to watch out for is that the canned cranberries are in water and not a sugar syrup."

Vega has a few suggestions on how to incorporate cranberries into your diet.

"Throwing frozen cranberries into your smoothie in the morning or adding dried cranberries to your oatmeal is a great way to start," she said. "Making your own cranberry sauce at home for Thanksgiving can be really fun and a healthier option than buying store-bought."

For an easy-to-make cranberry sauce this Thanksgiving, Vega recommends mixing fresh or frozen cranberries in a saucepan with orange or lemon, and cooking over low heat. Once the cranberries have cooked down, mash them and add a dash of honey for sweetness.







human health care

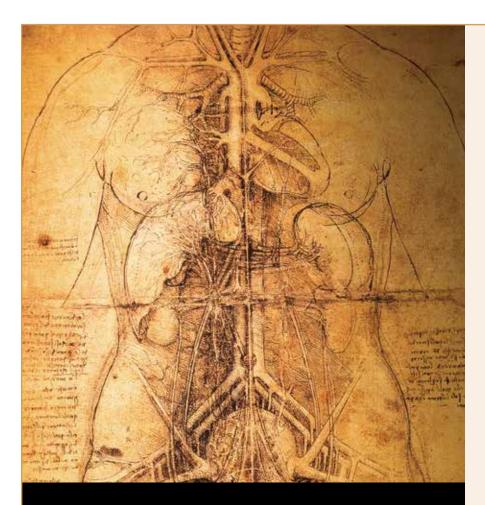
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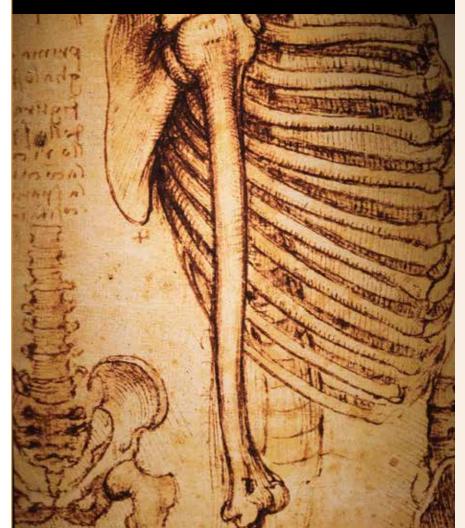
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CURATED

The Intersection of ARTS and MEDICINE

By Britni N. Riley



Leonardo da Vinci was so much more than the painter of the Mona Lisa and The Last Supper.

The curiosity and passion of this Renaissance man extended beyond art to mechanics, geology, music, optics and anatomy. All of his work was grounded in a keen understanding of proportion and the mathematical complexities of the human form.

Reproductions of many of da Vinci's works and inventions are on display at *Da Vinci: The Exhibition*, at Moody Gardens in Galveston through Jan. 7, 2018.

"Many people think of da Vinci as an artist or a scientist without putting the two side by side," said Ashley Tompkins, Moody Gardens public relations coordinator. "This exhibit chronicles his entire life. We have sketches of anatomy next to his artworks and inventions."

Da Vinci was born in Florence, Italy, in 1452 and died at Clos Lucé, France, in 1519, at age 67. Without access to the X-ray machines and MRIs we have today, da Vinci satisfied his boundless curiosity about the inner workings of the human body by performing dissections.

"Da Vinci dissected and sketched some 30 men and women of varying ages, some healthy and some diseased," Tompkins said. "Through these dissections, he learned more about how the body worked as a machine. Many of his findings have led us to the medical knowledge we have today."

The exhibit includes several reproductions of da Vinci's anatomical sketches, including his most famous, Vitruvian Man (1490), which depicts a man in two positions: standing with his arms extended in a square, and also with both arms and legs outstretched in a circle. The sketch is based on the work of Vitruvius, a Roman architect from the first

Da Vinci dissected and sketched some 30 men and women of varying ages, some healthy and some diseased. Through these dissections, he learned more about how the body worked as a machine.

- ASHLEY TOMPKINS
Public relations coordinator
at Moody Gardens

century B.C. who drew anatomical sketches outlining ideal human proportions. Da Vinci's version highlights the center of the body in proportion to the square (the genitals) and the circle (the navel), suggesting that the body's natural geometry points to both procreation and creation.

Da Vinci's other anatomical sketches show his understanding of human organs, bone structure and the effects of aging on the body.

Visitors to the traveling exhibit will also see replicas of da Vinci's paintings and many of his inventions that inspired modern technology.

"I don't think da Vinci had any boundaries," Tompkins said. "He was interested in many things and he pursued them all—from exploring flight studies and hydraulics to inventing a life preserver and a catapult, from planning a modern city to studying anatomy and fine art."

Moody Gardens is located at 1 Hope Blvd. in Galveston. Da Vinci: The Exhibition is a traveling exhibit developed by Aurea Exhibitions and produced by Imagine Exhibitions, Inc. Information: 800-582-4673 or moodygardens.com.



Left top and bottom: Copies of anatomical sketches by Leonardo da Vinci are on display at Moody Gardens. Above: A reproduction of da Vinci's Vitruvian Man hangs in the exhibition.

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Tricking Cancer

Houston Methodist researchers receive nearly \$16 million from the U.S. Department of Defense to battle metastatic breast cancer

By Shanley Chien

A multidisciplinary team of researchers and clinicians at Houston Methodist received nearly \$16 million from the U.S. Department of Defense's Breast Cancer Research Program to fast-track a revolutionary new drug that could potentially provide a long-term cure for metastatic triple negative breast cancer (TNBC).

Nanoscientist Mauro Ferrari, Ph.D., president and CEO of the Houston Methodist Research Institute, and his team of biologists, clinicians, pharmacologists and engineers, have spent seven years researching and developing a nanoparticle drug—an injectable nanoparticle generator polymeric doxorubicin, known as iNPG-pDoxthat tricks metastatic growths into producing tumor-killing agents.

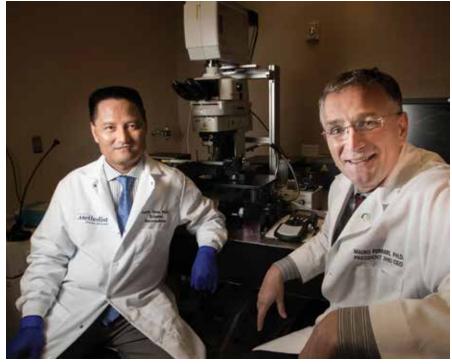
In preclinical cases, iNPG-pDox cured an unprecedented 50 percent of TNBC with metastases to the lung and liver in mice models. If these results successfully translate to humans, Ferrari explained, that would be equivalent to approximately 24 years of longterm, disease-free survival. Although the other half of the cases were not cured, the drug was still able to shrink metastatic tumors, allowing the mice to live three times longer.

"By having an impact on liver and lung, we could literally save the majority of metastatic patients. Nobody has ever cured metastatic disease, so this is an exciting opportunity," Ferrari said.

A painful journey

Breast cancer is the second most common cancer in women, behind skin cancers. The American Cancer Society estimates approximately 252,710 new invasive breast cancer cases and about 40,610 deaths each year.

Because of increased awareness,



Haifu Shen, M.D., Ph.D., a lead scientist at Houston Methodist, with Mauro Ferrari, Ph.D., president and CEO of the Houston Methodist Research Institute.

66 The reason we got to this point is because we were able to observe 25 years of failures. Failure is feedback. If you can find a way not to get too depressed about all of that feedback, then you can learn. 🤊 🤊

> - MAURO FERRARI, PH.D. President and CEO of the Houston Methodist Research Institute

early detection and more advanced therapies, the survival rates for female breast cancer patients steadily improved between 1989 and 2015. Stage o or stage I breast cancer patients have nearly a 100 percent 5-year survival rate. Stage II patients have a 93 percent 5-year survival rate. And stage III patients have a 72 percent 5-year survival rate. However, once the cancer has metastasized to other parts of body (such as the lungs, liver and brain), the

5-year survival rate drops to 22 percent.

Chances of survival are much bleaker for patients with metastatic TNBC, a more aggressive form of breast cancer that has a higher recurrence rate after treatment. TNBC is called "triple negative" because it tests negative for estrogen receptors, progesterone receptors and human epidermal growth factor receptor 2. These receptors are responsible for the growth of most breast cancers and are often what doctors target to treat the cancer. Because they are not present in TNBC patients, treating their cancer is akin to taking a shot in the dark.

"It is a particularly painful journey for patients," said Jenny Chang, M.D., director of the Houston Methodist Cancer Center. "For a long time now, we've been trying to find out what really drives triple negative breast cancer. We've had some successes, but by and large, even today, the only treatment for triple negative breast cancer is chemotherapy. Once it's metastatic, it's still largely incurable."

Even immunotherapy drugs, although promising, are not the holy grail for metastatic TNBC patients.

"If they work, they will work very well. They can significantly and dramatically extend a patient's life, but they are only helping a very small number of patients," said Haifa Shen, M.D., Ph.D., a lead scientist at Houston Methodist in the department of medicine. "Now, with iNPG-pDox, we are talking about the vast majority of patients who are still not being properly taken care of. There's a major task ahead of us in cancer treatment."

As metastatic tumors grow and evolve, the layers of biological barriers (circulation, tumor microenvironment, cells and organelles) that direct the traffic of cells, molecules, nutrients and metabolites in the body mutate. This changes how the barriers function and redirects chemotherapeutics away from normal pathways, weakening the potency and efficacy of the drugs that do make it to the tumor site. Because the chemotherapeutics cannot completely wipe out the cancer in this fashion, tumor cells repopulate and develop a therapeutic resistance.

"It turns out that [getting through the barriers] requires multiple actions, one after the other, to open the different doors to get into the room that gets into the room. The doors are very smart and very difficult to negotiate," Ferrari explained. "The question is finding a sequence of magic keys that will get you in."

For the past 25 years, Ferrari has dedicated his career to identifying those "magic keys."

"The reason we got to this point is because we were able to observe 25 years of failures. Failure is feedback. If you can find a way not to get too depressed about all of that feedback, then you can learn," Ferrari said. "We learned that no chemotherapeutic agent—the traditional medicines—can cure metastases. No biologically targeted therapeutic agent—the newer generation of monoclonal antibodies—can cure metastases. We know that [drug-loaded] nanoparticles don't cure metastases."

Knowing that simply loading drugs into nanoparticles and delivering them to the site of the tumor is ineffective due to the biological barriers, the scientists were forced to rethink their approach.

Then came the breakthrough: Trick the cancer into making the nanoparticles inside the tumor.

Ferrari and Shen created discshaped silicon microparticles that were loaded with strands of molecules, called polymers, which were infused with doxorubicin, a commonly used chemotherapy drug to treat cancer.

Once injected, the silicon particles converged at the site of the tumor and slowly dissolved, releasing the doxorubicin polymers into the watery environment that surrounds tumor cells. The doxorubicin polymers then bundled together like a ball of yarn and were

absorbed by the tumor cells.

Ferrari and his team likened the drug to the mythological tale of the Trojan horse. Instead of attacking the walls of Troy, Greek soldiers constructed a large wooden horse that smuggled them into the city for a strategic strike in the heart of Trojan territory. The silicon nanoparticles functioned like Trojan horses. By mimicking endosomes, which are organelles that regulate the traffic of protein and lipids into cells, the nanoparticles were able to pass through the cell membrane and deliver the highly potent payload of doxorubicin directly to the nucleus, effectively destroying the tumor cell.

The result? Half of the TNBC mice with lung and liver metastases were cured. The other half saw tumor shrinkage.

"The day [Shen] walked into the office and said, 'Look what this is doing to the mice. These mice are refusing to die,' that's transformational. From that day on, life became a mission," Ferrari said. "From the moment you realize you have in your hands something that can transform cancer care, curing people who otherwise could not be cured, then it's no longer a job. ... All of a sudden, it becomes a mission. It's ministry."

