

# TMC | PULSE

NEWS OF THE TEXAS MEDICAL CENTER — VOL. 4

NO. 2 — MARCH 2017

## A Bull Rider's Breaks

Despite injuries, rodeo champion  
Cody Teel hangs on, p. 16

TWO STORIES  
IN ONE ACT, p. 10

IUD RUSH, p. 12

LEADING BY EXAMPLE, p. 22



# THIRD COAST



## BREAKFAST IS SERVED

MONDAY THROUGH FRIDAY, 7 TO 10:30 A.M.

Located in the heart of the Texas Medical Center, Third Coast is a perfect spot for morning meetings or to grab a bite with friends before work. Stop in for pancakes, omelets, huevos rancheros and other breakfast favorites.

Make a reservation today through [OpenTable](#) or by calling 713.749.0400.

# The CME you want. 24/7.



**PHYSICIANS.** Get free CME on the go with Texas Health Steps Online Provider Education. All courses can be accessed 24/7 from your computer or mobile device. Choose from a wide range of topics with direct relevance to your practice, including many courses with ethics credit.

**Learn more at [txhealthsteps.com](http://txhealthsteps.com).**



**TEXAS**  
Health and Human  
Services

## FEATURED COURSES



**ADHD & ASD.** Implement best practices for screening, diagnosing and treating these conditions in a primary care setting.



**CULTURALLY EFFECTIVE HEALTH CARE.** Promote effective communication and improve health outcomes for culturally diverse patients.



**CHILDREN WITH ASTHMA.** A stepwise approach for treating children with asthma and recognizing the need for an asthma specialist.



**PHYSICIAN CME**



**SOCIAL WORK CE**



**NURSE CNE**



**PHARMACY CE**



**DENTAL CE**



**GENERAL CE**

*Accredited by the Texas Medical Association, American Nurses Credentialing Center, National Commission for Health Education Credentialing, Texas State Board of Social Worker Examiners, Accreditation Council of Pharmacy Education, UTHSCSA Dental School Office of Continuing Dental Education, Texas Academy of Nutrition and Dietetics, Texas Academy of Audiology, and International Board of Lactation Consultant Examiners. Continuing Education for multiple disciplines will be provided for these events.*



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

**M**arch is Women's History Month, and in this issue of *Pulse* you'll find stories about several women at the Texas Medical Center. Some have spent decades as leaders in their respective fields; some are just starting out.

I've had opportunities to work alongside some incredible women. At Stanford, I knew Dr. Frances Conley, a great neurosurgeon and the first female tenured professor of neurosurgery in the country. Conley was really tough—not only on the women, but on the men. She resigned from Stanford in 1991 to protest sexist attitudes and sexual harassment on the job, but rescinded her resignation after the university promised to make changes in policies and procedures. Her book about the gender discrimination she experienced, *Walking Out on the Boys*, should be required reading for everyone in medicine.

Over my career, I have witnessed sexism—without question. But I believe we are seeing progress.

There's been a big push to get girls involved in STEM (science, technology, engineering and math) fields, and the TMC should be very proud that we've hosted several events on this topic. We brought in middle school counselors from all over Texas to discuss the importance of encouraging young girls to pursue careers in science and math.

And we're surrounded by female superstars at the TMC. Dr. Huda Zoghbi is one of the most prominent neuroscientists in the world. And what about Dr. Laura Petersen, director of the Center for Innovations in Quality, Effectiveness and Safety, and associate chief of staff for research at the Michael E. DeBakey VA Medical Center? She's got more NIH funding than almost anyone in the country.

The TMC is filled with women who serve as inspiration to colleagues and younger generations.

*Robert C. Robbins*

## TMC | PULSE

Vol. 4 No. 2

March 2017

*President and Chief Executive Officer*

Robert C. Robbins, M.D.

*Vice President of Communications*

Christen David

*Pulse Editor*

Maggie Galehouse

mgalehouse@tmc.edu

*Digital News Editor*

Shea Connelly

sconnelly@tmc.edu

*Staff Writers*

Alexandra Becker

Shanley Chien

Christine Hall

Britni N. Riley

*Photojournalist*

Cody Duty

### NEWSROOM

713-791-8812

news@tmc.edu

### ADVERTISING

Felicia Zbranek-Zeitman

713-791-8829

newsads@tmc.edu

### DISTRIBUTION

Daniel Martinez


713-791-6136


distribution@tmc.edu


### READ US ONLINE

tmc.edu/news

### FOLLOW US

 @TXMedCenter

 @texasmedcenter

 @thetexasmedicalcenter

*TMC Pulse* is an award-winning monthly publication of the Texas Medical Center in Houston, Texas. Permission from the editor is required to reprint any material.





**Stud Finder**

IntuiTap Medical's device will streamline spinal taps and epidurals.



**We Will Rock You**

Every surgery has a soundtrack. ▼



**Knowing What to Expect**

A new test for pregnant women finds abnormalities in genes.



**The First Few Hours After Losing My Husband**

A widow shares her story.

- 6 TMC Spotlight: Mauro Ferrari, Ph.D.
- 25 Curated: *Ron Mueck*
- 26 On the Side: Claudius Conrad, M.D., Ph.D.
- 28 Solutions
- 34 Field Notes
- 36 Calendar

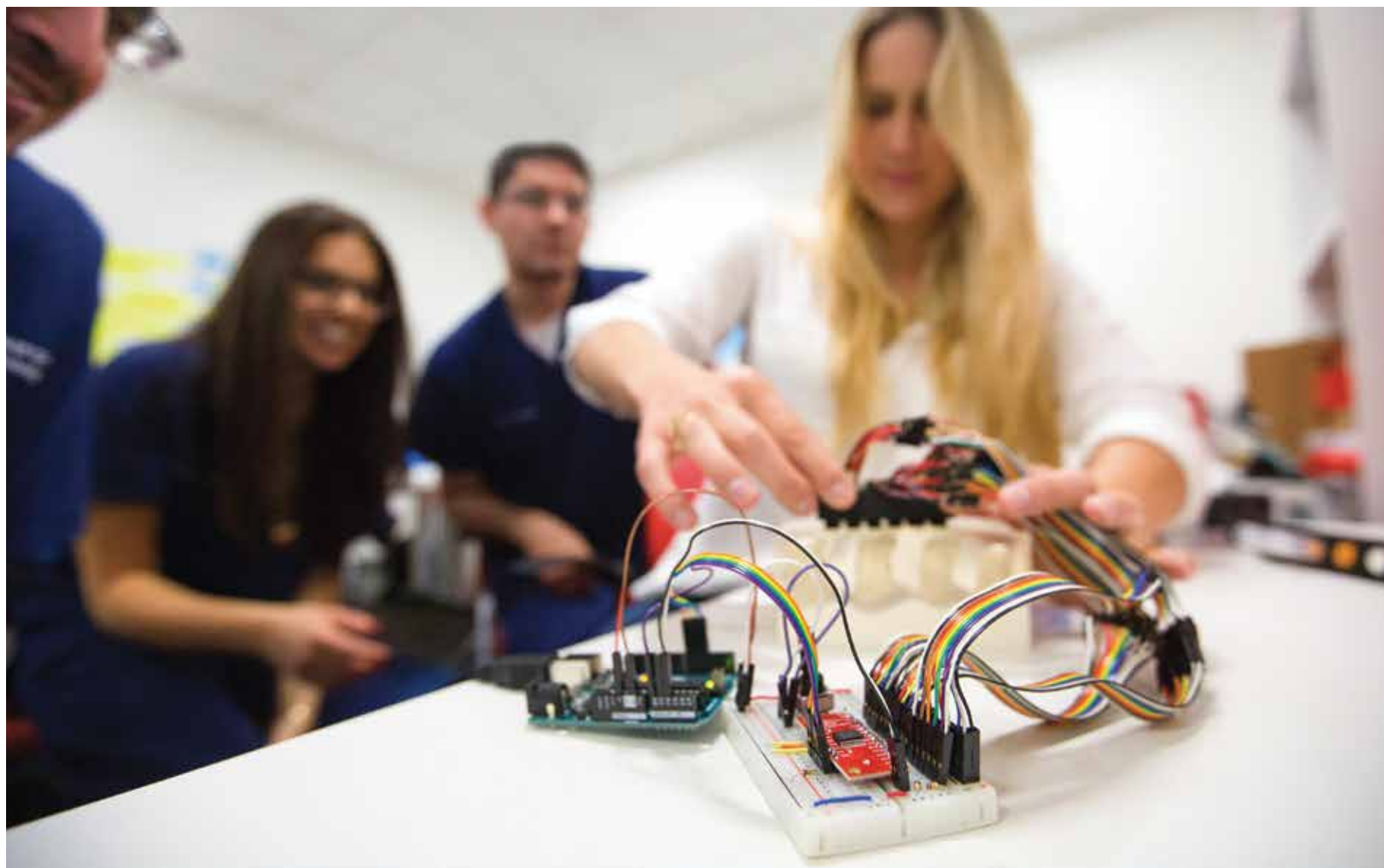
ON THE COVER: Rodeo bull rider Cody Teel at a family ranch near College Station, Texas.



# Stud Finder

*IntuiTap Medical's device to streamline spinal taps and epidurals was born at the TMC*

BY CHRISTINE HALL



Above: The IntuiTap Medical team works on an early prototype of its device. Below: Nicole Moskowitz, left, and Jessica Traver, right.



Spinal taps hurt. IntuiTap Medical wants to change that, with a device that uses imaging technology, pressure sensors and predictive analytics to make the process more accurate and more comfortable for patients.

The award-winning company, launched at the Texas Medical Center in 2016, set up shop in Johnson & Johnson Innovation's JLABS @ TMC in February 2017.

"We are continuing to move forward," said Jessica Traver, co-founder and CEO of the women-led company.

"We want to close our seed round in the next couple of months, do a clinical test in the next six months and submit to the FDA in the next year."

When Traver, 25, speaks to investors, she often compares the IntuiTap to a "stud finder" that locates the spot between the vertebrae where the needle needs to go.

It's difficult to find someone who *hasn't* had an issue with a spinal tap or epidural procedure, Traver said, because patients come in all shapes and sizes and the procedure is often done



quickly—especially if the patient lands in the emergency room.

The startup's journey began in August 2015, when Traver found herself grouped with Nicole Moskowitz, Xavier Garcia-Rojas, M.D., Ph.D., and Yashar Ganjeh, Ph.D., as part of the inaugural

TMC Biodesign program—a paid, one-year fellowship that brings together innovators to build new digital health and device solutions. The team members came from various backgrounds: Traver and Ganjeh from mechanical engineering, Moskowitz from biomedical engineering, and Garcia-Rojas from radiology.

They rotated through different TMC hospitals, watching surgeries and trying to understand the needs of patients and health care professionals. After visiting emergency rooms and speaking with physicians who perform spinal taps and epidurals, the team decided to create a device that provides a real-time image of the spine's vertebrae.

One year later, they had demonstrated that their need was viable, conducted studies, raised part of a seed round and created the company. Traver became CEO; Moskowitz became chief technology officer; Xavier Garcia-Rojas became chief medical officer; and Yashar Ganjeh, the executive vice president.

After graduating from the Biodesign program, the IntuiTap Medical team was accepted into the four-month medical device cohort at the TMCx accelerator, a program within the TMC Innovation Institute. That wrapped last November.

Moskowitz, 26, and Ganjeh have spent the past few months in Chicago, working with Insight Product Development to redesign the IntuiTap prototype with an eye toward ergonomics and adaptability in the operating



room. They're also working on the tactile sensor, the part of the device that measures information from its interaction with an environment—in this case, a person's spinal column. The goal: a higher resolution image and greater accuracy.

When the new prototype is complete, IntuiTap will begin bench-testing and start its institutional review board (IRB) study with both imaging and needle insertion. The IRB is a group formally designated to review and monitor biomedical research involving human subjects.

Getting to this stage was a protracted lesson in patience and perseverance. But in recent months, IntuiTap has gained national attention.

The device won a Johnson & Johnson Innovation award and the 2016 HealthTECH Startup Competition. Traver also participated as a finalist in SoGal Ventures' SoGal Summit, which supports female entrepreneurs.

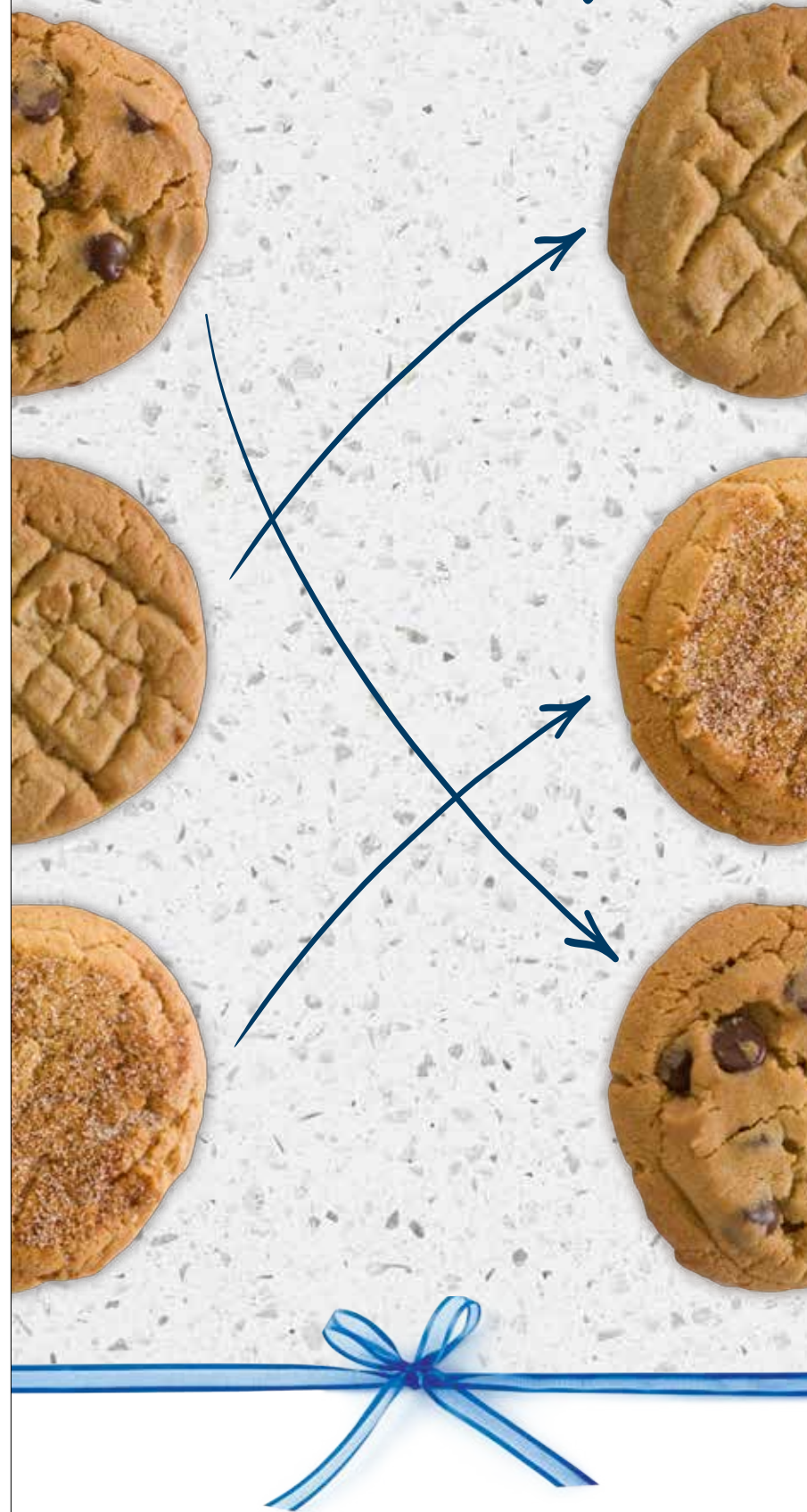
In addition, Traver and Moskowitz made the *Forbes* 30 Under 30 list for health care. *Forbes* pored over more than 15,000 applications to build a list of 600 young entrepreneurs in 20 different industries to honor in 2017.

