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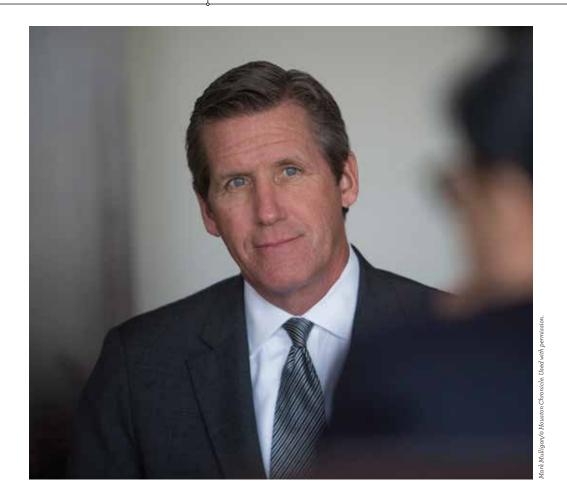
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I am extremely grateful to the TMC Board of Directors and the leadership across the member institutions who have been so gracious in their support and encouragement.

Every morning, as I drive into the Texas Medical Center, I am awestruck by the sheer enormity of the world's largest medical city. As I pass the buildings and people of each institution, I take tremendous pride that the world's greatest talents in research and clinical care are located here.

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William 7 Myc

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President and Chief Executive Officer William F. McKeon

Vice President of Communications
Christen Bagley

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

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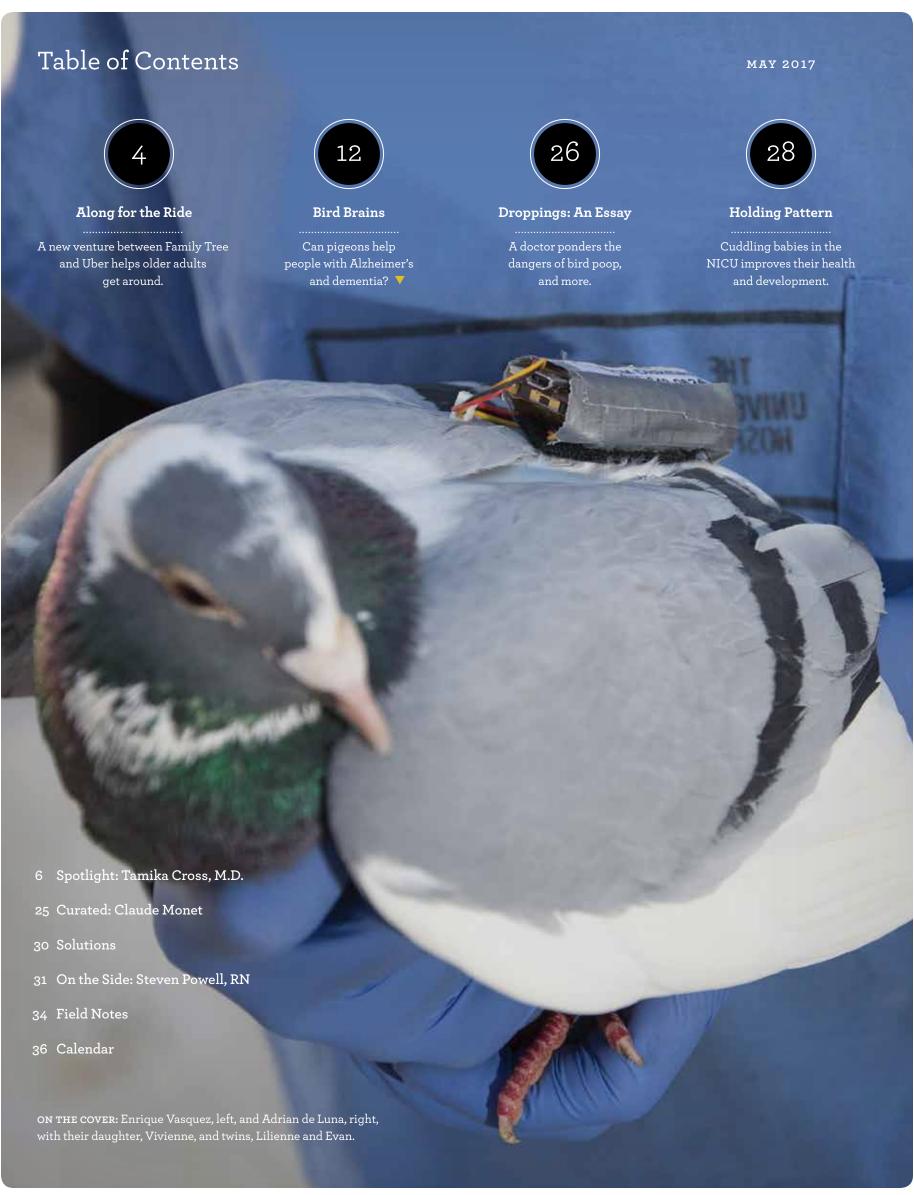
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Along for the Ride