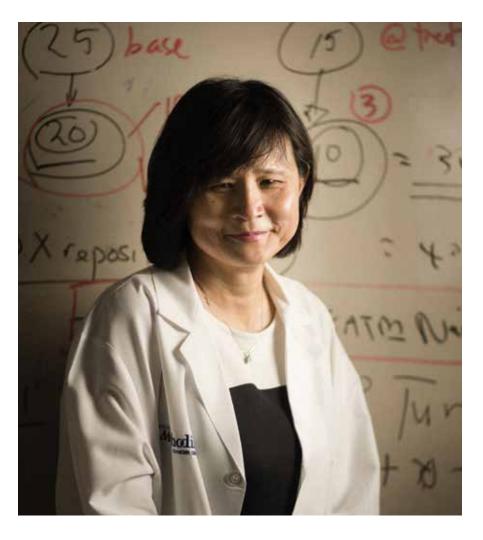
Cycle of a cure

Ferrari and Shen published their findings in the March 2016 issue of *Nature Biotechnology*. But bringing viable treatments from bench to bedside is a painstakingly arduous process that typically takes close to 17 years and costs billions of dollars.

"If I find a new treatment, to be very blunt, it doesn't benefit the patient at all. By the time the cancer is diagnosed, the patient's not going to be there anymore," Chang said.

(continued)





But thanks to the Department of Defense's grants and the Good Manufacturing Practices facility housed within the Houston Methodist Research Institute, Ferrari and his team will be able to accelerate the process of completing safety studies, filing an Investigational New Drug application with the U.S. Food and Drug Administration (FDA) and conducting Phase I and II clinical trials with 46 metastatic TNBC patients within four years.

"With all the different treatments we have—be it immunotherapy, targeted therapy, chemotherapy we prolong life, but we do not cure.

If the delivery works, it will genuinely be revolutionary.

— JENNY CHANG, M.D.

Director of the
Houston Methodist Cancer Center

If we're able to cure half the women with TNBC, it's something that we will prepare, package and go to the FDA to ask for expedited approval. Therefore, we would be able to offer it to women quickly," said Chang, who will lead the clinical trials. "If the delivery works, it will genuinely be revolutionary."

The results of the preclinical trials have given the scientists good reason to hope that there finally will be a cure for metastatic breast cancer and that women can be saved from the devastating side effects of traditional cancer treatments. If the drug proves to be as effective in curing humans as it was in curing mice, Ferrari and his team believe it could open the door to a whole new world of cancer therapy for other types of cancers, as well.

"Very few times in life do you have a chance to take a shot on goal, but when the ball is there and the goal is there, you have to take it," Ferrari said. "You cannot shy away. You have to kick it as hard as you can."



маме: Stephen Incavo, M.D.

occupation: Orthopedic surgeon and section chief of adult reconstructive surgery at Houston Methodist Orthopedics & Sports Medicine

INTEREST: Clarinet

hen Stephen Incavo, M.D., isn't performing joint reconstructions or hip and knee replacement surgeries, he can be found practicing one of Carl Maria von Weber's concertos on his clarinet. For Incavo, music is a release from the stress of his job.

"I'm a very intense guy when it comes to surgery," Incavo said. "Surgery is a big deal and I want to make sure it's a big deal. I don't like to minimize it by saying, "This is an easy case."

The Rochester, New York, native first picked up the clarinet in fourth grade, when his teachers introduced students to music classes. Never one to shy away from a challenge—even at a young age—Incavo quickly became enthralled by the discipline and hard work that was required to hone his musical talent.

"Some kids don't like practicing, but I always did," he said.
"Improving, learning new things and hearing the sound, I always liked that."

Incavo continued to practice the clarinet throughout his childhood. He joined his college's orchestra as principal clarinetist and often performed in jazz groups and dance bands in medical school to earn a little extra money on the side. However, as his medical career became increasingly more demanding, it became difficult for him to find time to practice the clarinet. But his passion for music did not die.

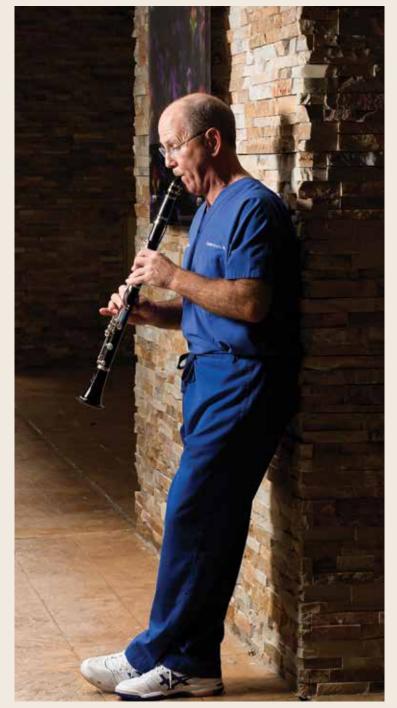
"If there's music in the background playing somewhere, I'm usually listening to that more than the conversation around me," Incavo said. "It just grabs me."

Incavo reconnected with his love for music in 2011 when the Texas Medical Center Orchestra held open auditions. He dusted off his clarinet and began taking lessons again. Since then, he has played in several performances around the Houston area, including the Margaret Alkek Williams Crain Garden Performance Series at Houston Methodist and recitals at the University of St. Thomas.

He spends at least an hour each day practicing clarinet. While it's important to master the musical pieces, Incavo said, it's equally important to continue to master the basics. For woodwind or brass instrument players, the most important basic technique to practice is long tones, a breathing exercise in which a note is played and sustained for an extended period of time, slowly transitioning to a higher or lower note or scale. The goal is to maintain mellifluous and controlled sound on the instrument in a single breath.

"Practice can be kind of boring," Incavo said, "but it's what you need to do to keep up."

In 2015, Incavo released his first CD, *The Colorful Clarinet*, a compilation of three solo clarinet pieces and a duet. The album opens with Incavo's personal favorite, "Fantasia da Concerto on Verdi's 'Rigoletto," one of 19th-century Italian composer Luigi Bassi's 15 operatic fantasies. Bassi composed the



If there's music in the background playing somewhere, I'm usually listening to that more than the conversation around me. It just grabs me.

piece with fast notes specifically to demonstrate a clarinetist's virtuosity and technical abilities, a trend that was popular in his day.

"It's a really hard piece, a very technical piece," Incavo said. "I figured I wasn't going to get it any better than that, so I decided to record it."

Incavo released his second

CD, The Colorful Clarinet
Duets, earlier this year, and he is
currently working on a third CD
featuring a string quartet. He
is also preparing for upcoming
appearances in Houston. He will
be part of a Johannes Brahms
quintet that will perform in
Crain Garden in December.

BY SHANLE!

TMC>PULSE | NOVEMBER 2017 13

Let's Talk

Psychiatrist Walter Baile aims to improve the way doctors deliver bad news to patients

By Ryan Holeywell

ancer treatment is advancing quickly, thanks to innovations like personalized medicine and immunotherapy, but some doctors are working to improve treatment through a decidedly low-tech technique: stronger communication.

A growing body of evidence shows patients do better when they feel their doctor is a true partner in their treatment. One way doctors can show that connection is by taking a more deliberate approach to the way they speak and interact with patients, said Walter Baile, M.D., a psychiatrist at The University of Texas MD Anderson Cancer Center.

"In times of crisis," Baile said, "that relationship counts as much as a clinician's technical ability."

Baile directs MD Anderson's Interpersonal Communication and Relationship Enhancement (I*CARE) program, which aims to train health care providers in managing their interactions with patients and their families.

Though one might assume cancer doctors would be expert communicators—particularly when it comes to delivering bad news—many of them aren't, and most have not had specialized training to handle such pivotal moments, Baile and other experts said.

Doctors need training in how to have difficult conversations with patients—such as explaining a patient's cancer has had a recurrence—and how to interact with patients who are having strong emotional reactions, such as crying or getting angry, Baile said. He recently co-chaired an expert panel convened by the American Society of Clinical Oncology that developed national guidelines to improve the way doctors communicate with patients.

"The relationship between the clinician and the patient can be a very therapeutic one," Baile said. "When we provide appropriate hope and we're honest, in the context of that relationship, the patient can feel supported."



In recent years, health care providers have worked to improve communication in a more direct sense, by making sure patients understand which medicines to take or how to follow post-surgery recovery instructions. But Baile and his ilk are focusing on the nuances of more personal exchanges.

Nationwide, those efforts are increasing—and they extend beyond oncology. The trend is driven largely by evidence that communication has a huge impact on health care outcomes and patient satisfaction, said James Tulsky, M.D., who chairs the department of psychosocial oncology and palliative care at the Dana-Farber Cancer Institute in Boston.

"It's just a very different way of approaching a conversation," said Tulsky, who co-founded VITALtalk, The relationship between the clinician and the patient can be a very therapeutic one. When we provide appropriate hope and we're honest, in the context of that relationship, the patient can feel supported.

— WALTER BAILE, M.D.

Professor of behavioral science and psychiatry at
The University of Texas MD Anderson Cancer Center

a nonprofit that aims to improve the way clinicians communicate with patients about serious illness. "Physicians realize the patients will open up more. They feel connected to the patient, and they realize the conversations are easier."

The trend coincides with growing recognition of the value of palliative care, but in some cases it is also tied

to funding. The federal Centers for Medicare and Medicaid Services, for example, use consumer surveys to measure how patients perceive their hospital experience. That information plays a role in determining how hospitals are paid, so health care providers have a stake in ensuring patients feel their doctors are valued partners.

Locally, Baile has provided

communications training to renal medicine fellows at Baylor College of Medicine. As part of a separate effort, more than 400 doctors working in the Memorial Hermann Health System recently underwent "patient experience training." The goal was to offer health care providers the tools they need to connect with patients, with a focus on compassion and empathy, said Matt Harbison, M.D., a leader in physician training with Memorial Hermann's physician network.

His training emphasizes that doctors should avoid "doc speak," a best practice that others recommend, as well.

"When I talk about blood pressure, I talk about garden hoses," Harbison said. "That makes a better connection. It's something [patients] can really understand."

The training also urges doctors to "be in the moment" when seeing patients, especially during difficult conversations.

Figuring out how to have a challenging conversation with a patient is, in some ways, similar to figuring out a complex procedure or operation, Baile said. Doctors must plan carefully and draw from proven strategies. And the stakes are high, since research indicates patients with serious illnesses suffer when their health care providers communicate poorly.

Baile and his colleagues urge doctors to avoid common pitfalls, like speaking in overly optimistic terms for fear of upsetting patients. Research actually shows that discussing a patient's prognosis doesn't harm his or her relationship with the doctor and may even offer some peace of mind, even if the outlook is poor. The goal is to find ways of being open and honest with patients without traumatizing them, Baile said.

In addition to researching the best ways to communicate with patients, Baile and his colleagues are studying the best way to teach those skills to other doctors. Lectures and videos don't work, Baile said. Instead, doctors need to simulate the interactions they have through role-playing. That includes interacting with simulated patients, who may provide candid, surprising feedback. "It may wake them [doctors] up to things they haven't been doing well," he said.

Another technique involves teaching physicians "talking maps," or standardized guides to conversations around difficult topics. Baile, for example, is part of a group that developed SPIKES, a method for breaking bad news to cancer patients in six steps: from setting up the patient interview to asking if the patient is ready to discuss a treatment plan.

Baile points to an oncology fellow he recently observed who shared detailed results of a CT scan with a patient, quickly overwhelming her with information. A better approach would have been asking the patient if she wanted to see the CT scan results, and then thinking carefully about how to explain them. Some patients might not want to see that information at all.