"It has been an incredible journey—throughout and beyond our TMC fellowship and accelerator experiences—learning, implementing and living the biodesign process," Moskowitz said. "And it is truly humbling to be recognized like this along the way. To me, it is not only unexpectedly exciting recognition for our team, but also validation for the important role the TMC Biodesign process—that is, a uniquely comprehensive, needs-based approach—plays in solving health care problems for our and future generations." ■

“We want to close our seed round in the next couple of months, do a clinical test in the next six months and submit to the FDA in the next year.”

— JESSICA TRAVER  
Co-founder and chief executive officer of IntuiTap Medical

# Happy Match Day.



Celebrate Match Day  
with warm cookies, delivered.

**Tiff's Treats®**  
cookiedelivery.com



**MAURO FERRARI, PH.D.**, president and CEO of Houston Methodist Research Institute, is known for his revolutionary treatment of cancer using nanotechnology. Ferrari spoke with *Pulse* about ‘disciplinary fracking,’ what soothes his soul, and why he identifies with the butler from *Downton Abbey*.



**Q | You're an avid marathon runner, which requires a lot of mental and physical discipline. How does that discipline translate to your research?**

**A |** Running is a metaphor for cancer research in the sense that rule No. 1 is you don't stop. No matter what happens, you keep on going. That's what it takes. Now, to bring true innovation to the clinic, it's a journey of many, many years. Incremental innovation can go a little bit faster, but, of course, incremental innovation hasn't cured metastatic disease yet. To cure metastatic disease, you need to be able to think of things that are truly different—starting from scratch—and refuse to die and keep on going.

**Q | How many marathons have you run?**

**A |** About 30, but I take my time. One reason why I think I like it so much is it's easier than any day in the office. Also, I'm not very good at it. That's the important part. I think it teaches you humility.

I like to run what they call ‘ultra-marathons’ up mountains. I've done marathons with a total elevation gain of 12,000 feet. It's a mystical experience. The longest one I've done, the 100K (62 miles), took me about 16.5 hours.

Everybody is able to celebrate when they win. If it comes easy, boom, you do it again and you do it again. Learning comes from slogging through things you are having a hard time doing. I think that's a good lesson.

**Q | I understand your first wife, Marialuisa, passed away from cancer while you were a professor at the University of California, Berkeley. How did that personal tragedy shape your life and career?**

**A |** I don't know what the meaning of life is. I don't think anyone does. But I have this sneaking suspicion that it's got something to do with turning one's own pain and suffering into good things for others.

**Q | How did you meet your wife Paola?**

**A |** I knew Paola even before I knew Marialuisa. We are from the same small part of the same small town up in the mountains of Italy. We went to the same high school, though she's a few years younger than I am. She had come to the U.S. independently to be a Fulbright Scholar at Columbia University, working at the United Nations.

The two of us—the three of us, including Marialuisa—come from very humble backgrounds. Nobody in our three families had ever been to college, so this was a major step in breaking away from tradition.

**Q | How so?**

**A |** We have steel mills in our town, and that was a traditional place of occupation for everybody. It was either that or the military. My family was military.

I was the black sheep of the family; I went to college. I was really focused and got my Ph.D. from



Berkeley. I get back to Italy and I'm thinking, 'Man, I've gotten my break into big-time action!' All those Nobel laureates at Berkeley. Back in my day, there were 17 Nobel laureates. I was watching all these great people and I was thinking great thoughts.

Before I married Marialuisa, I actually stopped going to college for six months so that I could make money any which way I could, including tutoring high school kids. I was a tutoring machine. When I got back to Italy after Berkeley, my father said, 'Well, now you've got your Ph.D., you can charge more when you tutor high school kids!'

You see the disconnect? It was all in good faith, but what the heck did they know about Cal Berkeley, universities, Nobel laureates and all that stuff? It's entirely different.

**Q | You started as a mathematical physicist and mechanical engineer, then moved into medicine. Tell me about that combination of disciplines.**

**A |** At Berkeley, I was a mathematician who used to work on mathematical physics. My job was in the mathematical foundation of the theory of relativity and how it applies to the expansion of the universe.

Then I got a Ph.D. in mechanical engineering, then taught and got a tenured faculty position in materials science, civil engineering and bioengineering. That was just at Berkeley. Then I moved over to Ohio State, where I was a full tenured professor of medicine. I started medical school at age 43 as a full professor of medicine. That was a lot of fun.

You know the words 'interdisciplinary' and 'multi-disciplinary'? I don't like either word. I like the word 'superdisciplinary.' You know when you get excited and the sparks start flying when you put two different things together? Now that I've moved to Texas, the way I think about what I try to do is 'disciplinary fracking.' I go deep, and I break barriers so the juices start flowing and everybody wins.

**Q | How will a 'super-disciplinary' approach or 'disciplinary fracking' help us cure cancer?**

**A |** The reason we haven't been able to cure cancer is diversity. There is no such thing as one disease. There are hundreds of diseases. Every cancer is different, and you can only fight like with like. Unless you have a diversity of approaches that work together, you cannot beat the diversity of cancers. Nobody can do it solo.

It's important that we have depth in all of the disciplines, but it is equally important—perhaps even more important—that we understand how to connect them in a synergistic fashion. I'm a big believer in the notion that science is autobiography and that science is essentially self-confession. We can only do the science that our brain cells are wired to do.

My brain sees patterns, sees connections. I've been a professional mathematician, professional engineer, this and that. I wasn't good at any. I'm a little bit better



Mauro Ferrari, Ph.D., points to a special photograph in his office.

**“ Look where we are: the No. 1 medical center in the world. If we don't work on the big problems, who will? We can't run away, shy away. It's a responsibility. It's an ethical responsibility. ”**

at putting things together and seeing ways in which things can get together and do things that are impressive, which is good for the job that I do.

Everything we do here is at the service of patients. A lot of times in the sciences, we do science for the sake of science. I don't mean to criticize because that's the right thing for a lot of people. That's right for universities, but here, we are a hospital.

Every day, I get phone calls or emails or contacts from people who are desperate, who are dying. Someone with breast cancer, metastatic disease, their life expectancy on average 24 to 36 months. It's them, it's their husbands, their children who contact me and say, 'We read about this thing in mice. Can you do it to my loved one or to me?' Those are very difficult questions and we field each and every one of them personally.

**Q | You have a framed printout with the words 'Luke 12:48' above your office doorway. What does that mean to you?**

**A |** This is the passage from the Gospel of Luke where it talks about the fact that from people to whom much is given, much is expected. Look where we are: the No. 1 medical center in the world. If we don't work on the big problems, who will? We can't run away, shy away. It's a responsibility. It's an ethical responsibility.

**Q | What do you do in your free time?**

**A |** I'm writing theater productions. I write and I perform. The next one I'm going to do is called, *I'm Not an Actor*. My idea is I'm there in front of a lot of

people and I talk to them like I'm talking to you. I'm telling true stories. When you've got 2,000 people in a room, it's kind of hard to look everybody in the face, but that's where the challenge is. I have been through a lot. This has been a very difficult, very rewarding life and I think it's worth telling.

**Q | Why do these performances? Is it for the benefit of the audience or for you?**

**A |** I think it has to be both. There has to be some emotional fracking. In some ways, there is a restlessness inside me and it is soothed by talking about things and sharing. You get a feeling of community. It's all part of the mission concept of life. Whether you're religious or not religious, it doesn't make any difference. It's all about service to others. It's the only thing that I find to be soothing for the soul. Nothing else.

**Q | You have a Downton Abbey tumbler on a shelf in your office. What's the meaning behind it?**

**A |** In *Downton Abbey*, there is one character I identify with very much. The gentleman's name is Mr. Carson. He is the butler in this environment of great aristocracy and big castles, which is where we are at the Houston Methodist Research Institute. I know my job. I'm the butler. And I'm very happy to be the butler and a servant. ■

**Dr. Mauro Ferrari was interviewed by Pulse reporter Shanley Chien. This interview has been edited for clarity and length. Read the full interview at [tmc.edu/news/](http://tmc.edu/news/)**

# We Will Rock You

*Every surgery has a soundtrack*

BY ALEXANDRA BECKER



Jack Dawson, M.D., chief of orthopedic surgery at Ben Taub Hospital and an assistant professor of orthopedic trauma surgery at Baylor College of Medicine, shows a playlist on his phone.

*A hospital OR can be a somber environment—until a surgeon cranks up the music. The bold strokes of the Rolling Stones or the airy brightness of a sitar can energize any room. Inside the Texas Medical Center's operating suites, you'll hear everything from ABBA to Zeppelin, because surgeons use music to help their teams concentrate and stay in sync.*

## JACK DAWSON, M.D.

"I use Spotify as my music player of choice. I do orthopedic trauma, so I'm in the OR several days a week. I like a wide variety of music, and a lot of the time I will defer to the other people in the room. As a result, what I listen to often depends on which of my residents is operating with me—luckily we have

pretty similar tastes. Most of it is pretty upbeat—there is a lot of electronic music and a fair amount of indie rock. Some days we go with the '80s, and the middle of the night is a great time to listen to hip-hop and rap. Very occasionally we have country on, and on rare occasion, we have ranged all the way from dubstep to Irish drinking songs.

The main thing is, since I listen to music almost all day, every day,

there is always a quest for new music. I accumulate new music using Spotify, which creates a weekly list of music recommended for you based on what you have been listening to. I listen to these recommended songs every week and tag songs to go into a new music playlist. If I continue to like them after several plays, they are moved into genre-specific playlists. The end result is a selection of playlists that



generally have music that I have decided I really like.”

*Jack Dawson, M.D., is the chief of orthopedic surgery at Ben Taub Hospital and an assistant professor of orthopedic trauma surgery at Baylor College of Medicine.*

**JOSEPH LOVE, D.O., F.A.C.S.**

“While I routinely listen to music in the OR, I rarely choose. I tend to let the resident I am working with or the nurse decide. Otherwise, I go with the Pandora classic rock station (heavy on the Rolling Stones and Zeppelin). Streaming music services have really changed the way we all consume music and listen in the OR.”

*Joseph Love, D.O., F.A.C.S., is the medical director of Memorial Hermann Life Flight and a trauma surgeon at Memorial Hermann Red Duke Trauma Institute and McGovern Medical School at UTHealth.*

**MILTON ROUTT, M.D.**

“I always listen to music in the operating room. It started with a portable boom box and multiple briefcase satchels that held about 30 cassette tapes each. We would rotate satchels each day. It has evolved to Bluetooth music via my phone or iPod. I keep a portable speaker with me so we always have some tunes. I still have the cassettes in their satchels! Music keeps us calm, focused and progressing. And sometimes we dance—very briefly and poorly. Some preferred artists you can choose from: Little Feat, Alice Cooper, Foghat, ABBA, The Beatles, Bad Company, The Beach Boys, Lyle Lovett, Elton John, Nazareth, Chad and Jeremy, The 5th Dimension, KC and

The Sunshine Band, Gary Puckett & The Union Gap, Queen, Pink Floyd, The Moody Blues, Dwight Yoakam, ZZ Top, France Joli, Ohio Players, War, Rufus, Pure Prairie League, The Allman Brothers Band, The Marshall Tucker Band, Andrea Bocelli, Garth Brooks, Kenny Rogers, Joe Satriani, Jeff Beck, anything disco, Clint Black, The Judds, Collective Soul, Wings, Michael Jackson, Eagles, Earth Wind & Fire, Jerry Jeff Walker, Bee Gees, Chicago, Jethro Tull, Eminem, Barry Manilow, Stevie Wonder, Johnny Cash, Ted Nugent, Rod Stewart, Stevie Ray Vaughan, Donna Summer, Ronnie Milsap and Talking Heads.”

*Milton Routt, M.D., is an orthopedic trauma specialist with Memorial Hermann-Texas Medical Center and McGovern Medical School at UTHealth.*

**MANISH SHAH, M.D.**

“I am proud of the fact that two of my residents follow me on Spotify. I have made more than a few custom playlists for the operating room. I love all kinds of music. I play the sitar, an Indian classical instrument. My heart is really in 1990s-2000s hip hop. I have an awesome radio-edited playlist that the entire OR sings along to. I add songs per request. However, I love classic rock, mash ups, funk, jazz and most other kinds of music. I find that the music keeps the residents, staff and anesthesia teams mellow, stress-free and focused on the child on the OR table. Surgical cases go much more efficiently when everyone is in tune.”

*Manish Shah, M.D., is a UTHealth pediatric neurosurgeon with Memorial Hermann Mischer Neuroscience Institute at the Texas Medical Center and Children’s Memorial Hermann Hospital. ■*



Manish Shah, M.D., poses with his sitar. The stringed instrument measures about 4 feet in length.

HOUSTON METHODIST and BAYLOR COLLEGE OF MEDICINE  
CENTER FOR MEDICAL ETHICS & HEALTH POLICY

INTENSIVE

BIOETHICS COURSE

APRIL 18-21, 2017

Houston Methodist Hospital  
6565 Fannin St. ■ Houston, TX 77030

This unique course focuses on the following topics:

- Fundamentals of medical ethics
- Communication strategies for facilitating family meetings
- The value and importance of clinical ethics services
- How to: conduct a consult, write a chart note, run an ethics committee, write effective hospital policy and conduct advance care planning conversations

This live activity has been approved for AMA PRA Category 1 Credits™ and education in medical ethics and/or professional responsibility.