A new venture between Uber and Family Tree gives older adults in Houston a way to get around

By Christine Hall







Ellen McDonald calls Family Tree to set up an Uber ride to CVS to get a pneumonia vaccine. Nicole Spencer, a Family Tree caregiver, accompanies McDonald to her vaccination appointment and helps her find the items she needs at the pharmacy.

hen her husband went on dialysis six years ago, Ellen McDonald moved in with her daughter, Lisa, in an effort to share transportation.

McDonald's macular degeneration, an eye disease that restricts her field of vision, keeps her off the road. When she needs to go to the doctor or pick up a prescription, she has to rely on Lisa or a friend.

So McDonald was eager to try a new program that her in-home senior care provider, Family Tree, was testing with transportation company Uber. The RideWithFamilyTree service provides door-to-door transportation—unaccompanied or with a professional caregiver/nurse—for older adults to get to medical appointments and outings. The service launched in Houston in April.

On a recent Thursday, McDonald, a retired nurse who taught gerontology at UTHealth, needed to visit CVS Pharmacy to get a pneumonia vaccine and to pick up a few items, including eye vitamins. She called

the Family Tree concierge service and told them she needed to set up a ride to CVS, about a mile from her apartment. Accompanying her was Nicole Spencer, a care professional with Family Tree.

Family Tree asked McDonald for her home address and the address of the pharmacy. Then the concierge service called Uber and texted McDonald to say that the driver was three minutes away. The service also

About 40 percent of adults with aging parents would rather talk about funeral plans than taking away the car keys. It's a freedom no one wants to give up.

- DANIEL GOTTSCHALK Co-founder and president of Genova told her what type of car would be picking her up and gave her the driver's phone number.

This was McDonald's second experience with RideWithFamilyTree.

"I love it," she said. "Last week, I went to the doctor."

Daniel Gottschalk, co-founder and president of
Genova Health, Family Tree's parent company, said
the program was started because access to transportation is "a huge problem" for older adults in Houston.
Harris County is 1,778 square miles wide.

"Houston is so spread out, and this way, they have door-to-door access," he said.

In addition, adult children aren't that willing to talk to aging parents about the best time to take away the kevs.

"About 40 percent of adults with aging parents would rather talk about funeral plans than taking away the car keys," Gottschalk said. "It's a freedom no one wants to give up."





My caregiver is limited—she can't always go out with me. I had to get my pneumonia shot, and I would have had to ask someone to go and wait with me. Now I don't always have to do that.

— ELLEN McDONALD

One of the first users of RideWithFamilyTree

senior transportation service





Gottschalk recommended handling the conversation this way: "Instead of saying, 'We are going to take away your car and replace it with this,' it should be, 'Hey, forget about driving. Here is a personal chauffeur to take you anywhere you want to go."

'Not just me against the world'

Viola Larkins was McDonald's Uber chauffeur. She's been an Uber driver for about a year-and-a-half. For her, transporting older adults is just part of the job, but one she actually prefers.

"I do it all of the time," she said. "I take people with crutches, walkers and wheelchairs. I love it—to help people get around."