Baile also encourages oncologists to find ways of addressing patients' most pressing concerns. Instead of simply asking, "Do you have any questions?" for example, he encourages them to say something like, "Can you tell me your biggest concerns?" Doing so is important, since patients with unaddressed concerns are more likely to become depressed, he said. He urges doctors to learn ways of finding out what patients want, rather than assuming—particularly when it comes to end-of-life care.

"Some patients don't want to continue therapy because it's toxic, and their quality of life is poor," Baile said. "We don't need to emphasize our agenda to the patient; we need to understand their concerns, needs and desires."

Six Steps for Delivering Difficult News

Walter Baile, M.D., and other physicians developed SPIKES, a six-step process for delivering difficult news to cancer patients.



SETTING UP the Interview

Physicians should review their plan for telling the patient the bad news and think about how to respond to the patient's reactions or questions.

Sit down, involve loved ones and arrange for privacy.



Assessing the Patient's PERCEPTION

Before discussing medical findings, the clinician should ask open-ended questions to ascertain how the patient perceives his or her situation. For example, "What is your understanding of the reasons we did the MRI?"



Obtaining the Patient's INVITATION

Most patients want full information about their diagnosis, prognosis and illness, but some don't. Physicians can ask questions such as, "How would you like me to give the information about the test results?" If patients don't want details, the physician should still offer to answer questions in the future.



Giving KNOWLEDGE and Information to the Patient

Physicians shouldn't simply deliver the bad news; they should first warn that they are about to deliver bad news, in order to reduce the shock. Doctors should use nontechnical language, avoid excessive bluntness, and provide information in small pieces, checking to make sure the patient understands.



Addressing the Patient's EMOTIONS with Empathic Responses

Patients may react with shock, isolation and grief after receiving bad news.

The doctor should offer support and solidarity and acknowledge those feelings by saying something like, "I can tell you weren't expecting to hear this."



STRATEGY and SUMMARY

Physicians can help reduce a patient's anxiety by helping him or her understand the treatment plan. But it's important that physicians first ask the patient whether he or she is ready to go over next steps and to ensure the patient's specific goals are understood.

Full guide at bit.ly/oncology-SPIKES Source: The Oncologist

Meet Chuck Stokes

Memorial Hermann's new president and CEO began his medical career as an orderly

By Christine Hall

he fly-fishing paintings and golf course photos in L Chuck Stokes' office are there to remind him that, every so often, he should take time to relax.

But there hasn't been much down time since he was named president and CEO of Memorial Hermann Health System in July 2017.

At the end of August, Stokes found himself preparing Memorial Hermann's 19 hospitals to ride out Hurricane Harvey. As the executive in charge of the command center, he relied on his training from Hurricane Ike.

"My role was to organize, making sure everyone had what they needed, that we had enough staff, had enough food and had enough supplies," said Stokes, who served nine years as COO at Memorial Hermann before his promotion. "We worked as a team, all of the executives throughout the organization."

Stokes' very first week at Memorial Hermann, in September 2008, ended with Hurricane Ike. But Harvey was a very different type of storm. Ike was a two-day event, but Harvey swirled above Houston and stayed, dumping rain for five days. During that time, Stokes said, his employees "did an incredible job of taking care of our patients," which included delivering 564 babies, performing 748 surgeries and admitting 2,589 patients.

Unfortunately, about 2,700 employees were displaced from their homes and more than 800 employees lost their transportation. The executive team is reaching out personally to each of the displaced employees and has raised \$6.8 million to help them get back on their feet.

"You could not have seen 25,000 people pull closer together," Stokes said. "We even had a physician use his boat to rescue 100 people."

Drawn to anesthesia

Although Stokes has spent the bulk of his working life as a hospital administrator, he began his health care career as an orderly.

Growing up in Yazoo City, Mississippi, he took a job as an orderly at King's Daughters Hospital, the local community hospital, in 1974. Stokes was on his way to an undergraduate degree in industrial psychology before he decided to change his career to nursing.

66 When I was working as a nurse, one of the things that interested me was ... how does nursing fit in with the larger health care enterprise? That was the reason for going back to graduate school, to figure that out. 🤊 🤊

"The only other thing I'd been really interested in was health care," he said. "I felt like nursing was a good opportunity to help people and make a difference in their lives."

Stokes found himself drawn to anesthesia. He was put to sleep as a child for an appendectomy, a tonsillectomy and a hernia repair. He saw the anesthesiologists at work and wanted to learn more about their role. He enrolled in nursing school at the University of Mississippi Medical Center (UMMC) in Jackson with the goal of becoming a Certified Registered Nurse Anesthetist (CRNA). He was one of just three men in a class of close to 100 nursing students.

"I worked my way through nursing school as a scrub tech in the operating room, because that would be a good way for me to learn what anesthesiologists and CRNAs did. When I graduated from nursing school, I stayed on as a critical care nurse. For the program, you had to work three years before you could get into CRNA school."

To be a good nurse, you have to be a "compassionate and empathetic type of individual," Stokes added. "You're seeing people at their worst and at their best. You have to be able to be comfortable dealing with both because you deal with people at the beginning of their lives, in the middle of their lives and at the end of their lives. I think the rubber meets the road in health care—on the acute care side—with your nursing."

Even patients with the best physicians and the best surgical outcomes tend to remember the care experience at their bedside, Stokes said. If the nurses were great, the experience was great. If the nurses were not good, the patient usually doesn't have a good experience, he added.

Change of course

Although he was working toward becoming a CRNA, Stokes abandoned that goal when he was offered a position in nursing administration, eventually becoming the assistant director of nurses for critical care at UMMC. He did that for several years before deciding he wanted to learn more about the entire health care system.

"When I was working as a nurse, one of the things that interested me was ... how does nursing fit in with the larger health care enterprise?" Stokes said. "That was the reason for going back to graduate school, to figure that out."

Stokes earned a master's in hospital and health care administration from the University of Alabama, Birmingham. He then returned to UMMC as the assistant hospital administrator and diagnosis-related group coordinator. DRGs classify the products and services hospitals provide to patients.

For many decades, Stokes was a man on the move. He stayed at UMMC for three years and then relocated to Houston in the mid-1980s to work for St. Luke's Hospital, when it was housed under the same roof as the Texas Heart Institute and Texas Children's Hospital. He stayed three years as vice president of operations. Then he headed to Shreveport, Louisiana, to be COO of Schumpert Medical Center.

From Shreveport, Stokes relocated to Little Rock, Arkansas, to become COO of the St. Vincent Health System. Next was Huntsville, Alabama, to be COO for the Huntsville Hospital System, and then Tupelo, Mississippi, to become president of North Mississippi Medical Center. Then, in 2008, Stokes returned to Houston as COO for Memorial Hermann.

Stokes says his nursing career, though relatively short, gives him valuable insight into his new role as Memorial Hermann's president and CEO. That clinical experience constantly reminds him of the patient's perspective. It keeps him grounded.

"My No. 1 priority is the patient, and that is always going to be my No. 1 priority," Stokes said. "I've worked with doctors my entire career. ... They really want their patients to get that high-quality, safe care.

(continued)



My relationships with physicians might be a little different than somebody that just came up through a business track. I have a different dimension to that relationship with them by having that clinical background."

A changing hospital landscape

In addition to dealing with natural disasters, Stokes assumes his new role at a time when several institutions in the Texas Medical Center have seen turnover in top executives.

Having worked as a hospital administrator for four decades, Stokes believes this is simply a sign of the times. Executive recruiting firms say this is one of the most volatile periods for leadership in general, especially at the CEO level, Stokes said.

"If you look across the country, this is happening every single day," he said.

According to recent studies, the average tenure for a hospital system CEO is between three and five years. Several factors have contributed to that, from financial pressures to strained relationships between medical staff and health system administrators, Stokes said. "The forecast is, it's not going to get better before it gets worse. It is the stress. These stresses are going to continue to be in the industry for quite a while," he said.

We need to create an awareness about people living healthier lifestyles. We need to work collaboratively to have people educate our community on how to take more personal accountability for their own health.

Stokes gets a bird's-eye view of the industry as chairman of the American College of Healthcare Executives; he hears from other health leaders about what's happening at nearly 5,000 hospitals across the country.

Leaving a legacy

Although Stokes' role as president and CEO of Memorial Hermann is just getting started, he knows where he wants it to go.

"My legacy would be certainly in the area of quality and patient safety," he said. "High reliability has been a major focus of mine forever. We already have a national reputation as being one of the highest in reliability, quality and safety among health care systems in the country."

Stokes also hopes to build a strong physician enterprise, which involves being more aligned with physicians in terms of operations, risk and accountability.

In addition, he would like to see Memorial

Hermann collaborate with hospitals like Houston Methodist, Baylor St. Luke's Medical Center and Texas Children's, as well as the other health care systems in the city, to improve health care in the community.

"We need to create an awareness about people living healthier lifestyles," Stokes said. "We need to work collaboratively to have people educate our community on how to take more personal accountability for their own health."

Meanwhile, as Stokes is getting to know his new position, he still plans to carve out some time to relax. He has a fly fishing trip planned with his son in November.

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Eating for Life

Spermidine, a food compound, may help prevent disease and prolong life

By Christine Hall

7 hich foods help us live longer? Texas Medical Center researchers aim to prove that spermidine-rich foods help prevent disease and increase the lifespan of humans.

Spermidine, a type of organic compound called a polyamine, was first isolated from semen, hence its name. The compound is found in aged cheese, mushrooms, soy products, legumes, yogurt with probiotic LKM512, deepsea snails, corn and whole grains. Leyuan Liu, Ph.D., assistant professor at the Center for Translational Cancer Research at Texas A&M Institute of Biosciences and Technology, is part of a group that has found spermidine to prevent liver fibrosis and hepatocellular carcinoma (HCC), a common type of liver cancer, in animal models.

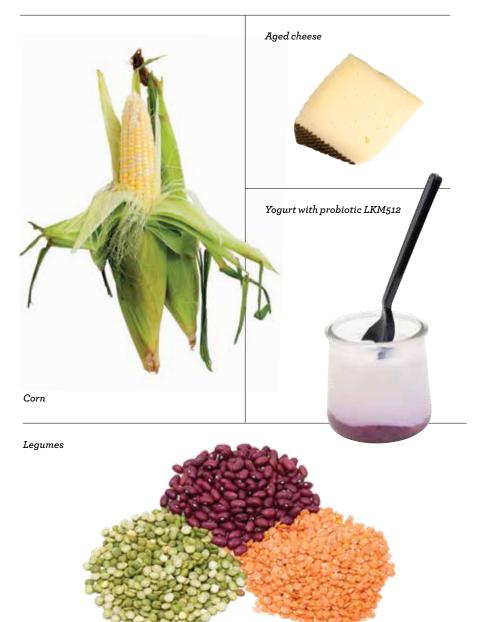
In addition, Liu's research group sees evidence that the compound may prolong life. The group's research, published in the June 2017 edition of Cancer Research journal, shows that spermidine works to prevent cancer by activating MAP1S-mediated autophagy, or the natural self-destroying behavior of cells. When MAP1S isn't available, the benefits of spermidine disappear, Liu said.

Liu has studied autophagy in earlier work and found that cells accumulating waste caused by defective autophagy can go on to replicate and become tumors or cause other problems.

"The autophagy essentially works like a cleaning system for the body," Liu said. Spermidine can prevent the defective autophagy process, and may even improve cardiovascular health.

An abstract from the Cancer Research article notes: "Extending recent evidence that orally administered spermidine can extend lifespan in mice, we determined that life extension of up to 25 percent can be produced by lifelong administration, which also reduced liver fibrosis and HCC foci as induced by chemical insults. ... Our

FOODS WITH SPERMIDINE





findings offer a preclinical proof of concept for the administration of oral spermidine to prevent liver fibrosis and hepatocellular carcinomas and potentially extend lifespan."