[events.houstonmethodist.org/bioethics](https://events.houstonmethodist.org/bioethics)

HOUSTON  
Methodist  
LEADING MEDICINE

Baylor  
College of  
Medicine

CENTER FOR  
MEDICAL ETHICS  
& HEALTH POLICY

# TWO STORIES IN ONE ACT

## Into the Coverage Gap



For the past year, Natalia Fuentes, 67, has been riding a health care roller coaster. Caught in a “coverage gap,” she is part of a group of uninsured, low-income adults living just above the federal poverty line.

Fuentes, who needs regular treatment for cataracts and glaucoma, has been unable to benefit from the Affordable Care Act (ACA).

Until last March, she received high-quality care at an affordable rate through Harris Health System.

“I could see all of my regular doctors at Vallbona clinic and I could go to Ben Taub if I needed to see another doctor or to Sunnyside if I needed an MRI,” Fuentes explained. “I used to pay \$10 for a doctor consultation and \$8 for medicine. If I needed an MRI, I only paid \$10; if I needed an EKG, I only paid \$10. It was a big help for me.”

But in a roundabout way, the ACA intervened.

Passed in 2010, and put into effect in 2014, the ACA included coverage expansion that extended Medicaid eligibility to greater numbers of low-income residents across the country. Individual states had the option to expand Medicaid coverage; those that opted in received additional federal funds. But Texas, home to more uninsured Americans than any other state, opted out of expanding Medicaid. As a result, many Texans were deprived of health care coverage, which led to higher costs and lower revenues for health care providers.

Last year, Harris Health System was forced to scale back coverage to its patients. Under the new program, households that exceed 150 percent of the federal poverty line no longer

## Caring for a Compromised Heart

Long-distance runner Rebecca Trahan was the embodiment of health. At 5'2" and 108 pounds, she was in peak physical shape. The self-employed graphic designer and small business owner exercised religiously, maintained a clean diet, didn't smoke and rarely drank alcohol.

In August 2011, just a few days after her 49th birthday, Trahan visited Denver, Colorado, where she spent a week at a horse camp. While she was driving to the Denver airport for her return flight to Houston, her vision suddenly blurred and she became overwhelmed with sweat and nausea. But she dismissed the symptoms, assuming they were precursors

of a migraine.

“I pulled over to the side of the road to take my vascular inhibitor when a hippopotamus flew into the car and sat on my chest,” Trahan said, describing the crushing pressure she suddenly felt on her heart. “My jaw was numb, and my arms were numb, and just huge sweating, all of that. Classic symptoms of a heart problem, but I denied it all.”

The symptoms persisted for 45 minutes.

“I convinced myself, even though I didn't believe it really happened, that it was a panic attack, because I had just run 15 miles with no problems,” Trahan said.

What Trahan experienced was neither a migraine nor a panic attack. It was a spontaneous dissection of the left main coronary artery, a rare and occasionally fatal condition. Trahan's heart was collapsing.

Spontaneous coronary artery dissection—also referred to as SCAD—occurs when the inner lining of a coronary artery becomes loose, allowing blood to flow underneath and form a bubble. This obstructs blood flow to the heart, which can cause a heart attack, abnormal heart rhythm, or even sudden death. The exact causes of SCAD are unknown, but research indicates that patients are often healthy women with little to no risk factors for heart disease.

Instead of calling 911 or going to the hospital, Trahan continued down the freeway. She dropped off

her rental car, caught her flight back home and continued with her usual workout regimen of running, boxing and lifting weights. But at 3 a.m. the following Tuesday, Aug. 30, Trahan awoke in another fit of agony.

With blurry vision and severe chest pain, she dragged herself to the bathroom, took some aspirin and went back to bed, counting her breaths and waiting for the pain to pass.

Later that afternoon she went to see her doctor. After her internist ran a few tests, the medical team told her she needed to be transported to St. Luke's Hospital by ambulance.

“An ambulance? Are you kidding me? I can drive,” Trahan said, running the numbers in her head. “It's going to cost a fortune.”

Trahan paid for her own insurance and was concerned about mounting medical costs.

“Rebecca, you fail to see the gravity of the situation,” her cardiologist

“The only thing that saved me was that there was a non-pre-existing clause.”



With the Affordable Care Act in the process of being repealed—or revised—*Pulse* offers two health care snapshots. Obamacare failed to help one patient, but the other found coverage for a pre-existing condition.

qualify for discounts. Fuentes fell into that group.

“I felt terrible,” Fuentes said. “In a government office, how can you treat someone like that? ... With the money I make, I know it is impossible, completely impossible, to pay for an MRI or surgery or a dentist.”

Fuentes was approved for Medicare Part B, but was unable to afford the premiums based on her monthly income.

“When I applied for Medicare, they wanted me to pay \$140 per month and that only includes consultations—not prescriptions or surgeries,” she said. “I can’t afford that. The

rent on my apartment goes up every six months. How am I supposed to pay for things on top of \$140? I can’t.”

Because her late husband served in the Vietnam War, Fuentes receives a pension from the Veteran’s Administration. Although it is not enough for her to afford the monthly Medicare premiums, she is exempt from the federal mandate to obtain insurance and did not owe a fee.

But she was in a bind. No longer able to attend regular medical appointments or see the doctors who had been treating her for the past decade, Fuentes scrambled to find health care.

“With the money I make, I know it is impossible, completely impossible, to pay for an MRI or surgery or a dentist.”

“To me it is very important to have a regular doctor,” Fuentes said. “I feel like I am going blind because of my cataracts and glaucoma, and I need to have regular check-ups on my liver because I had Hepatitis C in the past. I was cured, but I still need to see a doctor.”

A friend recommended San José Clinic, a multidisciplinary Houston charity care clinic that serves the uninsured and underserved.

“It was a blessing,” Fuentes said. “It was my saving grace. I’ve been coming to San José since March 2016.”

At the clinic, Fuentes receives primary care, dental care and specialty care. She is able to have lab work done, has access to a full pharmacy, and can be seen by optometrists.

“This clinic gives me help, but because of the money I make I have to

pay \$35 for a visit and \$10 for medicine in the pharmacy,” Fuentes said. “But it is good. I am very happy with my doctor, Dr. Sherri Onyiego. ... The only thing I don’t like is that there are many things this clinic doesn’t have. The eye doctor only comes once or twice a week, so the appointments are very late.”

Through volunteer support, community partnerships and generous donations, San José Clinic cares for many of the 150,000 Harris County residents who fall into the coverage gap.

“To me, the most important thing in life is respect in human beings,” Fuentes said. “I respect people when they respect me. And as a noble, peaceful person, I think that I deserve good health care.” ■

— By Britni N. Riley

said. “Your heart is barely beating. There’s no reason you should be alive.”

Up until that point, Trahan did not have a pre-existing condition. But after undergoing an emergency triple bypass to repair her heart, she would forever live with a compromised heart that requires medication and routine checkups.

Prior to the Affordable Care Act, Trahan and other patients could legally be denied insurance and specific treatments at any moment because of pre-existing conditions. But through the marketplace exchange created by the ACA, Trahan purchased an affordable Blue Cross Blue Shield plan in 2015 that covered all of her medical needs and allowed her to see specialists to treat her pre-existing condition.

Her condition improved and she went back to logging miles on the running track.

“The only thing that saved me was that there was a non-pre-existing

clause,” Trahan, now 54, said.

Although her monthly bill of nearly \$700 was expensive, she was still able to get the health care she needed without the risk of being turned away. She considers herself a success story of the ACA, but she was only able to enjoy the comprehensive health care plan for a year before a host of insurers pulled out of the Texas market in 2016. Those that remained upped their rates.

Trahan was offered a more expensive HMO with Blue Cross Blue Shield that came with a monthly cost of nearly \$1,000, a higher copay and far less coverage. She opted, instead, for a community health plan that still restricted her to local physicians and limited coverage.

“Surviving what I survived—endless days of being intubated, not knowing if I was living or dying—all of that is so traumatic, certainly, but just being on the phone with the insurance company is traumatizing,” Trahan



Credit: Courtesy photo

said. “Being told ‘No.’ Being told, ‘Your policy doesn’t cover that.’ Being told, ‘That’s pre-existing.’ Being told, ‘That’s not an option for you.’ Being told, ‘You can’t go to this hospital.’ Being told,

‘You can’t see these specialists.’ That is more traumatic for me than going through all of what I’ve been through.” ■

— By Shanley Chien

# IUD Rush

*Uncertainty about the future of the Affordable Care Act has women seeking longer-term birth control*

BY SHEA CONNELLY



*The Skyla IUD, left, and the Mirena IUD, right. Credit: Andy Tullis/The Bulletin via AP*

A few weeks after Inauguration Day, Megan Toomey paid a visit to the doctor. She left the office that afternoon with a newly inserted IUD and peace of mind. Toomey is part of a growing group of women following the 2016 election who are opting to have IUDs placed due to uncertainty about the future of the Affordable Care Act (ACA) and the comprehensive contraceptive coverage it provides.

Since former President Barack Obama enacted the ACA, women have enjoyed free or greatly reduced access to a variety of contraceptives, thanks to a

provision mandating coverage of “all Food and Drug Administration approved contraceptive methods ... for all women with reproductive capacity.” During a vote just days before the Jan. 20 inauguration, however, the Senate took a major step toward repealing the ACA while simultaneously opting not to approve an amendment to continue requiring contraceptive coverage even if other parts of the bill are repealed.

For many women, this further cemented their fear that access to birth control could soon be limited. Some took to social media to voice concerns and urge

women to take stock of their reproductive futures. For others, it was the final push needed to make an appointment to have an IUD inserted.

“I chose the IUD, and Mirena specifically, because it lasts for five years,” said Toomey, a Houston mother of a 1-year-old. “It gives me comfort to know that by the time I need to make another decision about birth control, our political climate will hopefully be different.”

Toomey added that she had never had an IUD placed before because she was concerned about the pain of insertion, but decided the financial benefits of the IUD now outweighed the possible negative aspects. The process did not require a copay.

Had it not been covered, “paying the \$700 for the IUD and \$300 for insertion would not have been manageable,” she said.

Analysts for electronic health record company athenahealth studied 1 million patient visits to the 85,000 providers in their network and discovered that between October and December 2016, visits to obtain IUDs rose 19 percent over the same time period the previous year. The researchers say this is the first time in five years that IUD requests increased in both November and December.

In the Houston region, Planned Parenthood Gulf Coast has seen an even greater spike in IUD requests in recent months. From Nov. 1, 2016, through Jan. 31, 2017, providers at Planned Parenthood Gulf Coast inserted 656 IUDs. In the same time period the previous year, the organization placed 381 IUDs. This amounts to a 72 percent increase.

Laura Thomas, nurse practitioner and Planned Parenthood Gulf Coast senior director of clinical services, said she has noticed a change in the attitudes of the women she treats. Typical reasons she hears for choosing IUDs include not wanting to take a pill every day, wanting to avoid hormonal birth control and not wanting to have a period every month. Lately, she’s noticing something new.

“I’ve been hearing different things from patients than I’ve ever heard before,” said Thomas, who has worked for the organization since 2009. “Even just yesterday, when I asked a patient, ‘Why did you choose this method?’ She said, ‘Because I’m worried I’m not going to have coverage.’”

For women uncertain about future access to contraceptives or even health insurance, IUDs are appealing because they are designed to prevent

“I chose the IUD, and Mirena specifically, because it lasts for five years. It gives me comfort to know that by the time I need to make another decision about birth control, our political climate will hopefully be different.”

— MEGAN TOOMEY  
Houston patient



pregnancy for at least three and up to 10 years.

IUDs are T-shaped devices inserted into the uterus. Copper IUDs, like ParaGard, do not have any hormonal medication in them, while IUDs like Mirena, Skyla and Liletta do.

The first way IUDs work is by preventing sperm from meeting an egg. The copper IUD releases copper ions, which essentially work as a spermicide. Hormonal IUDs release progesterin, which increases production of cervical mucus. This essentially works as a barrier method, making it more difficult for sperm to pass through the cervical canal.

"If you have a really determined sperm that manages to make it all the way through anyway, because that T is sitting there, it also makes it more difficult for the sperm to move throughout the uterus and enter the fallopian tubes, where eggs are normally fertilized," said Jennifer Bump, M.D., associate professor of obstetrics and gynecology at Baylor College of Medicine. "If both of those mechanisms fail and the sperm manages to fertilize an egg, it also makes it difficult for the egg to implant into the uterine lining."

IUD failure rates are under one percent, which is comparable to both male and female sterilization, according to the Centers for Disease Control and Prevention.

**"I worry because patients seem to have this level of anxiety and fear that I've not seen before. They're just really worried they're not going to have access."**

— LAURA THOMAS, R.N. WHNP

Senior director of clinical services at Planned Parenthood Gulf Coast

While insurance providers are mandated under the ACA to offer coverage for contraceptives, the IUD is a cost-effective and long-lasting choice. If that mandate is eliminated, the price of an IUD would be prohibitively expensive for many women.

"The IUD is a big upfront cost. It's less expensive overall if you use it the full five or 10 years, but a lot of women can't afford to pay \$900 all at once," Bump said. "They could afford a \$30-dollar a month pill, but it's more prone to error. It's something you have to physically do every day."

The proposed dismantling of the ACA is adding a lot of stress to a decision providers say should be based on a patient's lifestyle and health history rather than finances and accessibility. And even greater than the full cost of an IUD is the price of an unplanned pregnancy, the rate of which has dropped in the years since contraceptive coverage was expanded, according

to the Guttmacher Institute, a research and policy organization that advances sexual and reproductive health rights.

"Looked at from solely a cost perspective, it's much more expensive for us as a society to pay for uninsured women to have babies than it is to pay for birth control," Bump said.

An increase in IUD implantation is not necessarily a bad thing, Thomas noted, given their safety and effectiveness. The emotional toll health coverage turmoil has on women, however, is concerning for the health care providers who counsel them.

"I worry because patients seem to have this level of anxiety and fear that I've not seen before," Thomas said. "They're just really worried they're not going to have access." ■

**Express**  
HOMES  
CITY PARK | 1,462 - 2,600 SF

drhorton.com/houston

**MODEL HOME:**  
12102 Paseo Place  
Houston, TX 77047

From the \$190s

**MINUTES from the MEDICAL CENTER,  
RELIANT CENTER and the GALLERIA AREA!**



Mention this ad to receive a  
**Move-In Package**  
with home purchase!