Across the country, people are using Uber to get to medical appointments, even using it in place of ambulances. Providing transportation options to fit everyone's needs is one of Uber's goals. In 2016, the company began offering UberACCESS in Houston, for

those who need rides in wheelchair-accessible vehicles, said David Brightman, general manager of Uber Central Texas & Oklahoma.

It's also why Uber is partnering with Family Tree.

"This technology has enabled Uber to improve urban mobility and the quality of life for people wherever and whenever they need," Brightman said. "Our goal is to increase access to transportation for older adults in the Houston metropolitan area so they don't have to rely on a caretaker or a neighbor."

McDonald likes using Uber because the process is simple; she doesn't feel like she is sitting around waiting because she receives text messages that tell her what's going on. McDonald also finds the Uber drivers to be friendly and courteous, which gives her a good feeling when she goes out.

"My caregiver is limited—she can't always go out with me," McDonald said. "I had to get my pneumonia shot, and I would have had to ask someone to go and

wait with me. Now I don't always have to do that. With Uber, I could go myself."

McDonald still works as an elder care consultant, helping families with seniors make decisions about what they need. She counsels older adults about different types of medical care and even discusses finances. McDonald understands, firsthand, the challenges of aging, which is why she likes using Family Tree.

"It's not just me against the world," she said. "As an older person, it's nice to know they have a connection with you and that they are anticipating your needs. My family likes it, too. They can help me arrange my trips, but they have lives to live, and I like my independence. Plus, I can use Uber for other things. I might meet a friend for lunch and a movie, or I have a friend at a nursing home that I like to visit, and I can do that."

Last October, TAMIKA CROSS, M.D., a fourth-year obstetrics and gynecology resident at McGovern Medical School at UTHealth and chief OBGYN resident at Harris Health Lyndon B. Johnson Hospital, faced discrimination during a medical emergency on a Delta Airlines flight. She wrote about the incident in a Facebook post that has since been shared more than 48,000 times.

Her post sparked a social media movement about diversity in medicine, with physicians posting photos of themselves with the hashtag #thisiswhatadoctorlookslike. The 29-year-old Cross, who will be joining UTHealth as an OBGYN when she completes her residency in June, spoke with *Pulse* about being stalked by NBC's "Today" show, the implicit bias we all share, and how to turn a negative situation into a positive experience.

Q You grew up in Detroit, completed your undergraduate degree at the University of Michigan, then went to Meharry Medical College in Nashville, Tennessee. Did you always know you wanted to become a doctor?

A From a very early age, I was interested in medicine. My maternal grandmother was a registered nurse, so she was probably my earliest exposure to any kind of medicine. I remember hearing her stories, and it was definitely something that interested me. As I got a little older, there was an opportunity to go to a medical academy through my high school. When I was in 10th grade, we received mail from the National Youth Leadership Forum, and I was really interested in doing the one focused on medicine, so with the help of my family I was able to go. It was a 10-day program in Atlanta at Emory University, and that was my first in-person exposure to medicine. They put us up in the dorms, and we were able to do different suturing and go to the OR, and we were working with residents and attending physicians. It was just a really good experience. When I came home I decided I was definitely going to apply for the medical academy, and so for 11th and 12th grade I took things like anatomy and medical terminology in addition to the average high school course load. When I went to Michigan I went with the pre-med concentration and just stayed on that path.

Q After interning for one year at the University of Toledo, you transferred to UTHealth to complete your residency. You're now one of two chief OBGYN residents at LBJ Hospital and finishing up your final year. What are your plans for the future?

A Right now I am interested in academic medicine, which is one of the reasons I wanted to come here and train in this medical center, which is phenomenal for its resources and opportunities, especially for academia. I also have an interest in the private practice aspect, too—in having my own patients and being able to build a rapport with them. So I see myself doing a combination of both.

Q | Last October, you experienced discrimination on a Delta Airlines flight when you answered a page for a doctor mid-flight; your subsequent Facebook post describing the incident went viral and sparked a social media movement. What was it like to be thrust into the national spotlight like that?