The researchers tested their hypothesis by giving mice an oral supplement of spermidine in their drinking water. They found the mice lived longer and were less likely than untreated mice to have liver fibrosis and cancerous liver tumors, even if the treated mice were predisposed for those illnesses.

People who hope to get the most benefit from spermidine would need to eat spermidine-rich foods from the time they begin to eat solid foods, Liu said.

At the moment, there are three ways to help combat liver fibrosis and hepatocellular carcinoma: fasting, restricting the amount of methionine (a type of amino acid found in meat and other proteins) in your diet, or taking a drug called rapamycin, Liu said.

"Eating less, or not eating meat, is not a popular option for the general population to accept, so spermidine, which they could get from products like aging cheese and soy beans, could become a new way," he said.

Even people who aren't able to take spermidine until later in life should see some benefits, Liu said. The animal models involved in the study who were exposed to spermidine showed reductions in both liver lesions and intensity of liver fibrosis, a condition that often leads to liver cancer.

Liu hopes to incorporate spermidine into foods in much the same way folic acid has been added to grain products, like beer.

The next step for the research group is to determine how much spermidine is needed to help humans, and how to deliver a long-term supplement that will be safe. Liu is optimistic this can happen, and the group is currently exploring National Institutes of Health grants to support their efforts.

J&J's Global Play

The Center for Device Innovation @ TMC aims to transform napkin sketches into medical devices

By Christine Hall



Katelyn Balch, event coordinator for JLABS @ TMC, takes a break in the new Center for Device Innovation at the Texas Medical Center. Right: The CDI @ TMC is 26,000 square feet and includes 24 work stations, 12 open lab benches, 10 offices, 10 dual occupancy offices, four segregated work stations and two shipping containers.

r. Billy Cohn is finally getting the workshop he has always wanted. And he's excited to show it off, especially the virtual reality suite, which can transport anyone into an operating room deep inside the Texas Medical Center.

In November, Johnson & Johnson cuts the ribbon on its new Center for Device Innovation at the Texas Medical Center (CDI @ TMC), located on the John P. McGovern campus, at Holcombe Boulevard and Almeda

Road. The new space marks another milestone for Johnson & Johnson's investment in the Texas Medical Center, and will be the company's only Center for Device Innovation in the world.

"Johnson & Johnson has an incredibly long history of being one of the most innovative companies in medical devices," said Sandi Peterson, group worldwide chairman of Johnson & Johnson. "For us, the CDI @ TMC is another evolution in finding new

and creative ways to access innovative people who are trying to do things to improve health care and outcomes for patients."

The state-of-the-art center is designed to help turn napkin sketches into physical products. It gives Cohn a big, beautiful space to create the types of devices he has been building in his garage at home.

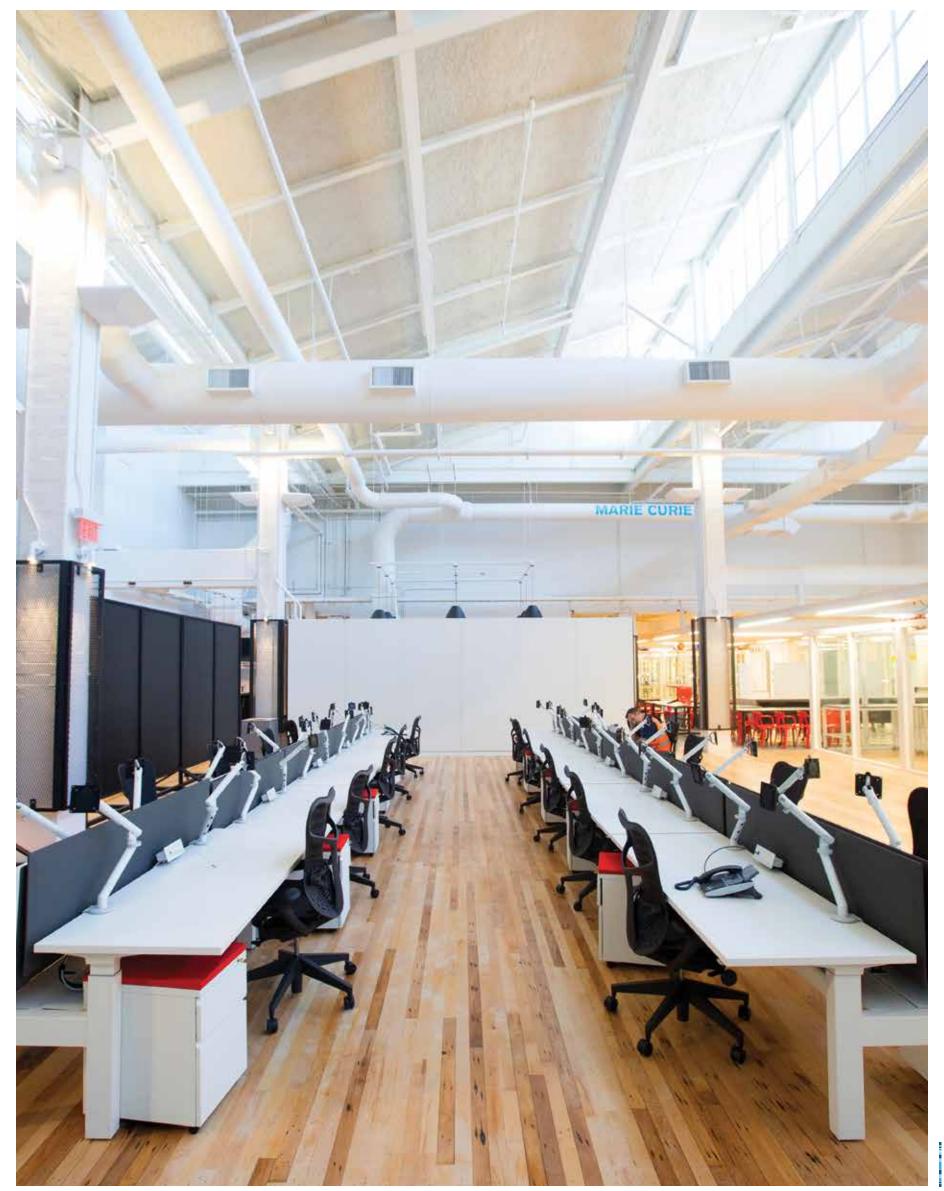
While rifling through drawers and cabinets at the center that hold every type of tool imaginable, Cohn,

66 Entrepreneurs are looking for safe havens for their companies to grow. 🤊 🦻

> -ARJUN "JJ" DESAI, M.D. CEO of JLABS and CDI @ TMC

vice president of Johnson & Johnson Medical Devices and director of the CDI @ TMC, said he had no fewer than four projects that he is eager to do.

(continued)







Carlos Amaro, operations manager at the Center for Device Innovation, stands inside two shipping containers that have been transformed into a conference room.

"Anyone who has an idea, but says they can't do it yet because they don't have the tools, this place removes the hurdles to taking that first step," Cohn said. "I know I am going to fail 20 times before I find something that works, so I want to get it behind me as fast as I can."

According to Cohn and his team, there is nothing that can't be built in the space. The CDI @ TMC is outfitted with everything from laser cutters to 3-D printers, from wet laboratories to hand-cranked mills and automated lathes.

One of Cohn's favorite tools is the water jet, which can cut through metal in seconds. To cut metal in his garage at home, Cohn goes at it with a hacksaw, which can take hours. With the water jet, it takes about a minute.

At the CDI @ TMC, contemporary furniture with whimsical flourishes greets visitors, including an oversized architect lamp that looks like it jumped out of a Pixar movie. Secluded workspaces are reminiscent of nap pods found in Silicon Valley.

The Houston office of Gensler, a design and architecture firm,

oversaw the project.

"Our point of departure for the project was Billy's home garage, the space that he feels most free to experiment and create with all his tools and materials at hand," said Joni Calkins, architecture and senior associate at Gensler. "We were given an amazing old industrial space with tall volumes and great natural light, to which we added not only lab benches and lots of advanced manufacturing machinery, but also elements that would seem industrial in nature, but would facilitate collaboration and be comfortable for the people working in the spaces.

"In the tall space, we installed a conference room made from two large shipping containers and painted



Protective gear is available at the CDI @ TMC.

bright blue. It appears as an amazing industrial object from the outside, but inside it's completely comfortable, outfitted with flexible furnishings and great technology. We had many custom furniture pieces fabricated for the project that utilized existing materials salvaged from the space, including the industrial maple flooring that became table tops and wall cladding. Our goal was to add an authentically Houston quality to the space that is indicative of Houston's engineering and manufacturing heritage."

One of the walls is outfitted with light boxes that will display device successes and failures, said Carlos Amaro, operations manager at the CDI @ TMC. Amaro is an expert at maintaining creative spaces. Prior to joining Johnson & Johnson, he was senior engineering design technician at Rice University.

The CDI @ TMC can fit up to 30 engineers from Johnson & Johnson, Amaro said, some of whom will begin to work in the space by the end of the year.

The new center is an amalgamation of early-stage ideas, great teams, investors and large companies, said Arjun "JJ" Desai, M.D., chief

operating officer of JLABS and the CDI @ TMC. The big idea is to bring all these players together in a focused, creative environment.

"Entrepreneurs are looking for safe havens for their companies to grow," Desai said. "We want to be that funnel."

While startup hubs on the East and West coasts continue to be popular, they are bursting at the seams; it is expensive to get a decent workspace and time with investors, Desai said.

While the CDI will focus on ideas stemming from Johnson & Johnson, Desai hopes the facility will become a place where entrepreneurs can take ideas from academia and move them quickly into commercialization with help from Johnson & Johnson and others.

Entrepreneurs wouldn't have to scramble to find investors or fly off to South America to conduct clinical trials, Desai said. They could do all that in Houston within four city blocks, fostering a rapid cycle of innovation that is cost efficient and resourceful.



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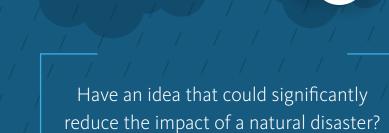
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Three TMC doctors, two identical sisters and one extraordinary transplant

By Shanley Chien

he growth on Marian Fields' back started out in the fall of 2011 as a lump the size of a half dollar, right along the center of her spine. At first, the 66-year-old and her twin sister, Mary Jane, thought it was an innocuous cyst. A dermatologist sliced it out, but within nine months, the growth grew back again. And again. And again. And again.

Marian endured six surgical procedures and 30 radiation treatments to remove the growth, but the tumor and radiation damage had sprouted into a painful, hard, leathery mass that engulfed nearly every square inch of her back. For years, she was unable recline in her seat or sleep on her back because of the pain. The radiation fibrosis "was like the worst sunburn you ever had," Marian said. Mary Jane would continuously rotate through ice packs to help alleviate the burning on her sister's back.

In October 2016, Marian went to see a

plastic surgeon at the University of Kansas Hospital in hopes of finally freeing herself from the incessant nightmare on her back. But when the doctor saw the severity of her condition, his response crushed her.

"I walked out of the doctor's office crying and scared to death," Marian said. "He was very discouraging and said that he didn't see how I would ever have anything beyond a major hole in my back. There's no amount of skin that could cover what would have to be cut out. There was no way it could be done. My quality of life would be significantly diminished."

Soft tissue sarcoma

After Thanksgiving 2016, Marian noticed that she had developed multiple lumps on her back, some of which had grown so quickly that they became necrotic, and the open sores exposed raw flesh. In a Hail Mary attempt for a cure, the Fields twins

traveled in March 2017 from their home in Independence, Missouri, to The University of Texas MD Anderson Cancer Center, where sarcoma expert and surgical oncologist Keila Torres, M.D., Ph.D., diagnosed Marian with plexiform fibrohystic sarcoma, an extremely rare and aggressive type of soft tissue cancer.