Call our Online Sales Counselor at  
281-853-8418 for more information  
or to make an appointment!

*Why rent when you can own?*

Prices, plans, features, options and co-broke are subject to change without notice. Additional restrictions may apply. Square footages are approximate.



EQUAL HOUSING  
OPPORTUNITY

# Knowing What to Expect

## PreSeek tests for genetic abnormalities

BY ALEXANDRA BECKER

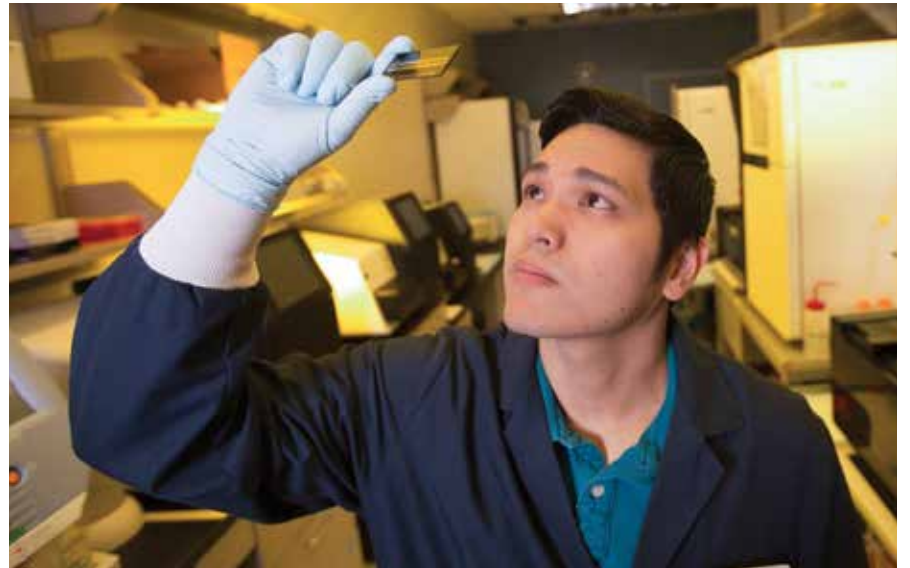
Planning for the future? Now, as early as the end of the first trimester, expectant parents can access more information about the health of their developing baby than ever before.

Baylor Genetics has introduced PreSeek, the first clinical noninvasive prenatal multi-gene sequencing screen. From a single vial of a pregnant woman's blood, the test locates abnormalities in 30 different genes associated with common, uninherited disorders, including a form of dwarfism.

PreSeek is not the first noninvasive prenatal test (NIPT); there are others currently on the market that, like PreSeek, analyze fetal DNA through a sample of the mother's blood. These tests screen for abnormal numbers of

chromosomes (aneuploidies) and whole chromosome abnormalities, which point to conditions like Down syndrome or trisomy 13, 18 or 21. They also examine known areas of the genome for small microdeletions or microduplications that often result in recognizable disorders such as velocardiofacial syndrome, which is associated with cleft palate. But Baylor's new test takes the field a step further—to a single nucleotide level—to determine whether the fetus has abnormalities on single genes.

"We look at PreSeek as a companion to the NIPT tests that are currently out there," explained Christine Eng, M.D., chief medical officer and chief quality officer at Baylor Genetics and



Jefferson Sinson, a research and development scientist at Baylor Genetics who worked on the development of the PreSeek test, holds up a slide containing cell-free DNA.

a professor of molecular and human genetics at Baylor College of Medicine. "We have the NIPT test for aneuploidies and we have the NIPT test for microdeletions and microduplications, and now we can also perform a noninvasive test to look for errors in 30 genes that are common de novo [not inherited] genetic disorders. Together, it's the most comprehensive pregnancy screening available."

This first generation of the PreSeek test screens for genes that are among the most common gene abnormalities associated with serious conditions, including Noonan spectrum disorders, achondroplasia (a form of dwarfism) and other severe birth defects of the skeletal, cardiac and neurological systems. Although these genetic variations and mutations are not inherited—in other words, they are associated with random errors that could occur in any pregnancy—they do become more prevalent with advanced paternal age.

"We know that with advanced maternal age there is a higher frequency of chromosomal abnormalities like Down syndrome, but it's also recognized that with advanced paternal age, there can be an increase in incidents of these single-gene disorders, such as achondroplasia," Eng explained. "So in the setting of advanced paternal age, this test would be useful, and it is actually the first type of noninvasive screening test available to fetuses for this purpose."

PreSeek is especially valuable in pregnancies with abnormal ultrasound findings, including suspected congenital heart defects or the presence

of excess fluid during the fetal nuchal translucency screen. Many of the disorders PreSeek screens for can contribute to these visible abnormalities, Eng said. Before PreSeek, invasive tests—including amniocentesis or chorionic villus sampling (CVS)—would have been the only option for parents looking for more information about an abnormal ultrasound. But amniocentesis, which involves inserting a long needle through the mother's abdomen to obtain a sample of amniotic fluid, and CVS, which is equally invasive for the purpose of testing the placenta, can be risky procedures for the fetus.

"PreSeek provides another step in the screening process, particularly when a couple is not wishing to have an invasive procedure," Eng said. "But PreSeek is still a screening test. If we find something on PreSeek, we would ultimately recommend the couple either have an amniocentesis or CVS to confirm the results."

Baylor Genetics recommends PreSeek during the late first trimester or early second trimester of pregnancy. Although some expectant parents forgo NIPT screening altogether for reasons ranging from ethical to financial, many women welcome it in order to make reproductive decisions or plan for future medical management and care.

"It's all about knowledge and getting as much information about each pregnancy as possible," Eng said. "It's really about being prepared and knowing what to expect in your pregnancy to the best of our ability, today." ■

## A Pear-fect Stay in Pearland

Whether you're taking advantage of the world renowned Medical Center or events at NRG Park, Pearland offers a convenient solution for an affordable stay with great dining and shopping.

### Choose from 11 Pearland Hotels

- Best Western
- Candlewood Suites
- Comfort Suites
- Courtyard by Marriott
- Hampton Inn by Hilton
- Hilton Garden Inn & Conference Center
- Holiday Inn Express & Suites (2)
- La Quinta Inn & Suites
- Sleep Inn & Suites
- SpringHill Suites by Marriott



281.997.5970 • VisitPearland.com  
pearlandcvb@pearlandtx.gov





# The First Few Hours After Losing My Husband

An essay by Kerry McKim

Sunday, Aug. 21, 2016  
8:35 a.m.

My husband had just been declared dead. I sat quietly in a chair on his right, while the doctors were finishing up. Our friend, who is godmother to our daughter and like a sister to me, was sitting on another chair in the corner of the room. We were told to go to the waiting room so they could clean him up. We could come back and see him before they took him to the morgue. My friend and I went out to the waiting room where her significant other was waiting. We knew we had to let people know about my husband's death. My husband worked in politics so my friends made sure that the proper people knew of his passing. I decided to make calls to my family and friends. I wanted to make sure everyone close to us knew before the news of his death started to appear on Facebook.

My first call was to my father. It was his birthday. I had made sure to wish him a happy birthday on his Facebook wall at midnight, because I knew my first call of the day to him was going to be telling him that Bryon was dead, and I wanted to say happy birthday before he got that news. I asked my father to call our relatives.

I called our close friends. Every call started the same, almost as if I was a robot. "Hi, it's me. I was calling to let you know that Bryon passed away this morning." Almost everyone, if not everyone, started to cry or seemed shocked. Bryon came close to dying many times over the five months he spent in the hospital, but he always seemed to bounce back. I think everyone wanted to believe that he was going to bounce back. I know I did. I continued to make each phone call in a robotic manner.

I was surprised at how easy it was to make the phone calls, but I know now that I was in some form of shock. Before my husband died, I always thought that being in shock was a mental state in which one couldn't function at all and that there was some level of not believing the current situation. At the time, I did not think I was actually in shock. I was functioning. I fully understood that his body just couldn't take it anymore. It had been a long five months and I had been staring at all his numbers on the monitor. I knew from his numbers over the previous three days that he wasn't going to bounce back. For five months, I knew that death was a possible outcome, and I thought I was prepared for it. But you are never truly prepared for it.

After the nurse cleaned him up, I was allowed to go back to his room. As I walked in, I was taken aback at how still and quiet it was. The beeping machines that had been working and monitoring his vitals had been shut off. They were no longer needed. After five months, Bryon finally looked like he was at peace. I sat to the left of him and just looked at him.

My friend and I decided to say a Hail Mary. We cried through it. Then the priest came. A member of the pastoral care staff had tried to contact him while he was saying morning Mass and the priest scolded me for the interruption. I remember saying, 'I am sorry my husband didn't die at

a more convenient time. I did not know you were saying Mass and I really could do without the attitude right about now.' I have never snapped at a priest like that before. Let's hope my grandmother never finds out.

Earlier that morning, when the nurse sent me out of the room to clean up my husband, I thought I wouldn't need to come back. I had just spent three days in his room watching him actively die. The death felt so final. I didn't think I needed any extra time, but when I went into the room, I found that I needed to just look at him. I remember thinking about how I was never going to kiss him again or feel his embrace. I was never going to hear him tell a funny story. He had been a person who was so full of life, and now he was gone. I didn't want to leave him. The next time I would see him, he would be in a casket.

His nurse was waiting for hospital transportation to come and take him to the morgue. I began to feel anxious. What if the transporters didn't arrive? What if his body got lost? I felt like I needed to stay there to make sure he was moved to the morgue. I had spent five months monitoring his care and needs. Was his test done? What were the results? Did the specialist see him? Did he get his medicine? Does he want to change the channel on the TV? For five months, I had to have my cell phone fully charged and by my side. One time, when I dropped my daughter off at daycare, I left my phone in the car and had a panic attack when I got back to the car and realized that I had left my phone there. What if something happened to Bryon and they were trying to reach me?

But as I looked at him, I realized that the life was gone from his body and he no longer needed me to monitor every move. It was time for me to go back to Albany. It was time to go home and see my daughter. It was time for me to go home and plan his funeral.

As I walked out of the ICU, I approached his team of doctors, who were rounding on another patient. They all stopped and just looked at me sympathetically. I thanked them for taking care of my husband and told them that I knew they did everything they could.

It was late morning when I walked out of the hospital like I had every day for the past five months. The only difference was this time I was walking out of the hospital for the last time. And it was without him. ■

“He had been a person who was so full of life, and now he was gone. I didn't want to leave him. The next time I would see him, he would be in a casket.”

— KERRY MCKIM



Kerry McKim with her husband, Bryon, and daughter, Maddy. Credit: Courtesy photo





---

# A Bull Rider's BREAKS

---

---

## DESPITE INJURIES, RODEO CHAMPION CODY TEEL HANGS ON

---

By Britni N. Riley

Growing up in Kountze, Texas, a small town outside of Beaumont, Cody Teel was gripped by the idea of becoming a bull rider like his father.

"My dad was a bull rider before I was born, so I grew up hearing stories he would tell about his days as a rider," Teel said, as he dropped feed for cattle at his wife's family's ranch near College Station, Texas. "When I was younger, I would just sit and study a list of all the rodeos and the days. I used to pretend like I was entering them and put them in my schedule."

As the herd of cattle came in to feed, Teel, 24, recalled his early days as a rider. Before he was 10, he was riding calves. By the time he reached high school, he was a full-blown rodeo competitor.

But as his success as a bull rider grew, so did his list of injuries.

"I had had a few minor injuries—broken ribs, broken fingers—before my first major one in 2010," Teel said. "It was my rookie year and a bull's head hit me in the stomach and ruptured my small intestine. So I had to go back, get that fixed, and then I had to go back a second time because of issues with the scar tissue."

The injury put Teel in the hospital for three weeks and out of competition for four months, an eternity for a bull rider.

"Taking time off becomes a financial strain for the riders," said Taylor Brown, M.D., Houston Methodist Hospital orthopedic surgeon and captain of the sports medicine team for the Houston Livestock Show and Rodeo. "It's not like other professional sports where

they have a contract. Those athletes have a salary and they get paid even when they are out. These guys don't get any money if they don't ride."

Another stark difference between professional bull riding and other professional sports is the length of the season. The regular season for riders spans 11 months, while the regular season for professional basketball and football players lasts approximately six months. In addition, bull riders who make it past the regular season spend most of their month off in Las Vegas at the National Finals Rodeo (NFR).

And unlike other professional athletes, bull riders pay their own way to travel to the numerous rodeos they enter each year.

"I'll go until I go broke," Teel said. "You have to go to a minimum of 40 rodeos per year to get your points to go to the NFR in December, so I probably enter 100 to 110 rodeos a year and then I go to 80 or 90, sometimes more. I get on 150 to 200 bulls a year."

In American bull riding, a rider grips a rope that wraps around the chest of the bull. To earn a score, a rider must stay on the bull for eight seconds with one hand on the rope and the other in the air.