A It was surreal. The situation, when it occurred, wasn't extremely surprising to me. I had experienced something like this before; I think most minorities have. You talk to any woman, any person of color, any minority, they would probably have similar experiences, not just in medicine but in the workplace in general. So while it wasn't extremely surprising to me, I was shocked in the sense that during a medical emergency,

we were still letting our own implicit bias get in the way of helping someone in need, especially not knowing the acuity of the situation.

I posted it to social media on a public post with the intent that it could spread. The point was for it to spread. I didn't realize how many people would want to share it, but my point was to get Delta's attention. The traditional ways of filing a complaint weren't getting their attention; I had already spoken to a supervisor, had already been dismissed with some drink tickets, and I had already filed a formal complaint via email, but none of that was working. I've never had a post go viral like this, so I wasn't anticipating that. I'm glad it did, but for a while there, I was very overwhelmed. I'm not used to that much attention, and I don't like that much attention—I'm very private—so all of a sudden, in a matter of one day, everything changed. I had reporters calling me, calling my friends, calling my family, stalking me on Facebook, emailing me, waiting for me outside my job, my house. I definitely wasn't looking for that and I definitely wasn't expecting it, nor did I like it. The "Today" show called me and wanted to send a car to my house to fly me out. It was 11 p.m. and they wanted to fly me out to come on the show at the crack of dawn the next morning. I was like, 'I have work in the morning!'

All the major news stations wanted an interview: ABC, NBC, all the evening shows, Dr. Oz, CNN, Lester Holt. I didn't do any on-screen interviews, but I did speak with a few print journalists and finally agreed to a phone interview with the "Today" show. I gave a talk the other day during Diversity Week at UTHealth, and it was actually the first time I'd talked to an audience about everything. I was too busy working at the time to do interviews.

Q | Looking back, what are your takeaways from the experience?

A I think the first one is that implicit bias exists in all of us. A lot of times, many of us aren't even aware of it. Since we don't know it exists, then a lot of times it will influence our decisions, it will influence the way we respond to things, and so I think it's very important for all of us to really sit down and reflect so that we can make a concerted effort to not allow our implicit bias to interfere with day-to-day interactions. For example, with this specific flight attendant, I think she allowed that to get in her way. Some people say, 'Oh, it was your age, you look so young.' Some say, 'Oh, it's because you're black.' Some say, 'Oh, it's because you're a woman.'
Whatever it may be, it doesn't matter, it's still not right. So I think she had implicit bias but didn't notice that it was coming into play, so she didn't snap out of it.

(continued)



THE FACEBOOK POST THAT WENT VIRAL

Tamika Cross · October, 9, 2016

I'm sure many of my fellow young, corporate America working women of color can all understand my frustration when I say I'm sick of being disrespected.

Was on Delta flight DL945 and someone 2 rows in front of me was screaming for help. Her husband was unresponsive. I naturally jumped into Doctor mode as no one else was getting up. Unbuckle my seatbelt and throw my tray table up and as I'm about to stand up, flight attendant says "everyone stay calm, it's just a night terror, he is alright." I continue to watch the scene closely.

A couple mins later he is unresponsive again and the flight attendant yells "call overhead for a physician on board." I raised my hand to grab her attention. She said to me "oh no sweetie put ur hand down, we are looking for actual physicians or nurses or some type of medical personnel, we don't have time to talk to you" I tried to inform her that I was a physician but I was continually cut off by condescending remarks.

Then overhead they paged "any physician on board please press your button." I stare at her as I go to press my button. She said "oh wow you're an actual physician?" I reply yes. She said "let me see your credentials. What type of Doctor are you? Where do you work? Why were you in Detroit?" (Please remember this man is still in need of help and she is blocking my row from even standing up while Bombarding me with questions).