Soft tissue sarcoma accounts for less than 1 percent of all cancers, but Marian's specific type of sarcoma is so rare that there have only been 150 reported cases since the 1980s, Torres explained.

The tumors grow in interlaced nodules that multiply on top and beneath the skin's surface. Because of the rarity of the disease, coupled with the inconspicuous nodules, there is a 50 percent chance of the tumor recurring. But Marian's tumor had grown back every single time, seven times.

(continued)



"If the patient goes to a surgeon, they will look at the nodules that are on the surface, but they won't realize that, underneath the skin, there may be other nodules that you cannot see," Torres said. "Whenever they resect the margins of the specimen, it may have some tumor cells that were left behind."

Torres and Jesse Selber, M.D., a reconstructive plastic surgeon at MD Anderson, devised a plan to first surgically remove the diseased flesh and then perform an autologous microvascular reconstruction—they hoped to transfer skin, muscle and tissue from Marian's abdomen and thighs to cover the excision. Unfortunately, Marian's petite 5-foot, 115-pound frame was an issue. There simply wasn't enough of Marian to go around. She had previous surgery on her abdomen, rendering the small amount of tissue there unusable.

"Because [Marian's tumor] had recurred several times and had grown to epic proportions, it outstripped most reconstructive tools we normally use to perform cancer reconstruction," Selber said.

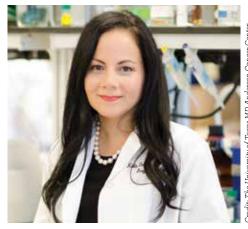
The "suboptimal" alternative was to use muscle and skin from multiple parts of Marian's body and patch them together like a quilt to cover the hole from the resection, but there was a high risk of chronic wound and pain management for years to come, Selber explained.

This option sounded bleak, but Marian's twin was determined to help her sister.

"Just use me," Mary Jane told the doctor. Selber had heard that offer many times

before: A patient's loved one often volunteers his or her own tissue for transplant. Although it's a noble and altruistic offer, it is rarely feasible because transferring tissue between two individuals requires immunosuppression, which is considered too risky in cancer patients.

Selber took a longer look at the two women. "How are you two related?" he asked.



Keila Torres, M.D., Ph.D., is a sarcoma specialist and assistant professor in the department of surgical oncology at The University of Texas MD Anderson Cancer Center.

"Well, I'm her identical twin," Mary Jane responded.

Selber raised his eyebrows. The sisters certainly didn't look like identical twins. Mary Jane is taller and broader than Marian, with a larger body and head. She stands at 5'4.5" and, at the time, weighed 44 pounds more than Marian.

It wasn't the first time someone doubted they were twins. By the time Mary Jane entered college, she had grown an additional 4.5 inches beyond her sister and continued to gain weight. For 10 years, doctors couldn't explain what was causing the mysterious changes in her body. Eventually, Mary Jane was diagnosed with acromegaly, a tumor in her pituitary gland that caused her to produce excessive growth hormone. She went on steroid medication and had the tumor removed, but by then, her appearance

and size had already dramatically changed to the point where she and Marian no longer looked like identical twins.

When Selber heard this, he realized a rare and unique opportunity had presented itself. If he could confirm that Marian and Mary Jane were, indeed, identical, Mary Jane's larger build might actually provide Selber with enough tissue from her abdomen to recon-

struct the hole in Marian's back.

Osama Gaber, M.D., is director of the Houston Methodist J.C. Walter Jr. Transplant Center.

Selber ordered genetic tests that would determine if the sisters were 100 percent identical and a match for transplant. He enlisted the help of transplant surgery veteran Osama Gaber, M.D., director of the Houston Methodist J.C. Walter Jr. Transplant Center, to run further immunological tests. Gaber and Selber had collaborated two years earlier to perform the world's first skull-scalp-kidney-pancreas transplant.

Confirming an identical match was critical to the success of the surgery. Typically, a transplant recipient would be placed on immunosuppressive medication to prevent the rejection of the new organ. But with the high recurrence rate of Marian's tumor, the doctors couldn't risk weakening her immune system. If they were identical twins, there was a chance immunosuppression wouldn't be necessary.

The doctors found that not only were the twins identical on six of the human leukocyte antigens usually measured, but they were a match on all 10.

"They were completely identical," Gaber said.

But the twins didn't need genetic tests to prove they were one. Their kinship ran deeper than the flesh and bone of their bodies or matching DNA on a lab report. Except for six years in their late 20s, Marian and Mary Jane have lived together their entire lives. Neither ever married or had children. They have each other, and that's all they need.

"We get along really well. It seems silly to force a separation. If we lived in separate houses, we would always be at each other's house," Marian said. "It's just nice to have your best friend around all the time."

"Good friendship is one soul in two bodies," Mary Jane said, quoting Aristotle. "That's us."

What is life without quality?

Before the doctors could proceed with the surgery, Gaber put the twins through the routine process of consent. He had to make sure they understood all the risks and benefits. Although he, Selber and Torres supported the surgery, they had to make sure the twins knew every possible complication that could arise and all the challenges they might face. There was a chance the tumor could recur. The surgery might not completely relieve Marian of the neuropathic pain caused by the radiation. And Marian's mobility and strength might



When I first proposed the transplant plan in detail, that it was going to require two simultaneous operating rooms, it was going to be a transplant that's never been done for cancer reconstruction, everybody got a little nervous.

- JESSE SELBER, M.D.

Director of clinical research and associate professor in the department of plastic surgery at MD Anderson

be permanently limited from the surgery.

In addition, the procedure would not extend Marian's life. She had an aggressive tumor, but because her type of sarcoma typically doesn't metastasize to other organs—such as the liver, lung and bones—it wasn't life-threatening, Torres explained.

There were risks for Mary Jane undergoing such a major surgery, as well. Doctors planned to cut out a mass of flesh from her abdomen to graft on to Marian's back.

"When you counsel donors, you don't tell them, 'This is great. It's all going to go well.' You tell them what the risks and the benefits are," Gaber said. "You may come across like you're not sure you want them to do this, but I was from the very first moment really secure in the fact that this

was a really good option."

One thing was certain: If the surgery was successful, it would greatly improve Marian's quality of life.

When the doctors asked the twins one last time if they still wanted to go through with the surgery, Mary Jane responded: "What is life without quality?"

The twins were resolute.

"In my mind, from the beginning, going down [to MD Anderson], there was no other choice than some radical kind of surgery," Marian said. "This was going to solve all of our problems. It was all good from the minute we went down there."

Not only was the surgery risky, but it would be the hospital's first living related donor transplant and the hospital's first



Top: Jessie Selber, M.D., in the operating room. Above, Marian Fields at a post-operative appointment with Selber.

vascularized composite allograft (VCA)—a transplant of tissue other than an organ. It would also be one of the few VCAs ever performed between identical twins, and certainly the most extensive. It was "one of those lightning-striking-in-a-bottle type of situations," Selber said.

"When I first proposed the transplant plan in detail, that it was going to require two simultaneous operating rooms, it was going to be a transplant that's never been done for cancer reconstruction, everybody got a little nervous," Selber said.

(continued)



The Fields twins, who have lived together most of their lives, prepare dinner at their home in Independence, Missouri.

"People start popping up to protest, which is what happens. It's their job to make sure that surgical innovation is not a euphemism for human experimentation."

Selber, who already established a reputation in innovative transplantation from performing the world's first skullscalp-kidney-pancreas transplant, leveraged the success of his leadership during that groundbreaking surgery to gain permission from the various regulatory groups, quality officers, perioperative service leaders and key stakeholders within the institution for the Fields sisters.

"The first person through the wall always gets bloody," Selber said. "If you're going to be the first person to do something, you have to be prepared to take criticism and defend your ideas with medical and scientific rationale and vision. But once you demonstrate the ability to build and lead a

multidisciplinary, multi-institutional team for a very heavy lift like this, the medical community writ large has more confidence in your ability to conduct team medicine and surgical innovation."

After Selber presented his meticulous plans for the surgery, arguing that although elaborate and unusual, it was the most logical and appropriate solution to an almost impossible problem and would give Marian a quality of life she hadn't enjoyed for nearly six years, MD Anderson finally gave him the green light.

"MD Anderson sees the benefits of achieving great things in cancer care for our patients," Selber said. "This is an institution that prides itself on being able to do things that nobody else can do. That's what makes it the best cancer center in the world. If we can't do this kind of thing here, where can it be done?"

14 Hours

On June 26, Marian went in for the first leg of the surgery. Knowing the recurrent nature of the disease, Torres needed to cut wide and deep into Marian's back to make absolutely sure that the surrounding tissue was tumor-free. She carved out a large section of Marian's skin, fat and muscle all the way down to her ribcage and worked with a spinal tumor surgical oncologist to shave off part of Marian's spine from her neck down to her pelvis. It was paramount that no tumor cells remained.

What was left of Marian's back was a gaping 20 by 30 centimeter hole—nearly 8 inches by 1 foot—that spanned from shoulder blade to shoulder blade and extended from her neck down to her pelvis, leaving her ribs and spine completely exposed.

It was a jarring sight, even for Torres.

"It sounds very morbid [because] it was a really big resection," Torres said. "During the procedure, somehow it doesn't feel right when you're doing something like that because it's so massive."

The pathology team, led by Victor Prieto, M.D., Ph.D., then carefully analyzed the specimen to confirm that all margins were clear of any remaining tumor cells before moving onto the reconstruction. Everything was clear.

Four days later, on June 30, the twins moved into their respective operating rooms. Selber and a team of five additional plastic reconstructive surgeons worked on Mary Jane first. Selber drew incisions on her abdomen in the shape of a large oval, spanning from hip to hip and belly button to bikini line. He removed a slab of Mary Jane's flesh and the tiny blood vessels that supplied it, measuring almost 10 inches wide by 22 inches long, pulled taut the walls of her abdomen and sutured the skin togethertaking her from a size 14 down to a size 10.

"It was certainly the largest free tissue transfer that I've ever seen or been involved with." Selber said.

Selber and the team then transferred Mary Jane's abdominal graft to the other operating room down the hall, where Marian was lying on her stomach with her back muscles and fascia completely exposed. He placed the tissue from Mary Jane's stomach on Marian's hollowed back, and began to tease and coax the multitude of tiny arteries and veins until they were all precisely connected. The entire procedure took 14 hours.

We get along really well. It seems silly to force a separation. If we lived in separate houses, we would always be at each other's house. It's just nice to have your best friend around all the time.

MARIAN FIELDS
 Soft-tissue sarcoma patient

"There is some poetic element to bringing a new level of closeness to two people whose bodies and minds were already so connected," Selber said.

When the twins woke up from anesthesia, they both immediately asked Selber how the other was doing, before asking about themselves. Both procedures went smoothly, but Mary Jane had a slightly more challenging recovery than expected due to the 25 years of steroid medication for her pituitary condition.

"You can't die. I can't live with that guilt," Marian said to Mary Jane over the phone from the room next door.

"Marian, I'm not going to die," Mary Jane said. "I'm the stronger Catholic. You wouldn't know how to plan my funeral."

The Fields sisters were discharged in late July and have since returned to their home in Missouri, where they've regained a sense of normalcy neither had experienced since 2011.

vascularized composite allograft program between MD Anderson, Houston Methodist and other institutions within the Texas Medical Center.

"It's one of the really good examples of how collaboration in the Texas Medical Center can happen. You have the surgical expertise in a couple of institutions, the oncology expertise from MD Anderson ... and the transplant expertise right across the street at Houston Methodist," Gaber said. "It's very exciting that we can work together to benefit more patients."

Currently, the most common types of vascularized composite allografts involve hand and face transplants, but Selber and Gaber aim to tap into the high volume of clinical cases in the Texas Medical Center and offer creative solutions that take them off the beaten track of conventional reconstructive surgery, transplantation and cancer reconstruction.