### One major injury every year

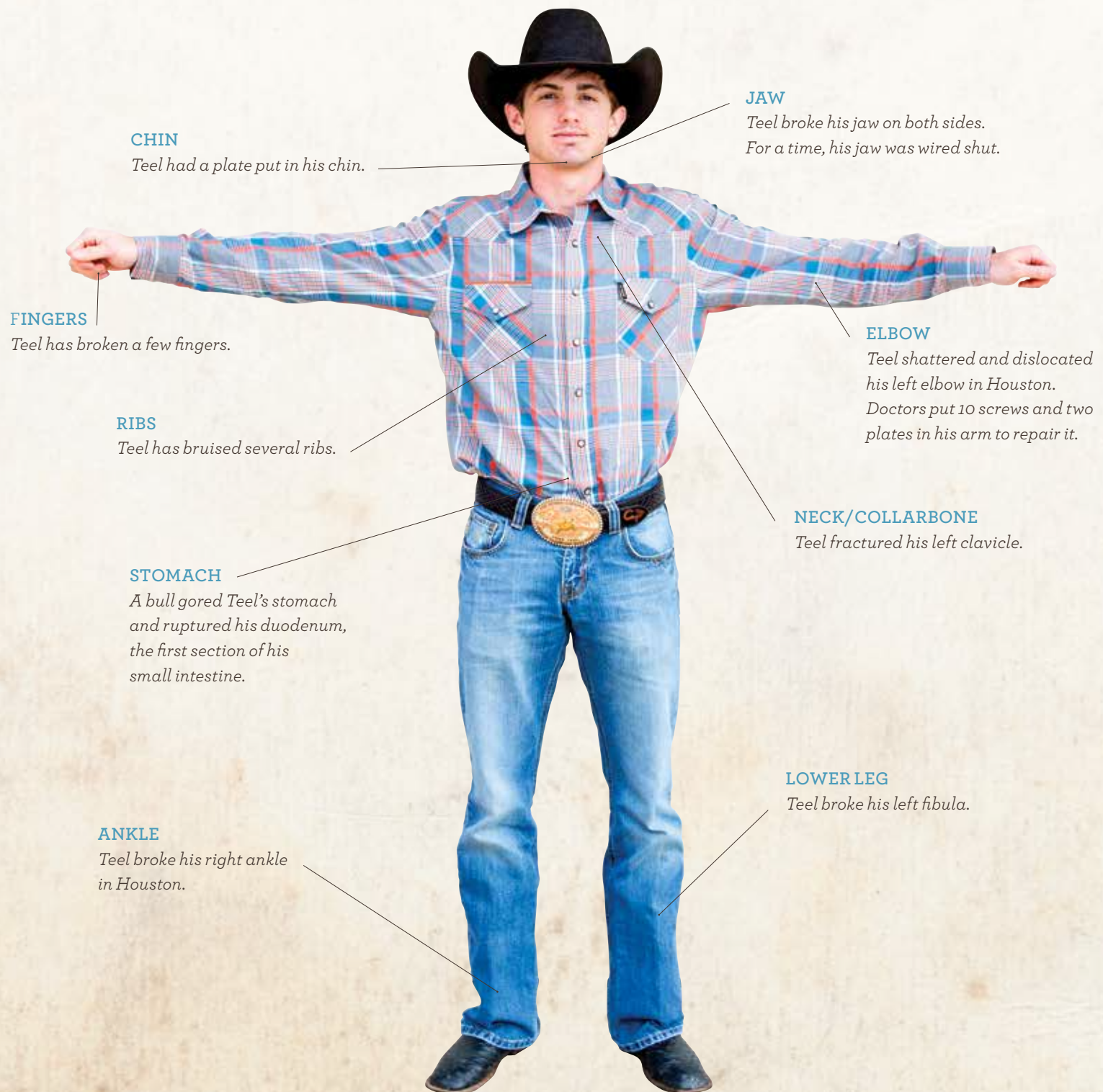
Over the course of his seven-year professional career, Teel has competed in roughly 600 rodeos, won more than \$1 million in prizes and has had at least one major injury every year—a fact that is somewhat remarkable to Brown.

(continued)



# The Buck Stops Here

## CODY TEEL'S INJURIES, HEAD-TO-TOE







Cody Teel during a bull riding competition at the Calgary Stampede in 2016. Credit: Photo by Artur Widak/NurPhoto via Getty Images

"Unlike other contact sports, bull riding is one of those where it's a 2,000-pound animal versus a 150- to 200-pound person," Brown said. "To me, what is amazing is how few injuries there are. As a physician who is watching it, I think, how is it that everybody doesn't get hurt?"

Coming back from a physical injury takes mental stamina.

"After my first injury, just getting back, knowing that I wasn't a piece of glass that would shatter if I fell, that was tough," Teel said. "The mental side was the biggest thing for me, more than the physical toll it took on me."

In March 2013 at the Houston rodeo, Teel pulled up on the neck of a bull. He was struck in the head, knocked from the bull and then hit the ground, unconscious.

"When Cody was injured in Houston, it was something you could see from the arena—we all saw his arm go backwards," Brown said. "Most of the injuries aren't

so readily visible or apparent on TV. Most of the guys can limp or walk off and then we can patch them up back in the training room, but that wasn't possible."

After the fall, Teel was taken to Houston Methodist Hospital to repair his left elbow, which was dislocated and shattered. During surgery, doctors fitted 10 screws and two plates in his elbow.

Each year, Houston Methodist sends approximately 80 rotating health care professionals to the Houston rodeo, including EMTs, athletic trainers, physical therapists, massage therapists, orthopedic surgeons, ER doctors, primary care doctors, chiropractors and nurses.

"I always say that if you're going to get hurt, Houston is a good place to do it," Teel said. "They can do a lot of sports medicine and X-rays right there at the rodeo, but if you need something else, you can be at the hospital in five minutes. It's very helpful when you are in a bad situation."

(continued)





“I always say that if you’re going to get hurt, Houston is a good place to do it. They can do a lot of sports medicine and X-rays right there at the rodeo, but if you need something else, you can be at the hospital in five minutes.”

— CODY TEEL  
*Champion bull rider*

#### A broken ankle and a new love

The rest of 2013 was a tough year for Teel. Just three months after injuring his elbow, he broke his jaw on both sides. To heal, his jaw was wired shut and a plate was put in his chin.

“Depending on the injury, I usually take three or four months off,” Teel said. “The more injuries I have now, I kind of know the deal and I know how to recover. It’s just more about the mental part of it—you have to know yourself, know where you are at in the healing process, and climb back on.”

The following spring, he was ready to take on the Houston rodeo again.

“I went to the Houston rodeo every year growing

up,” Teel said. “To get the chance to ride there means a lot to me.”

He didn’t end up with the title in 2014. Instead, he walked away from the Houston rodeo with a broken ankle and a new girlfriend, Kaitlin. They got married last November.

“We had been talking for a while, but he actually asked me to officially be his girlfriend while we were at the rodeo,” Kaitlin said. “I never thought in a million years that I would end up with a rodeo guy. ... He is very reserved, respectful and nice.”

The two share a 4.5-acre ranch outside of College Station. Inside their home, evidence of Teel’s rodeo success is everywhere. Saddles line the wall of their



living room and buckles from his winnings are displayed under a glass coffee table. Outside, you'll find miniature pigs named Wilbur and Porky, a miniature horse and a flock of miniature goats.

"Cody is on the road a lot so he lets me get all of the animals I want," Kaitlin explained. "Wilbur and Porky are pretty much like our children."

Kaitlin has seen the toll bull riding takes on her husband.

"At first it was really scary to see him get injured so much," she said. "But now that I'm used to it, I get more nervous about seeing the results than I do about the injuries."

This year, Teel has taken a longer off-season than normal to heal his broken left clavicle, an injury from the National Finals Rodeo in December.

"As a rider, it is really up to you when you want to go back," Teel said. "I was cleared by my doctor to go back to riding, but the only thing I have on my schedule for sure right now is Rodeo Houston. I've been using this time to sit off and it has built a fire in me."

Teel has been riding a stationary bull at home to maintain his core strength. He has also been using a stationary bike and working out regularly in his home gym.

"I don't know a lot about fitness and I don't have a strict routine I follow, but I do a lot of core workouts, lunges, squats and hip flexors because my hips get so sore," he said. "I think being flexible helps a lot when

### HOUSTON LIVESTOCK SHOW AND RODEO

**WHEN:** March 7–26, 2017

**WHERE:** NRG Park

**DETAILS:** The Houston Livestock Show and Rodeo welcomes more than 2 million visitors each year and hosts exhibitors of all ages vying for a chance to become a Houston champion. In addition to the competitions, the rodeo offers food, merchandise and concerts.

**INFO:** [rodeohouston.com](http://rodeohouston.com)

you are riding."

As the Houston rodeo approaches, Teel is looking forward to winning it all.

"I've been close before, but I want to win it," he said. "The first thing that comes to my mind is that buckle—a very unique, rectangular-shaped buckle—and the saddle that says 'Rodeo Houston Champion Bull Rider.' That's what I want to win." ■



# Leading by Example

## Women at the TMC

BY SHANLEY CHIEN

In the field of academic medicine, some progress has been made toward gender equality, yet the vast majority of leadership positions still go to men. In honor of Women's History Month, *Pulse* profiles two women who have inspired younger generations at the Texas Medical Center.

Janet Butel defied the social expectations of her time.

Instead of finding a suitable husband to marry at Kansas State University—so many women of that era pursued “MRS degrees,” she said—Butel pursued a Ph.D. in virology from Baylor College of Medicine, where she graduated in 1966.

She had few female colleagues and often found herself the lone woman in classrooms full of men. But she took it in stride.

“You know, that didn’t bother me,” said Butel, Ph.D., Distinguished Service Professor of molecular virology and microbiology at Baylor College of Medicine. “The guys would ask me to explain things to them and help them. I never felt like it mattered.”

Propelled by curiosity and a love of research, Butel, now 76, tore down gender barriers in her field and earned many “firsts” at the medical school—all while juggling her roles as the wife of a physician and mother of two children, who would grow up to become doctors, as well.

At Baylor, Butel became the first woman to be awarded an endowed professorship, the first woman to be named a Distinguished Service Professor and the first woman to chair an academic unit, which she has done for the past 28 years. In honor of her extensive scientific career and accomplishments, Houston Mayor Sylvester

Turner declared Jan. 6, 2017, Dr. Janet Butel Day.

“I notice now with the younger women who come to school here, they have no idea what it was like in the ’60s and the ’70s,” Butel said. “When I became chair, I felt like I was given an opportunity to show that women could do as well as men here, because at Baylor, there were very few women in any leadership positions at that point. I felt like I had the opportunity to have an effect locally.”

### Setting a tone

Like Butel, Elizabeth Travis, Ph.D., draws on her early experiences to



Janet Butel, Ph.D., analyzes radioisotope records in a Baylor College of Medicine lab in 1975. Credit: Baylor College of Medicine Archives

empower women entering the field of medicine today. She was one of two women in her graduate radiation chemistry class at the University of Pittsburgh.

“The professor said he had no idea why we were there,” Travis recalled. “He thought we were just going to get married and have kids, that we were taking the space that men should have. That was quite common then. That’s what people thought. That’s how people saw it.”

“Women credited me for having an impact on their life, of which I was totally unaware. It was mostly just being there. They could see me.”

— JANET BUTEL, PH.D.  
Distinguished Service Professor of  
molecular virology and microbiology  
at Baylor College of Medicine

Travis, 69, has been on the faculty at the University of Texas MD Anderson Cancer Center since 1982. She was promoted to professor in 1988 and has been a pioneer in the study of pulmonary complications of cancer therapy.

In 2007, Travis was appointed Associate Vice President of Women and Minority Faculty Inclusion at MD Anderson. Her mission is to bring more women and minorities to the leadership table to serve as role models.

“There’s a good pipeline now for women in science and medicine,” Travis said. “Most people don’t think a woman can’t do this or that job, except for when it comes to leadership. Somehow we’re having a hard time there.”

Today, women account for nearly half the population of medical students and residents, according to a recent report by the Association of American Medical Colleges. Yet as the positions grow more elevated, the gender disparity widens. The same study shows that only 21 percent of full professors are



WOMEN IN ACADEMIC MEDICINE



Source: The State of Women in Academic Medicine: The Pipeline and Pathways to Leadership, 2013-2014, Association of American Medical Colleges

“If there are no women in leadership positions, you may as well put up a big sign on the door that reads: ‘Women need not apply.’”

— ELIZABETH TRAVIS, PH.D.  
Associate Vice President of Women and Minority Faculty Inclusion at  
The University of Texas MD Anderson Cancer Center

women, and just 16 percent of medical school deans are women.

**Stepping up**  
For their years of service and contributions to the Texas Medical Center, Butel and Travis were inducted into the TMC Women’s History Project in 2015. Since it launched in 2013, the project has selected five women from various TMC institutions every year who have paved the way for future women leaders in science and medicine. To be eligible, a woman must have worked at a TMC institution for at least 20 years.

The Texas Medical Center has “a lot of terrific women,” Travis said. And the project, she added, helps put faces and names to female leaders.

“Leadership sets a tone,” she said. “When women and minorities see people who look like them in leadership positions, they think they have that opportunity, as well. If there are no women in leadership positions, you may as well put up a big sign on the door that reads: ‘Women need not

apply.’ I think it’s up to people like myself, who are senior, to ... make sure that women are prepared to step up and compete for leadership positions. I think that’s critical. For me, that’s what my life has really been about for the past eight to 10 years.”

Bearing witness to female leaders can be a source of inspiration to younger generations.

“Women credited me for having an impact on their life, of which I was totally unaware,” Butel said. “It was mostly just being there. They could see me. Sometimes they would ask me questions or ask for advice, but quite a number of the people who said this, I had no clue that they saw me persisting, surviving, accomplishing something. ... It gave them hope and the knowledge that they can do this, too.” ■



Elizabeth Travis, Ph.D., at The University of Texas MD Anderson Cancer Center.

# A Football Pitch

Nine startups compete in the 1st and Future pitch competition at TMCx

BY ALEXANDRA BECKER

Super Bowl Sunday featured a historic showdown between the two best teams in the NFL, but it wasn't the only major competition taking place in Houston over game day weekend.

On Feb. 4, nine startup companies, culled from more than 200 entries, descended on the Texas Medical Center's Innovation Institute accelerator (TMCx) to pitch their solutions to some of football's biggest problems. The second annual 1st and Future pitch competition is an opportunity for startups across the country to share their ideas and prototypes with an exclusive audience made up of NFL and industry VIPs, as well as a panel of expert judges.

One company in each category—'Communicating with the Athlete,' 'Training the Athlete' and 'Materials to Protect the Athlete'—won \$50,000, acceptance into the TMCx startup program and two tickets to Super Bowl LI.

GoRout took the prize in the communication category with its onfield wearable technology that sends play calls and coaching tips to players in real time.

"I can't tell you how important of a milestone this is for our organization," said Mike Rolih, chief executive officer of GoRout, during a press conference following the event. "Being a young startup, you're always looking for traction, you're always looking for the opportunity to take another step forward."

Not surprisingly, two of the three winning technologies were created with concussions in mind.

Windpact, the winner in the category dedicated to materials for protecting athletes, designed a patented padding system that uses air and foam to absorb and disperse energy from impact. The system, intended for helmets and other padding gear, was created under the guidance of retired NFL cornerback Shawn Springs.

In the 'Training the Athlete' category, the 'Mobile Virtual Player' (MVP) emerged as the winner. Created by



Top: TMC Executive Vice President, Chief Strategy Officer and COO William F. McKeon, far left, with NFL Executive Vice President of Player Health and Safety Jeff Miller, and members of Windpact, the winner in the 'Materials to Protect the Athlete' category. Bottom: The Mobile Virtual Player (MVP), winner of the 'Training the Athlete' category.

John Currier and Buddy Teevens, head football coach at Dartmouth College, the MVP is a remote-controlled, self-righting mobile virtual player that removes the need for live tackling during practice and subsequently reduces injuries. The virtual player stands at 5'10" and weighs 180 pounds.

Scott Hanson of the NFL Network emceed the competition, which included introductory remarks from Gov. Greg Abbott, who delivered a moving speech about his own life-changing

experience at the TMC.