I respond "OBGYN, work in Houston, in Detroit for a wedding, but believe it or not they DO HAVE doctors in Detroit. Now excuse me so I can help the man in need." Another "seasoned" white male approaches the row and says he is a physician as well. She says to me "thanks for your help but he can help us, and he has his credentials." (Mind you he hasn't shown anything to her. Just showed up and fit the "description of a doctor") I stay seated. Mind blown. Blood boiling. (Man is responding the his questions and is seemingly better now Thank God)

Then this heifer has the nerve to ask for my input on what to do next about 10 mins later. I tell her we need vitals and blood sugar. She comes back to report to me a BP of 80/50 (super low, to my non medical peeps) and they can't find a glucometer. We continue down that pathway of medical work up, but the point is she needed my help and I continued to help despite the choice words I had saved up for her. The patient and his wife weren't the problem, they needed help and we were mid flight.

She came and apologized to me several times and offering me skymiles. I kindly refused. This is going higher than her. I don't want skymiles in exchange for blatant discrimination. Whether this was race, age, gender discrimination, it's not right. She will not get away with this....and I will still get my skymiles....

In response to the incident, Delta Airlines changed its policy and no longer requires flight attendants to verify medical credentials. Instead, flight crew may rely on a volunteer's statement that he or she is a physician, physician assistant, nurse, paramedic or EMT.

66 I think as we continue to diversify medicine and we really try to put time, resources and funding into pipeline programs to get more people from different backgrounds into the medical field. 10 to 15 years from now it won't be so crazy that this young, black woman from Detroit is a doctor. 99

After my talk during Diversity Week, someone said, 'It's funny because I didn't realize my own implicit bias, and when you sat up here and you talked about this flight attendant, in my head, I assumed she was a white female, but it didn't have to be. It could have been a male, it could have been a black male, it could have been whatever.' A lot of people made that assumption just based on posts and things like that, and people were asking me, 'Hey, what race was she? Because you didn't say.' And I didn't. I didn't say that in my post. So people had already made assumptions on what she was. I think that's one important point, that we all have implicit bias and need to recognize it.



I think the only way we can overcome this is, number one, recognizing it and making a conscious effort to not allow it to interfere in our lives. But then also I think the more diversity we have in the medical field—the more common it is to see female doctors. the more common it is to see doctors of color—it won't be so surprising that this double minority is actually a physician. And I think we're getting better. There are a lot more women going to medical school now. When you look at demographics, we're closing the gap better in regards to gender, but we're still not there. With race, we still have a long way to go. I think as we continue to diversify medicine and we really try to put

time, resources and funding into pipeline programs to get more people from different backgrounds into the medical field, 10 to 15 years from now it won't be so crazy that this young, black woman from Detroit is a doctor.

Q Do you see yourself becoming involved in these types of programs?

A | Mentoring has always been something I've been passionate about and something I was always involved in during high school and college. Whether it was through my sorority or through my school or different community service organizations I was a part of, I've always enjoyed it. Since this situation in October, I've become even more involved. I've gone to a high school and worked with kids who were interested in medicine out in Orlando, I've spoken to some of the medical students at the Mayo Clinic, and I also did a mentoring in medicine program here at Baylor College of Medicine. That's definitely a positive that has come out of the whole experience. People have contacted me to do these things that I'm very passionate about, and I love being able to inspire and motivate, because I was once in their shoes.

Tamika Cross, M.D. was interviewed by Pulse reporter Alexandra Becker. This interview was edited for clarity and length.



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Problems for Previvors

Testing positive for a BRCA mutation means surveillance or surgery

By Shea Connelly

Tatalie Bossenberger answered a phone call from her parents in 2012. In a matter of minutes, the way she viewed her health—and her future—changed profoundly.

Her father told her he had recently tested positive for a BRCA genetic mutation. With two aunts who had been diagnosed with breast cancer, Bossenberger knew this was part of her family's health history. Now, at age 30, she realized a predisposition for breast cancer might be something she carried in her very own genes.

"My parents said he got tested for me and my brother, so we would have that information and do whatever we chose to do," Bossenberger said. "I chose to go ahead and get tested."

Within a week of giving a saliva sample to a Baylor College of Medicine lab, Bossenberger had the results: positive for a BRCA1 mutation.