"We've sort of cornered the market on really weird cases," Selber said. "Where these unique reconstructive transplant cases fit in with certain complex clinical conditions, most doctors don't recognize. But through this lens of understanding the interactions between reconstruction and allotransplantation, clinical solutions emerge that were previously unidentified. Hopefully, enough people have heard about this ... that they'll be able to identify us as a resource when these kinds of rare cases come around."

Meanwhile, Mary Jane continues to inspire awe in everyone who hears about her donation to Marian. For the Fields sisters, though, it was a no-brainer.

"I'm not surprised by what she did," Marian said. "She knows that if the tables were turned, it would be the same for me."

After all, they are two halves of the same whole. When Marian and Mary Jane were still in the womb, the doctor listened to their mother's protruding belly during checkups and heard one strong heartbeat. He concluded that one large baby was on the way. In reality, two hearts were beating as one. Sixty-six years later, their hearts continue to beat in perfect harmony.

"We were in sync even back then," Mary Jane said. "We're not just sisters and we're not just twins. We're best

friends. What we have



Setting the stage

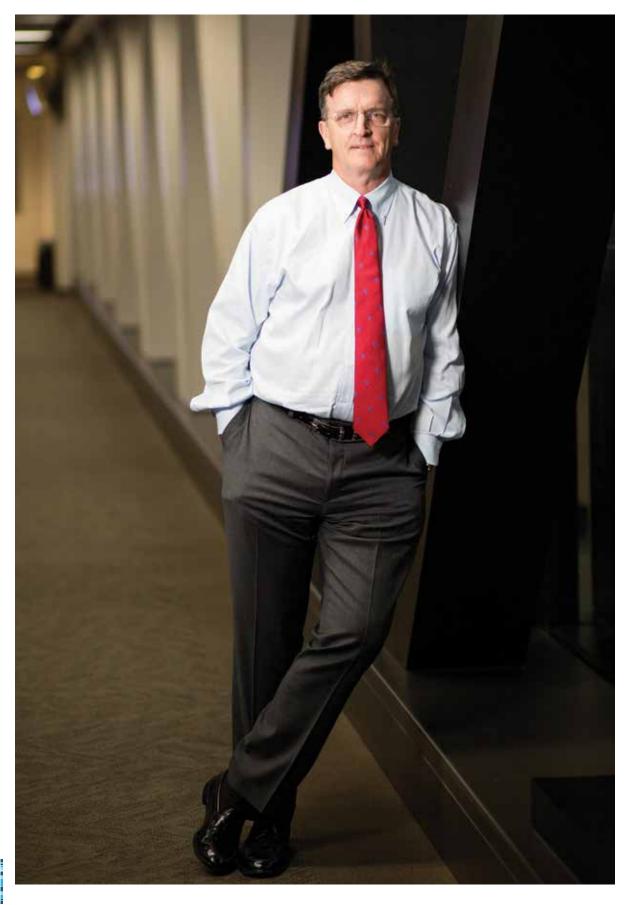
With two history-making surgeries under their belts, Selber and Gaber are pioneering a new frontier in innovative transplant and reconstructive plastic surgery at the Texas Medical Center.

Beyond the clinical significance of the Fields transplant, the entire surgical process with the twins proves that their previous collaboration during the skull-scalp-kidney-pancreas transplant "wasn't a fluke," Gaber said. Instead, it bears testament to the power of collaboration and continues to strengthen the need for

a growing

TMC>PULSE | NOVEMBER 2017 29

Late last year, after decades in Massachusetts, THOMAS MacGILLIVRAY, M.D., traded Boston winters for Houston summers and became Houston Methodist's chief of cardiac surgery and thoracic transplant. While many heart surgeons work with congenital heart disease in children, MacGillivray is bringing attention to congenital heart disease in adults.



Q Tell us about your background.

A I grew up in the Boston area. I had my education and training up in the Boston area. I trained in surgery and cardiac surgery at Massachusetts General Hospital, and I stayed there for almost 19 years after I finished training.

What made you decide to go into cardiac surgery?

A My dad was a surgeon. My dad had trained in internal medicine, too, first, but decided to be a surgeon. I consciously made a decision to keep an open mind. So I literally went through all of my rotations in the third and fourth year of medical school with that approach.

When I did pediatrics, I approached it with the idea that I want to be a pediatrician. When I did psychiatry, I approached it as, I'm going to do this rotation like I want to be a psychiatrist. I loved every minute of medical school, but I ended where I started. I wanted to be a surgeon.

I don't know why, but I remember specifically the first day of my internship. They had a little lunch for us. One of the administrators said to me, 'Well, what kind of surgeon do you want to be? And I said, 'Well, I don't really know. I'm really interested in pediatric surgery, maybe trauma, but I want to keep an open mind. But I know for absolute certainty that I don't want to be a heart surgeon.'

I'd never done a cardiac surgery rotation. Back in those days, cardiac surgery was sort of a juggernaut in medicine, and I had these misconceptions that all it was you did was two or three operations and there wasn't really any thinking or patient care involved. We spent a lot of time during our residency training on the cardiac surgery service, and I realized it was completely the opposite of what I thought—except for it being technically very demanding, which it continues to be. One of my professors once said, 'General surgery is like flying a Cessna, but cardiac surgery is like flying an F-14.' And he's right.

What did you learn about cardiac surgery during those formative years?

A You had to be ever-vigilant about what was happening with the patient. Patients could be very, very unstable, very sick. With really precise operations, you'd make people much better—not just keep them from dying, but allow them to have a much-improved quality of life. If you did a very good operation, the patient did well. If you didn't do a very good operation, you could take somebody who was not that sick and kill them. The management of patients in post-operative care, in the intensive care unit, required really intensive care. You have to be able to identify subtle changes in their course and intervene. I found it exciting, exhilarating really. You could actually see yourself getting better at it the further along you went.

And then, my exposure to congenital heart disease was that, but on steroids. You found these poor babies

or poor kids that had these terrible problems, and you could make them better and allow them to go have a normal life. That's what attracted me to cardiac surgery, and still keeps me excited about cardiac surgery.

Q On television, cardiac surgeons are typically portrayed as cutthroat and competitive. Do you see that as a truth or a misleading stereotype?

A I think there is some truth or certainly some basis to the stereotypes in us, and I think that's because certain personality types tend to be attracted to certain kinds of specialties. For some of the reasons I stated, heart disease is a terrible problem in that it requires an intensity, it requires a focus. It mandates that you make decisions quickly. If you're right, the patient does well, and if you're wrong, the patient may suffer some consequences. So you have to be pretty sure of yourself.

• What led you to Houston?

A Out of the blue I got a phone call from former TMC President and CEO Bobby Robbins, M.D., who I had known. The heart surgery community around the country is pretty small, so you get to know people, and some people very well. Bobby, a heart surgeon himself, is such a great guy, and it's extremely easy to like him. He said, 'They're looking for a chief of cardiac surgery at Methodist. I think you'd be a good fit for it. Why don't you come down and visit?'

So, I did. To be honest with you, I didn't think I was going to come here. I had never been to the Texas Medical Center. I heard about it. It's a world-famous place. It's kind of like being a young adult and having never been to Disney World. For no other reason, I thought it'd be great to come down and see first-hand what I'd heard about for my whole medical professional life.

Q You decided to stay, so, obviously, you liked what you saw.

A I did. Literally, when I first stepped out of the taxi, I was overwhelmed by just the sheer size of the Texas Medical Center. Surgeons tend to like history, and they certainly like or tend to have hero worship, and there are plenty of surgical heroes that over the years have been here. Between those two things, it was overwhelming. But what impressed me more than anything were the possibilities for the future. Having spent time

We're learning that things we thought we fixed when patients were children, as it turns out, maybe weren't fixed forever. Some of the repairs start to develop problems or they develop problems related to their repairs.

talking with Alan Lumsden, M.D., [chief of cardiovascular surgery at Houston Methodist DeBakey Heart & Vascular Center] and Osama Gaber, M.D., [director of the Houston Methodist J.C. Walter Jr. Transplant Center and professor of surgery at Houston Methodist and Weill Cornell Medical College] and a whole list of people, they seemed very intelligent, very accomplished, very excited and had great vision for where they wanted to take Methodist.

Q How did you first get involved with adult congenital heart disease?

A One of the cardiologists at Mass General was one of the very first people to take an interest in adult congenital heart disease, and he and I partnered together.

Q | Is there a difference between congenital heart disease in adults and congenital heart disease in children?

A | That's a really good question. If you ask most people, they would think that congenital heart disease or congenital heart surgery involves kids. For a long time that was true, but the pediatric cardiologists and the pediatric cardiac surgeons over the last 50 years have done such a great job, there are now more adults who have congenital heart disease than children.

Congenital heart disease would be heart defects that you're born with as opposed to what we refer to as acquired heart disease—things that you develop throughout life due to risk factors or misfortune, like coronary artery disease, aortic valve stenosis, mitral valve prolapse or aortic aneurysms.

We're learning that things we thought we fixed when patients were children, as it turns out, maybe weren't fixed forever. Some of the repairs start to develop problems or they develop problems related to their repairs. Physicians solved the problem then, but they created a problem for now.

There are people who have congenital heart disease that was repaired who have now developed acquired heart disease. In order to be able to manage that, you have to have a real understanding of both of those kinds of problems. It's in that way very much a new frontier.

Q | Since you say adult congenital heart disease is a new frontier, where would you like to see it go?

A dult congenital heart disease is a gathering storm, if you will. There are a whole lot of patients who were treated and, at the time, were told that they were cured. They are no longer children, so they don't see the pediatrician or cardiologist that knew about it, and they don't necessarily realize that they may have an evolving congenital heart problem.

This is a bit controversial, if you will, but the expertise with congenital heart disease in the past, and, for a large part, in the present, is at pediatric hospitals. This burgeoning field of adult congenital heart disease is an issue with adults in that they now have adult congenital heart disease and they also have other

adult problems. Many of us, me included, think that they would be best managed in an adult hospital with people who have an expertise with adult congenital heart disease.

What I would like to see is centers like ours help get the word out to those patients who may or may not know that they need to be evaluated. I would like the resources to be available to those patients—not only at our center, but at other centers. I do think that with the team we have here, we're uniquely positioned to help lead that way.

Q I read that you helped a girl from Haiti with her heart disease. Have you had certain opportunities during your career that have made you especially proud?

A | At the risk of sounding like a Boy Scout, I truly consider it a privilege to be able to take care of people. I'm humbled and honored that somebody would come to my office and ask me to take care of them. People trust you. They trust your judgment. They trust your knowledge. They trust your technical abilities. I take that as a true sacred trust, I really do.

When I was training medical students and residents over the years, my No. 1 rule was always be nice to the patient. That's one of the things my dad taught me. Before I started my residency, he said, 'Tom, the most important thing about being a doctor isn't being famous or writing papers or being a professor. The most important thing is taking care of the patient. You can't always make the right diagnosis. You can't always cure every disease. But you can always be nice to the patient.' Oftentimes, that's the most effective medicine and therapy you can bring to them.

A cardiologist in the greater Boston area when I was up there, went on a mission to Haiti. He had been going back and forth, and he took his son down, who was a high school student, just to give him a transformational experience. The cardiologist was going to donate an EKG machine from his office to this clinic. While getting it set up, he put it on his son and he saw that his son had an abnormal EKG. So here he is down in Haiti, doesn't really have access to any advanced evaluation, they're down there for two weeks, and he saw that his son had a significant cardiac problem. He had a treatable kind of congenital heart disease, so I operated on him and he did very well.

When the cardiologist brought his son in for his post-op evaluation, we were talking and he asked me if I would take care of a girl he met in Haiti who had terrible heart disease, but no one to take care of her. I agreed that if we could figure out a way to get her up here, I'd take care of her. They did, and I did. I've been fortunate to be able to help take care of a lot of people over the years.