"It was because of the care provided at this medical center that they were able to piece my life back together, and then after that enable me to go on and be governor of this state," said Abbott, whose legs were paralyzed in 1984 after a tree limb fell and struck him while he was jogging. "What happens here really sparks medical and science breakthroughs that change the world that we live in. They save lives, they lengthen lives, they transform lives."

TMC President and CEO Robert C. Robbins, M.D., moderated a discussion on innovation and industry partnerships between NFL Commissioner Roger Goodell and General Electric CEO and Chairman Jeff Immelt. The NFL and GE have collaborated on initiatives geared toward the safety of athletes, specifically through accelerating concussion research, diagnosis and treatments.

"We're having the discussion around football today, but it's a broader study of Parkinson's and Alzheimer's and dementia," said Immelt, in reference to concussions. "It's all going to be fed back through the health care system, and this is the definitive health care challenge of this era—the study of the brain."

Ed Egan, Ph.D., director of the McNair Center for Entrepreneurship and Innovation at Rice University's Baker Institute and one of six judges of the competition, said he chose the winners based on business potential and the ability to effect change.

"I worried about all the normal things: total addressable market, how are you going to get there, how are you going to protect your innovation, are you engaging with your users and understanding their needs," Egan explained.

Another judge, Mae Jemison, M.D., the first African-American woman to travel in space and a principal with the organization 100 Year Starship, said she was looking for devices applicable to areas beyond football that would help protect athletes and prevent dangerous situations.

Robbins hopes the competition will help athletes at all levels.

"Whatever the NFL does is going to trickle down to college and to high school and to Pop Warner football, so it's an important responsibility that the NFL has," Robbins said. "I think nothing's perfect, but they are making great strides to make the game safer." ■



# CURATED

The Intersection of ARTS and MEDICINE

By Britni N. Riley



Ron Mueck, an Australian-born, London-based artist, uses silicone, resin, fiberglass and other materials to create sculptures that are often much larger than life, or much smaller.  
Credit: Ron Mueck

Ron Mueck's arresting, hyperrealistic sculptures have made their way to the Museum of Fine Arts Houston.

Works by the Australian artist are known for their keen attention to detail and unusual, disconcerting scale.

"When you see reproductions, you think they are life-size, and when you actually see the works, they are much larger than life-size or much smaller," said Alison de Lima Greene, curator of contemporary art at MFAH. "You feel a little bit like Alice having fallen down the rabbit hole. There is a certain surreal quality to the works that contradicts the realism of the actual artwork."

As an artist, Mueck has dedicated his career to exploring the cycle of life. His art takes viewers through different stages of existence—from birth to death—and showcases salient details: a five-o'clock shadow, wrinkles, after-birth, wounds. In Mueck's world, adults are swaddled like babies and some babies are as big as giants.

"I think artists are asking a lot of the same

questions a doctor does about the meaning of a body, and they are willing to scrutinize it uncompromisingly," de

Lima Greene said. "Ron Mueck has an extremely nuanced and careful understanding of anatomy, and after working on a sculpture, he will make it as absolutely realistic as possible, and then he will do something to make it a little bit less real."

To showcase Mueck's work in a distinctive way, de Lima Greene has designed the

exhibit to emphasize different moments in life, rather than highlight the progression from youth to old age.

"I wanted to focus on the stages of life, not just aging necessarily," she said. "We are not going to install it as from infancy to death, but I wanted those to be things for people to recollect as they walk through the exhibition. We want the imagery to echo in memory rather than to be a straightforward narrative." ■



Ron Mueck will be on display in the Audrey Jones Beck Building at the Museum of Fine Arts Houston, 5601 Main Street, through Aug. 13. Information: 713-639-7300 or [mfah.org](http://mfah.org).

## ON THE SIDE

BY SHANLEY CHIEN



When Claudius Conrad, M.D., Ph.D. operates on a patient, his fingers tease and coax the tissue with precision and grace.

To the outside world, the oncological surgeon is performing advanced laparoscopic surgeries for patients with complex diseases of the liver and pancreas. But to Conrad, a classically-trained pianist who calls himself a “musical surgeon” and a surgical musician,” every appearance in the operating theater is a chance to make art, to perform a magnum opus.

“I didn’t choose surgery,” said the German-born doctor. “Surgery chose me. In my mind, the similarities between being a pianist and being a surgeon are so strong. Sometimes I cannot even distinguish them. A concert performance and a challenging case in the operating theater—it’s almost the same in my mind.”

Conrad grew up outside of Munich in an academic family. His father was a nephrologist

and veterinarian, and his mother was a biomechanical engineer. Although neither of his parents were musically trained, they kept a grand piano in their home. By the time Conrad was 5 years old, his body and soul were drawn to the instrument.

“I always wanted to touch it and play with it, but my parents were like, ‘No, you’ll mess it up!’” Conrad said. “When I finally was allowed to play, it was almost like a relief.”

He pursued his passion for piano, training at prestigious music schools across Europe and competing at numerous piano competitions as a solo and accompanying pianist. He qualified for a high level of a national music competition, but at that time he was fulfilling his military duty as a sniper for the German special forces mountain corps, training in the Arctic Circle.

“I asked my commander, ‘Can I please return to Germany with the support plane to fly

NAME: **Claudius Conrad, M.D., Ph.D.**

OCCUPATION: **Oncological surgeon at The University of Texas MD Anderson Cancer Center**

INTEREST: **Piano**

back to compete?” Conrad recalled. “The commander said, ‘Are you kidding? Yeah, you’re drafted. You’re in the military. This is your job now. Forget about that.’”

Although Conrad didn’t get to compete then, he still considered a career as a full-time professional pianist. However, a piano professor encouraged him to explore his other passions before making a decision.

“I always liked helping people, so I started to study medicine and music at the same time,” Conrad said. “I thought I would decide by studying, but I couldn’t, so I just continued studying both

until I graduated.”

His chronic indecision led him to earn his first Ph.D. in stem cell biology and a second Ph.D. in music philosophy from the University of Munich.

Today, Conrad’s love for music and passion for surgery are inextricably entwined. He uses the same techniques whether he’s performing a complex surgical procedure on a patient in the operating theater or performing Frédéric Chopin’s Polonaise in A-flat major, Op. 53, in front of thousands of spectators.

“When you have a challenging situation in the operating room where you have bleeding



and an emergency, you're in a lot of stress," he said. "But that is the moment when you want to be most relaxed, the most sensitive to the feedback the tissue gives you in order to save the patient's life. It is very similar to a concert performance where you want to make the most beautiful music when you are onstage under stress. It's about ... being able to take a step back and control your breathing, control your heart rate and be very focused."

To become an effective, ambidextrous surgeon, Conrad modified his daily routine. For example, he brushes his teeth with his left hand in the morning and alternates wrists for his watch every other day. In his current role as a teacher of surgery, he gives the assistant the optimal position at the operating table. Conrad stands on the opposite side of the table and uses his non-dominant hand to perform procedures.

"If you have to always position your body so that your right hand engages, No. 1 the dissection will not be as high quality, and, No. 2, I don't think it's good for your body," he said.

Conrad's musically-trained brain allows him to think abstractly.

"When you look at an X-ray, to some people, it's just shades of black and white, but it's the deeper meaning that's within

there," he said. "When I look at music, I hear it in my head. I think about how I'm going to play it. I think about the phrasing. ... I think about possible imagery; it should sound like sun breaking through the clouds."

Conrad listens to music while he operates. In a recent paper he and his colleagues published, they showed that music in the operating room can help to improve team dynamics.

"We know that anesthesiologists—part of their job description is to follow auditory encoded information (including alarms)—like so-called 'reflective' music, like classical music or jazz music," he said. "Surgeons, who have to execute prolonged motor performance, often enjoy so-called 'activating' music. Classical music can be a good common denominator for an OR team."

Whether he's listening to Bach on his bike ride to work, performing surgery to Mozart or playing Chopin from memory on his piano at home after a long day, Conrad's love for music is an essential part of his daily life.

"Music has such an important role," he said. "It touches us so deeply without physically doing anything to us. It's so interesting to me that sound-waves can create this very strong experience." ■



# NEW & PRE-OWNED HOME

## Showcase!



Over  
50 homes  
OPEN!

Weekends  
in March!

20 NEW Model Homes  
and a great variety of  
previously-owned homes too.

FOLLOW *the* SIGNS!

New homes from the \$280s!

[siennaplantation.com](http://siennaplantation.com)

*Live Well. Play Hard. Have Fun.*



Sienna Pkwy at Hwy. 6



Darling . CalAtlantic . Chesmar Homes . David Weekley  
Gracepoint . Highland . Meritage . MI Homes . Newmark . Perry  
Shea . Taylor Morrison . Toll Brothers . Trendmaker . Westin

# Treating Parkinson's

## *Brain stimulation and early detection*

BY CHRISTINE HALL

The uncontrollable twitching began in Steve Sawyer's big toe, on his right foot, about nine years ago.

Sawyer, then 49, went to see a neurologist, who thought it might be early-onset Parkinson's disease, a degenerative brain disorder that initially affects motor skills, causing tremors, stiffness, slowness of movement and impaired balance. As the disease progresses, patients may develop cognitive problems, psychiatric alterations and dementia.

Sawyer was referred to Joseph

Jankovic, M.D., director of the Parkinson's Disease Center and Movement Disorders Clinic at Baylor College of Medicine, who prescribed the typical regimen of medication, starting with a couple of pills a day. But Sawyer quickly discovered that as the disease progressed, more and more medication was required to control his tremors.

"Plus, the medication gives you side effects, like drowsiness, so you have to take a medication to offset that," Sawyer said. "It is a bad spiral you go

down. Initially, it is a slow hill, but it seemed like overnight that it got pretty bad."

Indeed, things got so bad that Sawyer began to refer to Jankovic not as his Parkinson's doctor, but as his "pill doctor."

Though it is hard for him to admit, Sawyer considers himself pretty lucky with the disease, because he only has bad tremors on his right side—in his leg and hand—and he can mask them by keeping his hand in his pocket. He was so good at hiding the symptoms of Parkinson's that he didn't reveal his diagnosis to his grown children until a year ago, around the time he decided to pursue a new treatment.

"They were getting started in life, and I didn't want them to be burdened," Sawyer explained. "I didn't want people knowing and looking at me any differently. When I decided to do the new treatment, I started letting people know, like my family and neighbors. It was interesting to have them ask what I was up to, and to tell them I was going to have brain surgery."

It was Jankovic who told Sawyer about an opportunity for a new treatment with Joohi Jimenez-Shahed, M.D., an assistant professor of neurology and director of the Deep Brain Stimulation Program at Baylor. Sawyer became the first CHI St. Luke's Health-Baylor St. Luke's Medical Center patient to receive an updated form of deep brain stimulation, a surgery reserved for patients with movement disorders who are no longer responding well to medications.

The deep brain stimulation surgery occurs in two stages. In the first stage, wires outfitted with electrodes are inserted into the brain. In the second stage, the wires are hooked up to a battery pack—a pacemaker-like device

inserted into the chest—that controls the stimulation, Jimenez-Shahed said.

This type of procedure has been done for more than 20 years, but a new device from St. Jude Medical makes it possible to control the stimulation from the doctor's office using a wireless iOS software platform on an iPad mini device. Doctors had not been able to do this before. Patients can also use an iPod Touch device controller to discreetly manage their symptoms.

"The device allows us more programming capabilities, like adjusting the stimulation to steer the electrical current right where we need it to go," Jimenez-Shahed said. "That is important, because if the current is too close to adjacent brain structures, it might also deliver stimulation there and cause unwanted side effects."

Sawyer liked the idea of a treatment that targeted the areas where his tremors occurred. The problem was that the device did not yet have U.S. Food and Drug Administration approval, so even though he had met the criteria to be a candidate, he had to wait.

But not for long. Last October, the deep brain stimulation system received FDA approval. Today, five months after the device was implanted, Sawyer and his doctor continue to figure out how best to adjust the equipment settings.

Jimenez-Shahed said the battery pack will eventually need replacing, but can last between three and five years, depending on the amount of current.

Sawyer has cut back on all his medications, taking just one tablet four times a day. He used to take three tablets four times a day and one tablet at night to sleep.

The deep brain stimulator allows patients to better control their symptoms, reduce the "off" time when the drugs aren't working as well and



## Run for their lives.

### 2017 Donate Life Texas 2nd Chance Run



**HOPE**

2017 Donate Life Texas  
2nd Chance Run

hosted by  
**LIFEGIFT**

**5K and 1-Mile**  
**Saturday, April 22, 2017**  
**Constellation Field**  
*Sugar Land*

More than 120,000 people across the country are waiting for lifesaving organ and tissue donations. Lace up your running shoes to show the community how easy it is to give those people hope for a second chance.

**Register at**  
**2ndChanceRun.org**



eliminate dyskinesia, or difficulty performing voluntary movements, Jimenez-Shahed explained. Overall, it helps patients feel less dependent on the medication.

That's good for Sawyer, who continues to work as an architect at a construction consulting company. He said when the illness was at its worst, it was tough to work, especially because his job is stressful.

"Stress and Parkinson's don't go well together," Sawyer said. "This procedure has been a benefit to me, though my doctor did tell me if I wanted to

keep working, I needed to get a less stressful job."

### 'Early diagnosis means good treatment'

Meanwhile, scientists at McGovern Medical School at The University of Texas Health Science Center at Houston (UTHealth) are working on early detection of Parkinson's disease, so patients like Sawyer can get a diagnosis long before any tremors or twitches send them to the doctor.

UTHealth scientists are studying abnormal proteins associated with



The St. Jude Medical Infinity DBS System. Credit: Reproduced with permission of St. Jude Medical.

Parkinson's disease in cerebrospinal fluid and trying to develop a biochemical test to diagnose the disease.

There are no current laboratory or blood tests that have been proven to help diagnose Parkinson's, said Claudio Soto, Ph.D., a professor in the department of neurology and director of The George and Cynthia Mitchell Center for Research in Alzheimer's Disease and Related Brain Disorders at UTHealth. By the time patients manifest symptoms, he said, their brains have already seen significant degeneration.

(continued)

“The device allows us more programming capabilities, like adjusting the stimulation to steer the electrical current right where we need it to go. That is important because if the current is too close to adjacent brain structures, it might also deliver stimulation there and cause unwanted side effects.”

— JOOHI JIMENEZ-SHAHED, M.D.

Assistant professor of neurology and director of the Deep Brain Stimulation Program at Baylor College of Medicine

# Luxury Apartments

## THE PARKLANE

[www.Theparklane.com](http://www.Theparklane.com)





Both furnished and unfurnished corporate units available!



**Corporate Units Available**  
 For 3 Month+ Leases  
 Medical Stays  
 Visiting Academic and Medical Professionals  
 On Site Dog Park ☀️ **NEW!**  
 Shuttle to all Major Hospitals in the  
 Texas Medical Center  
 Electric Vehicle Charging Stations  
 On-Site Storage Included  
 Assigned Garage Parking  
 No Water or Garbage Bills  
 24hr. Valet & Concierge Service  
 Pets Accepted  
 Minutes from Texas Medical Center  
 Sophisticated Surveillance System  
 Discount to Texas Medical Center Employees




1701 Hermann Dr. | 713.526.VIEW



Credit: Alex Luster with The Storyhive

“We envision in the future a noninvasive test that someone would take during their 40s or 50s that would be as common as a test to check for cholesterol level.”

— CLAUDIO SOTO, PH.D.

Assistant professor of neurology and director of The George and Cynthia Mitchell Center for Research in Alzheimer's Disease and Related Brain Disorders at UTHealth

“At the clinical phase of Parkinson's and Alzheimer's diseases, there is substantial damage in the brain that is often irreversible,” Soto said. “The brain can cope with a large amount of damage, and only when brain degeneration becomes major is when people start getting symptoms.”

Soto wants to identify the brain damage responsible for Parkinson's disease earlier. There are some experimental treatments for Parkinson's out there, he said, but many scientists and clinicians say they have failed in clinical trials because the treatment started too late.

“Early diagnosis means good treatment,” Soto said.

His research, funded in part by grants from the Michael J. Fox Foundation for Parkinson's Research, was published in the Dec. 2016 issue of *JAMA Neurology*, a journal of the American Medical Association. The

first author of the paper is Mohammad Shahnawaz, Ph.D., of McGovern Medical School at UTHealth.

Using technology developed by Soto that has been shown to find abnormal proteins (known as misfolded proteins) associated with diseases such as Creutzfeldt-Jacob and Alzheimer's, researchers detected very small amounts of the misfolded proteins circulating in cerebrospinal fluid.

The hope is that someday, a simple test will be able to detect these misfolded proteins in blood or urine.

“We envision in the future a noninvasive test that someone would take during their 40s or 50s that would be as common as a test to check for cholesterol level,” Soto said. “The doctor would test for Alzheimer's and Parkinson's disease, tell you if you have the abnormal protein and recommend what to do about it.” ■



## Find the best outpatient mental health partners at Menninger



When someone in your family needs help to regain mental health, our specialists are ready to assist with:

- One-stop comprehensive psychiatric assessments for ages 6 and older with physician-led specialists
- Individual, family and couples therapy
- Medication management
- Addiction counseling

- Consultations for ADHD, suitable education or vocational setting, autism spectrum disorder and more

**Scheduling appointments within 2 weeks.  
Call today. 713-275-5779**

**MenningerClinic.com** | Named a National Best Hospital in Psychiatry 27 Consecutive Years

Affiliated with Baylor College of Medicine



# An Assist from Microgravity

*Astronauts study human health on the International Space Station*

BY ALEXANDRA BECKER

NASA has a long history of sharing technology and innovations developed for space with other industries—especially health care. Jumping into Houston’s Super Bowl frenzy last month, NASA’s Johnson Space Center hosted #SpaceBowl, which offered tours of the center and an interactive discussion with current crew members of the International Space Station (ISS).

Astronauts on the ISS—known among Johnson Space Center employees as a “giant science lab in space”—discussed current experiments designed to improve human health.

“We’re doing fluid shift studies looking at how the fluids in our bodies shift and make changes in our bodies,” said astronaut Peggy Whitson, Ph.D., a biochemistry researcher and the first female Space Station commander. “In particular, we’re concerned about some of the vision changes that we’ve seen in astronauts and we’re trying to understand that. Another study that I’m in is looking at oxidative damage as a result of being in this environment—a microgravity environment—to look at long-term effects on the potential for cardiovascular diseases.”

Using microgravity as a variable in the experimentation allows researchers to better understand observations on the ground, she explained.

“Hopefully those will contribute to future prevention or understanding of disease,” Whitson said.

The microgravity environment offers unique conditions for understanding specific biological and scientific processes. For example, microgravity provides an ideal setting for the growth of protein crystals. Knowledge of the complicated structures of proteins in the human body is critical for understanding diseases and developing new medical therapies.

Research aboard the ISS, where rotating crews have lived and worked



NASA astronaut Peggy Whitson, Ph.D., collects Fundoscope images of the back of the eye during a routine check into astronaut eyesight. Crew members’ bodies change in a variety of ways during space flight, and some experience impaired vision. Credit: NASA

since 2000, has yielded a wealth of health information, including a better general understanding of aging and bone loss, disease and bacterial behavior, psychological stress response systems and environmental impacts on the human body.

Perhaps NASA’s most famous human research experiment to date is the Twins Study, which gathers data from former astronauts and twin brothers Mark and Scott Kelly. Recently released preliminary findings from the study revealed that Scott’s year in space—compared to Mark’s time on Earth, which served as a genetic benchmark—initiated a number of changes in Scott’s body. In addition to those predicted, including a decline in bone formation, scientists were surprised to find

“In particular, we’re concerned about some of the vision changes that we’ve seen in astronauts and we’re trying to understand that.”

— PEGGY WHITSON, PH.D.  
NASA Astronaut

that Scott’s telomeres—the repetitive sequences at the end of a chromosome, which typically decrease in length as a person ages—actually lengthened during his time in space.

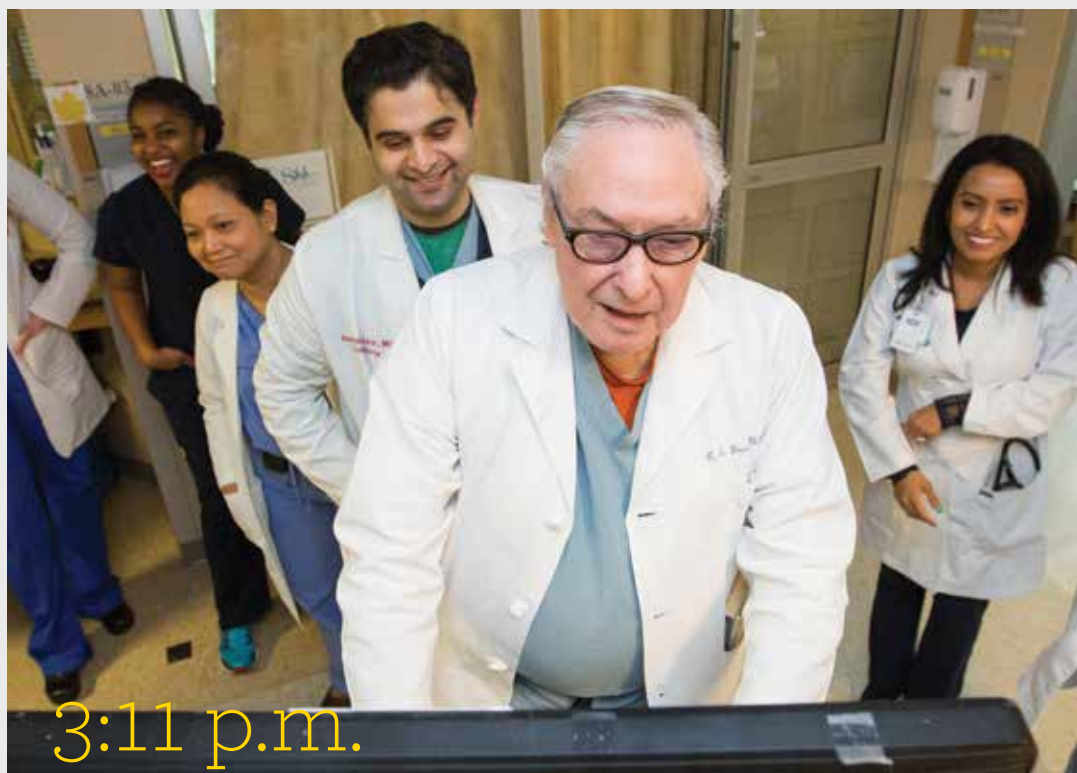
Research on the ISS is geared toward some of humanity’s loftiest goals: curing diseases, developing cutting-edge technologies to enhance everything from diagnostics to communications, and understanding the intricacies of the human body well enough to initiate a journey to Mars.

“We’re ordinary people and we train ourselves to intersect with the extraordinary,” NASA astronaut and retired U.S. Army Colonel Douglas “Wheels” Wheelock explained. “Love what you do and prepare so intensely so when the opportunity for something extraordinary comes along, you’re ready.” ■

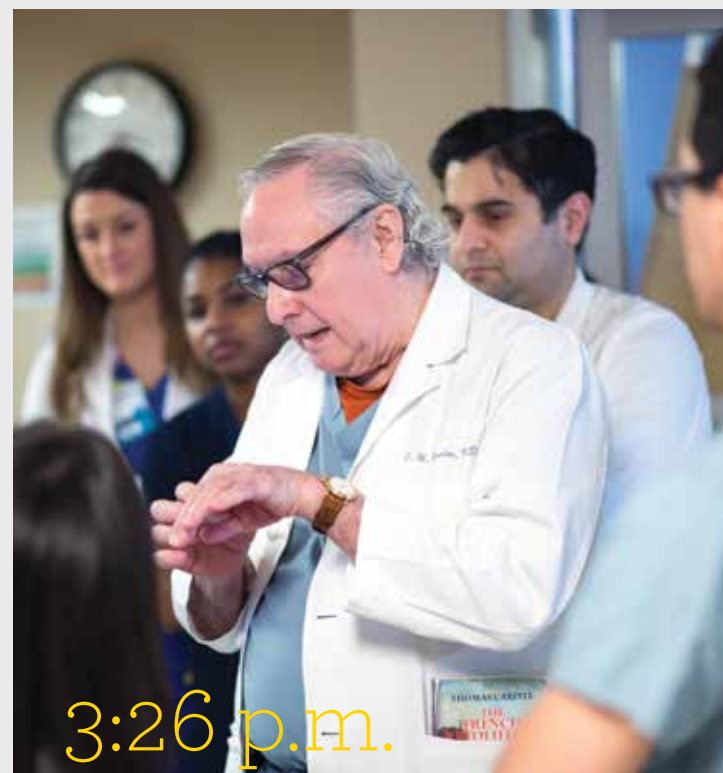
# One Hour with an LVAD Legend

*Heart pump pioneer O.H. “Bud” Frazier, M.D., leads monthly bedside teaching rounds*

BY CHRISTINE HALL



Dr. Frazier is briefed on the patient’s status in the cardiovascular and thoracic surgery unit of Baylor St. Luke’s Medical Center. He learns that the patient’s first pump was implanted in 2013, but she came to the hospital in early 2017 feeling poorly. Her medical team replaced the pump.



Frazier demonstrates the way blood is pushed in and out of the heart after a left ventricular assist device (LVAD) is implanted.



**A**t 3:05 p.m. on a recent Tuesday, O.H. “Bud” Frazier, M.D., pushed through the double doors of the cardiovascular and thoracic surgery unit of Baylor St. Luke’s Medical Center. Immediately, he went in search of some coffee.

A large crowd had congregated to greet and learn from the man who is recognized as the leader in the development of left ventricular assist devices (LVADs).

Last November, Frazier, chief of transplant services at Baylor St. Luke’s, professor of surgery at Baylor College of Medicine and chief of the Center for Cardiac Support at the Texas Heart Institute, launched monthly one-hour bedside teaching rounds on LVADs. Students, interns, residents, fellows, nurse practitioners and physician assistants are invited to spend an hour with him.

LVADs are the most widely-used heart pump. Over the past decade, an estimated 30,000 LVADs have been implanted in patients around the world. These electromechanical pumps, also called mechanical circulatory support devices, were developed by a handful of pioneering heart surgeons from the Texas Medical Center, including Frazier.

“I studied the idea of LVADs for two years with Dr. Michael DeBakey because there were not enough hearts for transplants,” Frazier explained. “Recently, I was in Kazakhstan, where they have implanted 400 pumps. Nobody thought that was possible to do.”

Frazier is a protégé of both DeBakey and Denton Cooley, M.D., but he blazed his own trail in clinical practice, research and teaching. He has performed more than 1,300 heart transplants and implanted close to

1,000 LVADs, outnumbering any other surgeon in the world, according to CHI St. Luke’s Health.

In 1986, Frazier performed the world’s first implantation of HealthMate I, a pneumatically powered LVAD. In 2000, he implanted the Jarvik 2000 LVAD, a continuous-flow pump widely used as long-term support for patients who may not be candidates for transplants. Then in 2011, Frazier and William E. “Billy” Cohn, M.D., implanted the first total heart replacement with two continuous-flow pumps inside a human patient.

During his teaching rounds, Frazier focused on a female patient whose first LVAD failed. Frazier spoke with the patient’s care team and tried to determine what would cause the pump to stop working. Some people have had heart pumps for as long as 13 years without any issues, he explained.

Frazier’s continuous-flow pump design is different from older pulsatile pumps that mimic the healthy human heart and beat 100,000 times every 24 hours. The newer, non-pulsatile pumps produce a continuous flow of blood and are smaller and more durable without the parts needed to produce frequent pulses.

“The pump works like a light that you turn on and off,” Frazier explained. “If they are made properly, which this one was, it can’t be the pump. It has to be something about the way it was implanted.”

The pump spins blood through the heart like coffee that is being stirred in a cup, he explained. It was designed flat so that it could be implanted on the right or the left side of the heart, but works best when placed on the diaphragmatic surface of the heart—the interior surface that rests on the diaphragm.





3:50 p.m.

Frazier visits with the patient to assess how well the new LVAD is working. He asks her to lift up her right leg and push against his hand, which she is able to do.

Frazier examined CT scans of the patient's heart and hypothesized that the way the LVAD was implanted created a problem with the inlet or outlet of blood. Complications can occur when the stent graft is not made big enough to keep the artery open, he said.

Upon hearing that the patient suffered a stroke during the surgery, Frazier called the episode "unusual" and discussed how sometimes the

body goes into shock during surgery, elevating the aortic blood pressure to the point where stroke occurs.

Toward the end of the hour, Frazier met with the patient and spent several minutes examining her and discussing her condition.