Thomas MacGillivray, M.D., was interviewed by Pulse reporter Christine Hall. This interview has been edited for clarity and length.

Outgrowing an Allergy

With food allergies on the rise, a simple test brings conclusive answers

By Alexandra Becker



or as long as she could remember, Carolyn Parmer, now 16, had to bring her own cake to birthday parties. She was allergic to nuts and sesame seeds, and her mother was worried that even the slightest contamination could trigger an allergic reaction.

"When I had allergies, we wouldn't really eat out a lot because of contamination risk, and if I'd do summer camp or something, I'd have to have my own meal," Parmer said.

She carried an epinephrine autoinjector with her everywhere and dutifully asked about ingredients in snacks and at sleepovers. Over the years she was monitored by her allergist, Carla Davis, M.D., director of the Food Allergy Program at Texas Children's Hospital.

At one point during a routine checkup, Davis noticed that Parmer did not have a reaction to her skin prick test. Davis tried it again: nothing.

Parmer was in fifth grade when she underwent an oral food challenge, a test in which a patient is given increasing amounts of the offending food and monitored to see if an allergic reaction

occurs. A medical professional stands by with oxygen, epinephrine, albuterol and antihistamines in case it does.

Parmer said the quantity was tiny at first—mere milligrams—and she gradually worked up to nearly a spoonful of peanut butter and tahini paste during the test. Still, no reaction; she had outgrown her allergy, and her life became easier in an instant.

Parmer's experience is not uncommon. A recent study in the Annals of Allergy, Asthma & Immunology journal examined reaction rates of mostly

low-risk adults and children who underwent food challenges in five different allergy and immunology centers across the country. The individuals were identified as low-risk because of several factors, including the lack of a recent reaction and a history of tolerance to ingestion. The revelatory study found that 84 percent of the approximately 6,300 participants passed their oral food challenges without having any reaction, 14 percent had a mild to moderate reaction, and 2 percent experienced severe anaphylaxis, underscoring Our immune system has been geared to fight off things like parasitic diseases, and in first-world developed countries, we're not exposed to these anymore. We think the immune system has been redirected to attack food.

- CARLA DAVIS, M.D.

Director of the Food Allergy Program at Texas Children's Hospital and associate professor of pediatrics in the section of immunology, allergy and rheumatology at Baylor College of Medicine

the importance of performing the test under medical supervision.

Davis, who is also an associate professor of pediatrics in the section of immunology, allergy and rheumatology at Baylor College of Medicine, was the lead author of the study. She explained that individuals undergo oral food challenges for multiple reasons.

"They either had a food allergy and wanted to know if they'd outgrown the allergy, or they'd had other testing that suggested a food allergy even though they had never ingested the food, or they had a history of a mild reaction but had never been found to be positive through tests," Davis said.

Food allergies are caused by an abnormal reaction of the immune system to a certain food. They are different than food intolerances, such as lactose intolerance and celiac disease, because they trigger an overproduction of an antibody called immunoglobulin E (IgE). Physical symptoms of this reaction range from a minor tingling sensation around the mouth to life-threatening anaphylaxis—the higher the levels of IgE, the more likely a life-threatening allergy. Interestingly, a decrease in IgE levels as determined by blood tests over a period of time indicates the likelihood of outgrowing a food allergy.

The oral food challenge is considered the gold standard for determining

the presence of a food allergy because the other two tests in the field—the skin prick test and the blood test—only measure sensitization to the food; neither reliably measures severity of a reaction or definitive presence of an allergy.

The skin prick test looks for the presence of IgE antibodies by piercing the skin and placing a drop of solution containing specific food allergens on a broad area of the body, often the arm or the back. In a patient with a history of a reaction to the food, if a hive appears, an allergy is likely present. The blood test also measures the presence of specific IgE antibodies, but both tests carry with them a high rate of false positives—meaning there can be a presence of IgE antibodies even if an individual has never had a reaction to that food.

Although the oral food challenge is the best means of determining a food allergy, allergists might choose not to perform this type of test because of the high risk of an allergic reaction, the burden of time, concern about cost to the patient and personnel constraints, according to the study co-authored by Davis. One goal of the study was to provide an accurate determination of the real risk of oral food challenges in non-research settings in order to help allergists in clinical practices around the country make everyday decisions about treating their patients.

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More than 90 percent of all food allergies are caused by just eight types of foods. Four of those-milk, eggs, soy and wheat allergies—are commonly outgrown, whereas allergies to peanuts, tree nuts, fish and shellfish are often lifelong. Davis said that only about

20 percent of children with a peanut allergy will outgrow it, a statistic made more sobering by the fact that food allergies are on the rise in the U.S. and other developed countries. In fact, research compiled from the Centers for Disease Control and Prevention shows

that food allergies in children increased approximately 50 percent between 1997 and 2011.

But it remains unclear as to why there has been a surge in food allergy cases, and why food allergies are all but nonexistent in underdeveloped countries. Theories range from genetic to environmental, and one proposition, the hygiene hypothesis, blames Western culture's obsession with cleanliness.

"Our immune system has been geared to fight off things like parasitic diseases, and in first-world developed countries, we're not exposed to these anymore," Davis explained. "We think the immune system has been redirected to attack food."

Perhaps that idling of the immune system explains why research related to the microbiome—described by science writer Carl Zimmer as the approximately 100 trillion bacteria and other microbes living inside the human body—is beginning to give clues about food allergies.

It is known that the microbiome

plays a critical role in the immune system, and research has shown that the composition of the microbiome is related to the susceptibility of food allergies. In fact, studies using mice models have shown a class of bacteria called Clostridia protected mice against certain food sensitizations, which could potentially lead to future development of probiotic therapies.

Researchers and clinicians are optimistic that treatments for food allergies will be developed, but until then, the only course of action is avoidance of the specific food group. Still, there are the lucky ones who, for reasons not completely understood, experience a drop in their IgE antibodies. Some of them will sit at a doctor's office and take a series of smaller bites, then larger ones. Then, like Parmer, they'll celebrate with something long forbidden.

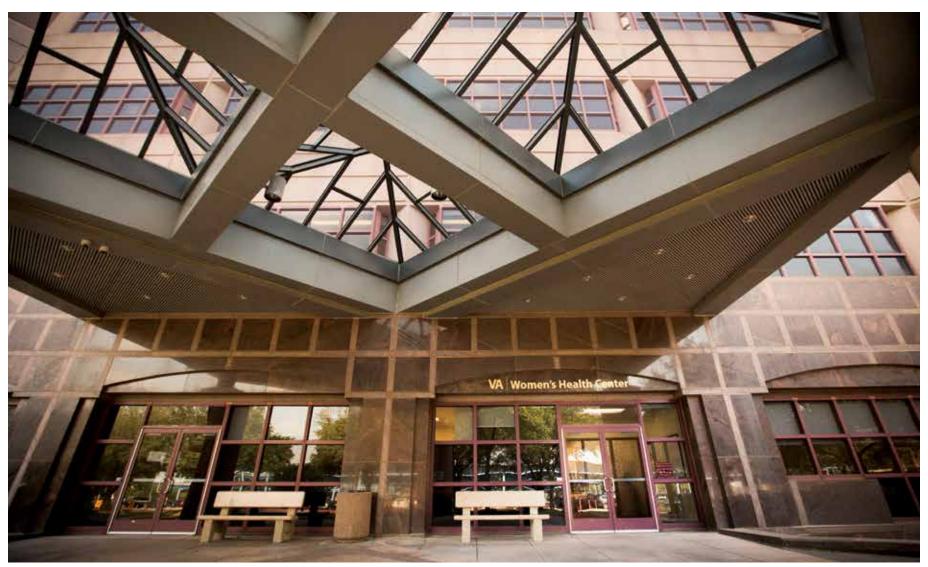
"The first thing I had was a Reese's Peanut Butter Cup," Parmer said. "It was really good."



A New Way Into the VA

The Women's Health Center caters to the specific needs of a minority community

By Maggie Galehouse



The Women's Health Center at the Michael E. DeBakey Veterans Affairs Medical Center Houston offers a private entrance for patients.

Touston is home to 14,000 women veterans, a number that has doubled in just 10 years. "Texas, overall, has the largest number of female veterans in the nation, but the majority do not seek care at the VA," said Rola El-Serag, M.D., medical director of the Women Veterans Health Program at the Michael E. DeBakey Veterans Affairs Medical Center Houston. "Our goal is to improve that number. Women need to get the message that the VA is on the ball, that we are attending to their needs and changing the culture."

A new designated space for women on Houston's sprawling, 118-acre VA campus is evidence of this cultural shift.

Last summer, the VA opened an 8,200-square-foot

66 Having a place with a private entrance makes these women feel important and reduces their stress. 🤊 🤊

- ROLA EL-SERAG, M.D.

Medical director of the Women Veterans Health Program at the Michael E. DeBakey Veterans Affairs Medical Center Houston

Women's Health Center-more than double the size of the former women's clinic on site. Completed in January, the center is designed to be sensitive to the population it serves. Within a massive complex that mostly caters to male patients, the Women's Health Center provides a safe, intimate space for women.

"Predominantly, the VA is a man's world,"

El-Serag said, "but women veterans have unique needs that are distinct from their male counterparts. For example, 23 percent of female veterans report that they experienced sexual trauma in the military. A good percentage of them will develop post-traumatic stress disorder (PTSD) because of that."

(continued)

HEALTH CARE AND **WOMEN VETERANS**

Women make up about

10%

of the veteran population in the United States.

As of Sept. 30, 2016, the total U.S. veteran population was 21,368,156, and women accounted for 2,051,484 of that total. Texas has the highest number of women veterans in the country, with 183,597.

In 2015,

35.9%

of women veterans were enrolled in the Veterans Health Administration health care system.

Not all women who enroll ultimately become health care users.

From 2005 to 2015, the

number of women veterans enrolled in VA health care increased 83.9 %,

from 397,024 to 729,989.

From 2005 to 2015, the number of

women veterans using VA health care increased 46.4%,

from 237,952 to 455,875. To put this in perspective, about 13.1 percent of all women veterans in 2005 used VA health care, compared with 22.4 percent of all women veterans in 2015.

> Sources: Department of Veterans Affairs, National Center for Veteran Analysis and Statistics

According to the American Psychological Association, female veterans who were sexually assaulted are more prone to develop PTSD than other women who experienced combat and are much less likely than other PTSD sufferers to seek help.

Military sexual trauma, as defined by the federal government, is "psychological trauma resulting from a physical assault of a sexual nature, battery of a sexual nature, or sexual harassment which occurred while the veteran was serving on active duty, active duty for training, or inactive duty training."

With this in mind, the Women's Health Center offers its own entrance at the VA, so every female patient who visits walks into an environment that offers privacy and security.

"Having a place with a private entrance makes these women feel important and reduces their stress," El-Serag said.

In the waiting room, decorated in soothing blues and beiges, photos of daisies and branches in bloom hang on the walls. A check-in kiosk helps the flow of patients; individuals can sign in and look at their lab results or refill their prescriptions. At one end of the waiting room, the Kids Zone offers activities for children who tag along with their mothers.

"I've been here 14 years," El-Serag said. "Women with PTSD exhibit avoidance behaviors. They're no-shows to appointments. They only walk in when they need to. Continuity is important. These women need support and reassurance. They don't trust that easily."

Among the most prevalent primary serviceconnected disabilities for women veterans are PTSD, major depressive disorder, migraines, cervical strain, bronchial asthma and degenerative arthritis of the

spine, according to the National Center for Veterans Analysis and Statistics. The Women's Center treats a lot of medical conditions clustered around PTSD, including chronic migraines, irritable bowel syndrome, fibromyalgia, mood swings, excessive anger and acting out.

Every veteran must deal with the trauma of active duty, El-Serag said. Ignoring it simply doesn't work.