"We can't always know what to do," he told the crowd assembled. "But we must try to do what we can to correct problems." ■

#### DR. FRAZIER'S TEACHING ROUNDS

**WHEN:** Third Tuesday of each month from 3-4 p.m.

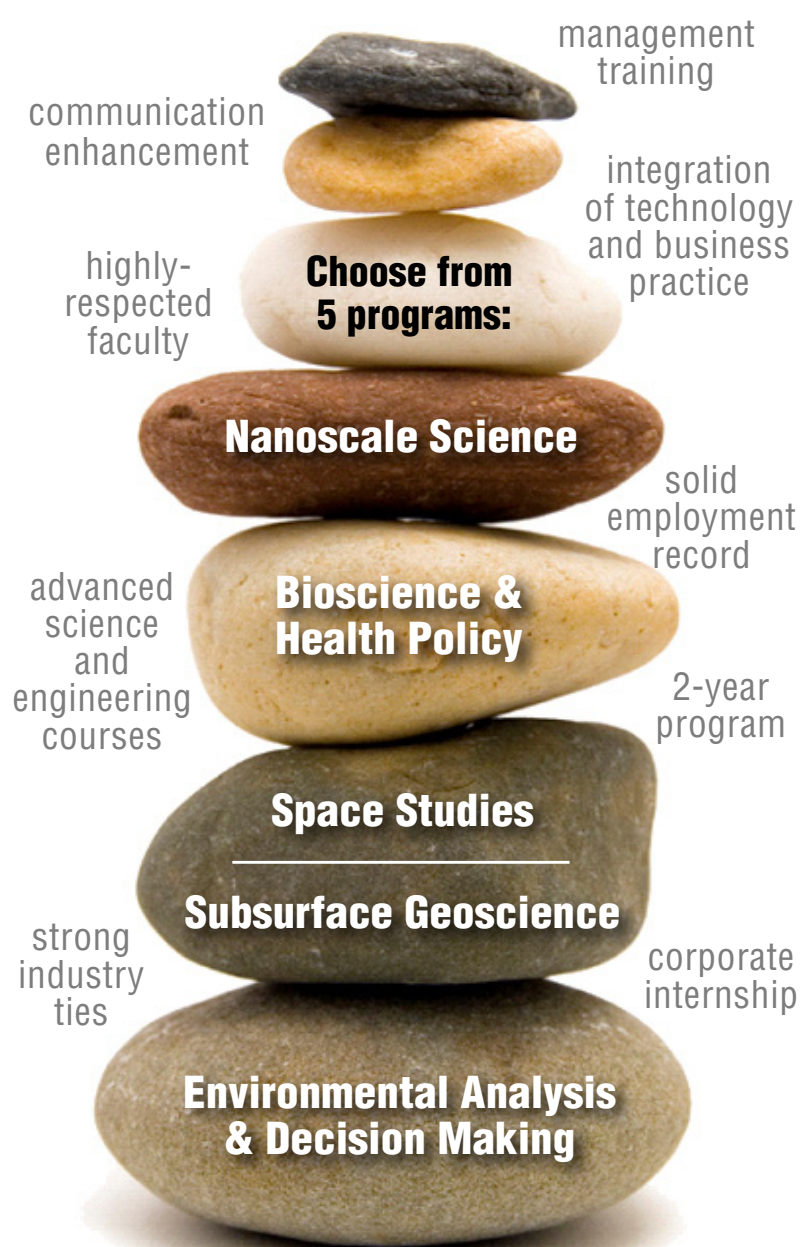
**WHERE:** CHI St. Luke's Health - Baylor St. Luke's Medical Center

**DETAILS:** Open to students, interns, residents, fellows, nurse practitioners and physician assistants. The rounds are also geared toward anyone working in cardiology, cardiac surgery, anesthesia, critical care, perfusion, circulatory support, nursing and any other medical fields that interact with patients with LVADs.

## Professional Science Master's Program

Building a career in science through a balanced curriculum

### ROLLING ADMISSION



RICE

[profms.rice.edu](http://profms.rice.edu)

RICE UNIVERSITY • HOUSTON, TEXAS



[1] **BAYLOR ST. LUKE'S MEDICAL CENTER** celebrates 35 years of transplants.\*

[2] **AMY HAIR, M.D.**, neonatologist and director of the neonatal nutrition program at Texas Children's Hospital, will receive the 2017 Samuel J. Fomon Young Physician Award.\*

[3] **BRETT BRINKLEY**, left, orthopedic cast specialist who has been named UT Physicians 2016 Employee of the Year, shown with **ANDREW CASAS**, COO and vice president of UT Physicians.\*

[4] Pro Football Hall of Famer **CHRIS DOLEMAN** signs autographs at Taste of the NFL at the University of Houston.

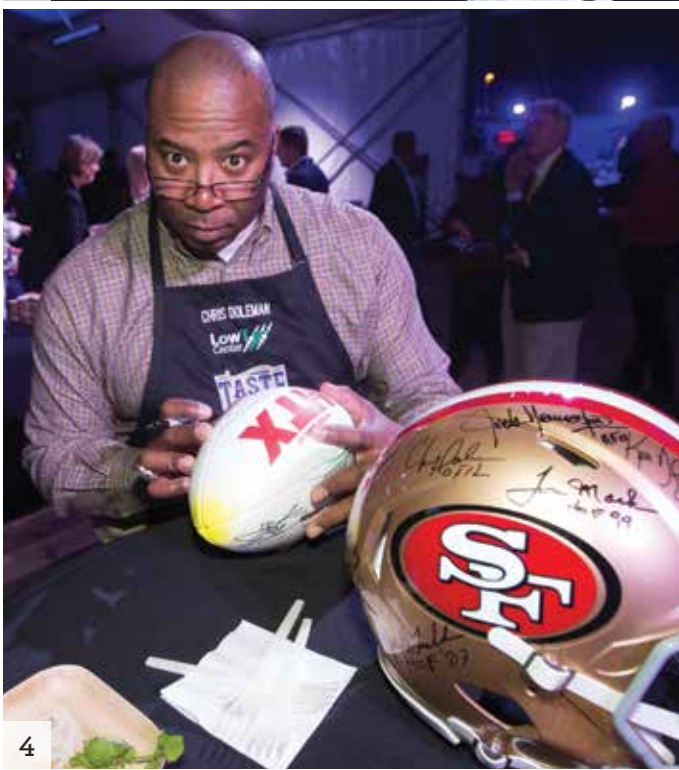
[5] **ROBERT C. ROBBINS, M.D.**, president and CEO of the TMC, with Texas Gov. **GREG ABBOTT** at the 1st and Future pitch competition.

[6] **LAUREN KANE, M.D.**, a congenital heart surgeon at Texas Children's Hospital and assistant professor of surgery at Baylor College of Medicine, was awarded the Carolyn E. Reed Traveling Fellowship from The Thoracic Surgery Foundation.\*

[7] **JOSEPH LAMELAS, M.D.**, an internationally recognized expert in minimally invasive heart surgery, has joined the Michael E. DeBakey Department of Surgery at Baylor College of Medicine as associate chief of cardiac surgery in the division of cardiothoracic surgery.\*

[8] Faculty in the Michael E. DeBakey Department of Surgery at Baylor College of Medicine have created the **KENNETH L. MATTOX, M.D.**, Endowment in Surgery, honoring the Distinguished Service Professor and Ben Taub Hospital chief of staff.\*

[9] **DEEPAK MEHTA, M.D.**, a pediatric otolaryngologist at Texas Children's Hospital and an associate professor of otolaryngology at Baylor College of Medicine, was elected president of the Society for Ear, Nose and Throat Advances in Children.\*



\*Credit: Courtesy photo





10



11



12



13

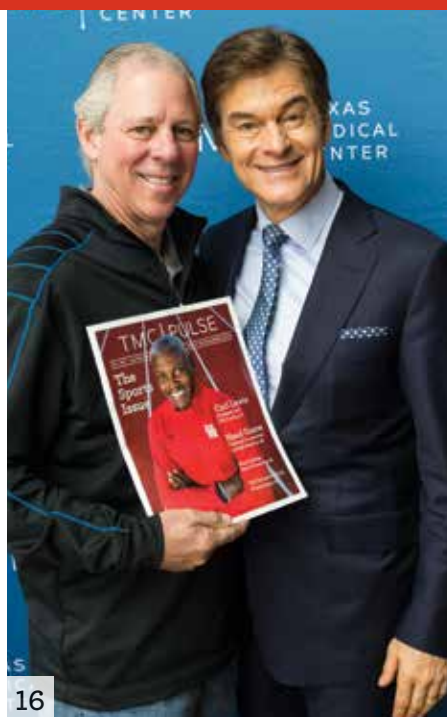


14

## LOOK WHO'S READING PULSE...



15



16



17

[10] **PAWEŁ STANKIEWICZ, M.D., PH.D.**, associate professor of molecular and human genetics at Baylor College of Medicine, was honored with the Polish Presidential Scholar Award of Full Professor, the highest scientific title in Poland.\*

[11] **PAUL WARD** has been named vice president of finance for CHI St. Luke's Health-Baylor St. Luke's Medical Center.\*

[12] **JACK AND DEBBIE MOORE**, who were honored at the American Heart Association's Heart Ball, with **ROBERT C. ROBBINS, M.D.**, who hosted the event.\*

[13] **D.J. HAYDEN**, a native of Missouri City, Texas, and cornerback for the Oakland Raiders, poses with a football at the Texas Medical Center.

[14] **MAYOR SYLVESTER TURNER** unveils the Ronald McDonald Care Mobile Medical Unit, a pediatric clinic on wheels. The project is a collaboration between Ronald McDonald House Charities of Greater Houston/Galveston and Texas Children's Hospital, funded by a \$400,000 donation from local McDonald's owners and operators. (credit: Brad Adcock)

[15] Olympian and UH coach **CARL LEWIS** at Taste of the NFL.

[16] **ROBERT C. ROBBINS, M.D.**, and **MEHMET OZ, M.D.**, at the 'Texas Two Step: Save a Life Campaign' event, which offered CPR training at The Health Museum.

[17] NFL Commissioner **ROGER GOODELL** and NFL Executive Vice President **JEFF MILLER** at the 1st and Future pitch competition at TMCx.

**DO YOU HAVE TMC EVENT PHOTOS YOU WOULD LIKE TO SHARE WITH PULSE? SUBMIT HIGH-RES IMAGES TO: [NEWS@TMC.EDU](mailto:NEWS@TMC.EDU)**

# March 2017



Models walk the runway at the 2016 Friends of Nursing Luncheon and Fashion Show, which supports nursing education and research at Baylor St. Luke's Medical Center.

## 2 **Focusing on You Symposium: Women's Health & Wellness at Every Age**

Thursday, 9 a.m. – 1 p.m.

Houston Methodist Research Institute  
6670 Bertner Ave.

Tickets start at \$150  
[abharris@houstonmethodist.org](mailto:abharris@houstonmethodist.org)  
832-667-5813

## 9 **Student Appreciation Day** **Free food, music and giveaways**

Thursday, 11:30 a.m. – 12:45 p.m.

The TMC Library  
1133 John Freeman Blvd.  
[bvarman@library.tmc.edu](mailto:bvarman@library.tmc.edu)  
713-795-4200

## 24-26 **Conference on Medicine and Religion: "Re-Enchanting Medicine"**

Friday, 8 a.m. – Sunday, 1 p.m.

JW Marriott  
5150 Westheimer Rd.

One-day registration ranges from \$100-\$250; three-day registration ranges from \$215-\$485  
[medicineandreligion.com](http://medicineandreligion.com)  
713-961-1500

## 29 **Friends of Nursing Luncheon and Fashion Show**

Wednesday, 11:30 a.m.

River Oaks Country Club  
1600 River Oaks Blvd.

Register and purchase tickets at  
[SupportStLukes.org/Luncheon](http://SupportStLukes.org/Luncheon)  
Tickets start at \$500  
[chays@stlukeshealth.org](mailto:chays@stlukeshealth.org)  
832-355-5855

## 31-1 **David M. Underwood Center for Digestive Disorders Symposium: "Exploring Frontiers in the Management of Digestive and Liver Disorders"**

Friday & Saturday, 8 a.m. – 5 p.m.  
Houston Methodist Research Institute  
6670 Bertner Ave., 2nd Floor

One day registration starts at \$50  
[CME@houstonmethodist.org](mailto:CME@houstonmethodist.org)  
713-441-4971



### MARCH: MS AWARENESS MONTH

March is recognized as MS Awareness Month by the Multiple Sclerosis Association of America. Events are held around the country to educate the public about the symptoms of this debilitating disease, in which the immune system eats away at the protective covering of nerves.

Currently, 400,000 people in the United States are living with MS.





## TREATMENT FOR THE MOST COMPLEX NEUROLOGICAL CONDITIONS.

At Houston Methodist Neurological Institute, our physicians collaborate across specialties to diagnose and treat common to complex neurological disorders. As the highest nationally ranked neurology and neurosurgery hospital in Texas, we offer clinical trials and advanced technologies, bringing advanced treatment options to those who have few.

Our team of physicians treats a variety of disorders, including

- ALS
- Alzheimer's disease and memory disorders
- Back and neck pain
- Brain and spinal tumors
- Cerebrovascular disease
- Cranial and spinal disorders
- Epilepsy and seizures
- Headaches and migraines
- Movement disorders
- Neuromuscular disorders
- Stroke

For more information on our comprehensive neurological services in the Texas Medical Center, visit [houstonmethodist.org/ni](http://houstonmethodist.org/ni), or to schedule an appointment, call **713.441.3850**.

HOUSTON  
**Methodist**<sup>®</sup>  
NEUROLOGICAL INSTITUTE



The highest nationally ranked neurology  
and neurosurgery hospital in Texas.





We're boldly  
***moving forward***

in heart care

At **CHI St. Luke's Health**, our affiliation with **Texas Heart® Institute** continues to revolutionize heart care. As one of the largest cardiovascular centers in the nation, physicians at THI have performed more heart transplants and open-heart surgeries at Baylor St. Luke's Medical Center than any other facility in the U.S.

New programs in research, a tireless commitment to education, and unparalleled expertise make **Texas Heart Institute** at **Baylor St. Luke's Medical Center** an undisputed leader in innovations to treat complex cases.

At **CHI St. Luke's Health**, we're creating the future of healthcare...with bold moves forward in medicine.



**CHI St. Luke's  
Health**

**Houston-area hospitals:**

CHI St. Luke's Health—Baylor St. Luke's  
Medical Center

CHI St. Luke's Health—Brazosport Hospital

CHI St. Luke's Health—Lakeside Hospital

CHI St. Luke's Health—Patients Medical Center  
Pasadena

CHI St. Luke's Health—Springwoods Village

CHI St. Luke's Health—Sugar Land Hospital

CHI St. Luke's Health—The Vintage Hospital

CHI St. Luke's Health—The Woodlands Hospital

Learn more at [CHStLukesHealth.org](http://CHStLukesHealth.org).

Baylor  
College of  
Medicine

  
TEXAS HEART® INSTITUTE



**CHI St. Luke's  
Health**

In partnership with Catholic Health Initiatives—CHI