"I tell new patients: It will come back to get you, and when it does, it will come back with a vengeance," she said.

The Women's Health Center employs a staff of about 30, including doctors, nurses, radiologists, mammography techs and administrators. Different teams work with specific groups of patients, including the transgender and LGBTQ communities. The big challenge is to encourage women veterans to make use of the center's services, and to keep them coming back for follow-up visits and routine care.

Marlene Cano, RN-BC, breast care coordinator at the center and acting Women Veteran's Program Manager, explained that the VA leads the nation in breast cancer screening rates. She oversees that outreach in Houston, making sure patients are notified of routine screenings and additional services.

The average age of a woman veteran in Houston is 40, El-Serag added, while the average age for a male veteran in Houston falls closer to retirement age, between 60 and 65. Serving a younger female population means addressing specific health and lifestyle issues.

"We see a whole lot of women in their twenties and thirties," El-Serag said, "and they don't want to spend all day at the VA."

So the center aims to streamline patient care,



Breast radiologist Mahdieh Parizi, M.D., at work at the Women's Health Center.



Rola El-Serag, M.D., walks through a suite of rooms at the Women's Health Center.

managing problems or complications as soon as they arise. Offices are clustered inside the center to make it easy for the care team to communicate and for patients to move between them.

Often, a patient will come in for a physical examination and the doctor will identify depression

or PTSD.

"If we identify a mental health need, we can see the patient on the same day," said Alison Sweeney, Psy.D., a psychologist on staff.

Similarly, the breast center within the Women's Health Center can respond to an inconclusive

Women need to get the message that the VA is on the ball, that we are attending to their needs and changing the culture.

- ROLA EL-SERAG, M.D.

mammogram right away, by offering an ultrasound. That way, patients are relieved of the stress of waiting weeks to find out whether or not they are facing a serious health problem.

"We have a same-day model," explained breast radiologist Mahdieh Parizi, M.D. "If we see an abnormality, we work up everything on the same day."

And sometimes the smaller details—including the plush pink robes women are given while waiting for breast examinations or other types of breast care—go a long way toward making patients feel cared-for and comfortable.

Since the Women's Health Center has been up and running, it has also become an academic hub for women's health in Houston.

"It's wonderful," El-Serag said. "Students and doctors are coming to the VA to learn about women's health."

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[1] MARIA ELENA BOTTAZZI, PH.D., professor of pediatrics and associate dean of the National School of Tropical Medicine at Baylor College of Medicine, was recognized by the National Congress of Honduras for her work and research.

[2] ROBERT McLAUGHLIN, PH.D., dean of the School of Allied Health Sciences at Baylor College of Medicine, is president-elect of the Texas Society for Allied Health Professions.

[3] FELICIA SKELTON, M.D., professor at Texas Woman's University, was selected for the Gold Medal for Excellence in Nursing in the Nursing Education: Faculty category from the Good Samaritan Foundation.

[4] MIGUEL QUINONES, M.D., a cardiologist with Houston Methodist DeBakey Heart & Vascular Center, has been appointed the Winters Family Distinguished Centennial Chair in Cardiovascular Education.

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[5] PAMELA CIPRIANO, PH.D., RN, president of the American Nurses Association, visited with CAROL PORTER, DNP, RN, senior vice president and chief nursing officer of THE UNIVERSITY OF TEXAS MD ANDERSON **CANCER CENTER**, where Cipriano heard stories about care during Hurricane Harvey.

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[6] WILLIAM F. McKEON, president and CEO of the Texas Medical Center (TMC), with DAVID FEHERTY, former professional golfer, comedian and host of the television show Feherty. Feherty performed at Third Coast restaurant as part of the TMC Golf Tournament to benefit the TMC Foundation.

[7] A young boy is fitted for a new orthotic device at the Shriners Hospital outreach clinic in La Feria, Texas, where staff members from ${\color{red}{\bf SHRINERS}}$ HOSPITALS FOR CHILDREN - HOUSTON traveled in September.

.....

[8] MICHAL PIERCE, M.S., quality director of the Harris County Institute of Forensic Sciences, achieved the Certified Manager of Quality/ Organizational Excellence designation from the American Society for Quality.

[9] MAYUKH SARKAR, PH.D., MLS, was recognized as a Choosing Wisely Champion by the American Society for Clinical Pathology.

[10] TMC police lieutenant SCOTT MEIER demonstrates a tight turn during a bicycle class for police and security officers.















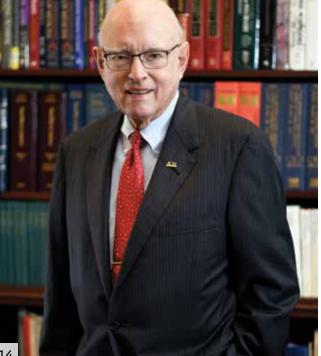


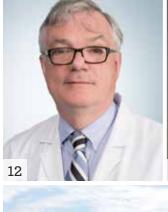




Credit: Nos. 1, 2, 3, 4, 5, 7, 8, 9, 11, 12, 13, 14, 16, 18, courtesy photo; No. 17, CiK Studios

















DO YOU HAVE TMC PHOTOS YOU WOULD LIKE TO SHARE WITH PULSE? SUBMIT HIGH-RESOLUTION IMAGES TO: NEWS@TMC.EDU

[11] PETER KIM, M.D., PH.D., Children's National Health System; WILLIAM ALTMAN, CEO, CorInnova; **KEITH SVAGERKO,** VP CorInnova; SHING YUE SHEUNG, NAVI Medical Technologies; and KOLALEH ESKANDANIAN, PH.D., Children's National, at the Pediatric Innovation Symposium. NAVi, which operates in the TMC INNOVATION INSTITUTE, and CorInnova, a resident company in the <code>JLABS</code> @ TMC space, were each awarded \$50,000.

[12] EAMONN QUIGLEY, M.D., the David M. Underwood Chair of Medicine in Digestive Disorders at Weill Cornell Medical College at Houston Methodist, will be honored with the Berk/ Fise Clinical Achievement Award, at the upcoming World Congress of Gastroenterology meeting.

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[13] ANNE YOUNG, EDD, RN, assistant professor of physical medicine and rehabilitation at Baylor and researcher at Center of Innovations in Quality, Effectiveness and Safety received the Excellence in Research Faculty Award.

[14] WILLIAM T. BUTLER, M.D., who served as the second president of Baylor College of Medicine from 1979 to 1996, died on Sept. 22. Members of the Baylor community gathered for a memorial service on Oct. 3, where Butler was remembered as a humble and kind leader whose vision shaped the college into what it is today.

[15] CHILDREN'S MEMORIAL HERMANN and MEMORIAL HERMANN LIFE FLIGHT unveiled a new look for one of the signature red Life Flight helicopters. The redesigned helicopter sports a bright green exterior and features the Children's Memorial Hermann logo.

[16] KEVIN ERICKSON, M.D., assistant professor at Baylor College of Medicine and researcher at Center of Innovations in Quality, Effectiveness and Safety, was awarded the 2017 Southeast Texas Young Investigator Research Grant by the National Kidney Foundation.

[17] CHARLES MACIAS, M.D., MPH, chief clinical systems integration officer at Texas Children's Hospital and co-chair and co-founder of the national sepsis collaborative, accepted a 2017 Sepsis Hero award on behalf of the Children's Hospital Association and its membership.

[18] Texas Children's President and CEO MARK A. WALLACE and his wife, Shannon, donated \$80,000 to the TEXAS CHILDREN'S PAWSITIVE PLAY PROGRAM in memory of their beloved black Labrador, Cadence.

November 2017

Sound Health: Music and the Mind

Lecture with Grammy winner Renée Fleming and Todd Frazier Friday, 5 p.m.

Houston Methodist Research Institute 6670 Bertner Ave.

Bookout Auditorium, 2nd floor

Free; registration recommended at events.houstonmethodist.org/ soundhealth

ljduda@houstonmethodist.org 281-979-9011

713-703-7888

WomenHeart Houston Support Group

Wednesday, 11:30 a.m. - 1:30 p.m. Texas Heart Institute 6770 Bertner Ave. Cooley Building, 5th floor Maley Conference Room WomenHeartHouston@gmail.com

TMCx Medical Device Demo Day

Wednesday, Noon - 7 p.m. TMC Innovation Institute 2450 Holcombe Blvd., Suite X Free; registration required at

www.eventbrite.com ccogdill@tmc.edu 713-791-8855

11

Parkinson's Disease & Essential Tremor

Seminar presented by the Mischer Neuroscience Institute with Mya Schiess, M.D., and Albert Fenoy, M.D. Saturday, 10 a.m. - Noon TMC Innovation Institute 2450 Holcombe Blvd., Suite X Free; registration required at

mni.events@memorialhermann.org 713-222-2273

713-792-0071

MD Anderson Boot Walk to End Cancer

Saturday, 1 p.m. Check-in at 11 a.m. MD Anderson Cancer Center Pressler St. at Bertner Ave. Free; registration at mdanderson.org/bootwalk bootwalk@mdanderson.org

Dan L. Duncan Comprehensive Cancer Center Distinguished Lecture Series

With Cindy Farach-Carson, Ph.D. Tuesday, Noon - 1 p.m. Baylor College of Medicine One Baylor Plaza, Alkek N315 amy.craft@bcm.edu 713-798-4601

16-17

Prairie View A&M University – College of Nursing Open House

Thursday, 10 a.m. – Friday, 2 p.m. Prairie View A&M University 6436 Fannin St. fdsmith@pvamu.edu

713-797-7031

16 - 19

World Corporate Games

Multisport festival for businesses and organizations Thursday - Sunday Various Locations Downtown

Tickets start at \$99; registration required at wgchouston.com/register mpardue@houstonsports.org

Are you at risk for throat cancer?

HPV*-related throat cancer is on the rise in men.

MD Anderson Cancer Center, the nation's leader in cancer care, is seeking men to help us develop a screening test to detect this cancer early, when it's easiest to treat.

Males ages 50-59 residing in the U.S. are invited to participate in this unique study and will have access to tests not available to the general public. Together, we're Making Cancer History.®

You will be asked to:

- Come to an appointment in the Texas Medical Center (parking costs covered)
- Sign an informed consent document
- · Complete a questionnaire
- · Provide a blood and saliva sample

*human papillomavirus



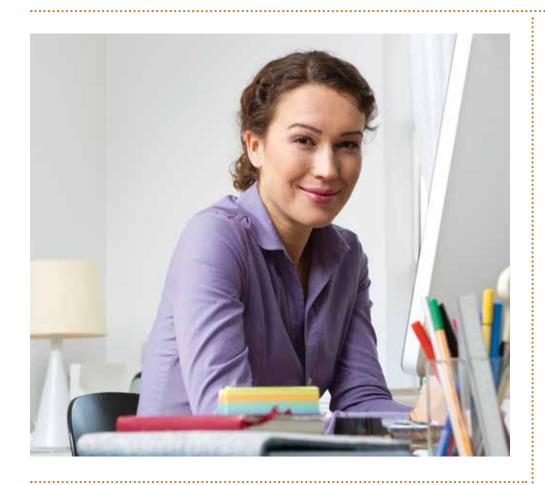




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Sempronius Chappell Hill, \$4.2+ mil. Laura Gerardi, 713.914.8714

Southgate Blvd.

Caroline Schlemmer, 713.446.2716

Southgate, \$2.6+ mil.



Williamsburg Piney Point, \$3.2 mil. Lynn Russell/Courtney Robertson 713.819.4563/713.557.5943



River Oaks, \$2.7+ m ussell/Courtney Robertson .4563/713.557.5943



Bolsover Rice/Museum District, \$1.2+ mil. Colleen Sherlock, 713.858.6699

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Memorial Close-in, \$620s

Mary Hale McLean, 713.553.4255