BRCA genes gained international attention in recent years when actress Angelina Jolie tested positive for a BRCA1 mutation and elected to have a double mastectomy. The discovery of the link between BRCA mutations and breast cancer, however, happened more than 20 years ago. Mark Skolnick, Ph.D., led a team of scientists who identified the BRCA1 gene amid a fierce competition dubbed the "race for cancer gene" by *The New York Times*.

The BRCA1 gene and BRCA2, identified in the United Kingdom two years later, are tumor suppressor genes. They help repair damage to DNA. A BRCA1 or BRCA2 mutation can result in DNA damage remaining unrepaired, which in turn increases the possibility of cancer developing. The acronym BRCA is derived from BReast CAncer.

The genes' link to breast cancer is most significant: about 55 to 65 percent of women with a BRCA1 mutation and 45 percent of women with a BRCA2 mutation will develop breast cancer by age 70. But since their discovery, BRCA mutations have been linked to other forms of cancer, including ovarian



Natalie Bossenberger, a staff nurse at the Women's Assessment Center, Texas Children's Pavilion for Women, outside Baylor Clinic, where she sees Julie Rani Nangia, M.D., to monitor for signs of breast cancer.

cancer, prostate cancer, melanoma and pancreatic cancer.

The positive BRCA1 result put Natalie Bossenberger in a growing category known as "previvors"—people who are predisposed to a certain disease they do not yet have.

As a nurse, Bossenberger is familiar with medical jargon. But during her meeting with the genetic counselor after receiving her positive result, she didn't want to be Nurse Natalie. She wanted to be a typical patient, a young woman who just learned her likelihood of being diagnosed with cancer had skyrocketed.

"I went into the appointment asking them to talk to me like I'm not a medical person. I wanted to be talked to at that basic level," Bossenberger said. "They Every time I go see a doctor, I'm always rethinking my decision. Should I do the mastectomy? Will I regret it? What if they find something this time?

- NATALIE BOSSENBERGER

give you such a large amount of information and statistics. Every year I have them repeat it to me again because it's so overwhelming."

Prophylactic mastectomies. Removing the ovaries and fallopian tubes. Watching and waiting. Extra tests, new specialists. Her head swimming with options, Bossenberger decided to "watch and wait." Every six months, she sees either Julie Rani Nangia, M.D., director of the Breast Cancer Prevention and High Risk Clinic at Baylor College of Medicine, or Matthew Anderson, M.D., Ph.D., assistant professor of obstetrics and gynecology at Baylor. She gets an annual mammogram, breast MRI and pelvic ultrasound to check for breast and ovarian abnormalities. Anderson always orders a CA 125 blood test, as elevated CA 125 levels can indicate various forms of cancer.

But even after years of watching and waiting, Bossenberger is constantly reevaluating.

"Every time I go see a doctor, I'm always rethinking my decision. Should I do the mastectomy? Will I regret it? What if they find something this time?" she said. "The good thing about the breast MRIs is that the rate of finding cancer extremely early is high. I have that cushion in the back of my mind that even if they do find something, the chances are that it's going to be early and treatable." (continued)

CHANCES of DEVELOPING BREAST CANCER by AGE 70

Specific inherited mutations in the BRCA1 and BRCA2 genes increase the risk of breast and ovarian cancers. Testing for these mutations is usually recommended in women without breast cancer only when the person's individual or family history suggests the possible presence of a harmful mutation in the BRCA1 or BRCA2. Testing is often recommended in younger women newly diagnosed with breast cancer because it can influence treatment decisions and have implications for their family members.

MUTATED BRCA1 55-65%



MUTATED BRCA2

45%

NORMAL BRCA 12%



Credit: National Cancer Institute, cancer.gov/brca-fact-sheet

Double-edged sword

Once a mutation in a BRCA gene is identified, deciding how to proceed is complicated by many factors. One of the most significant is family history.

"Some women have a lot of breast cancer in their families and have seen a lot of family members die," Nangia said, recalling a woman who saw a number of relatives develop the cancer at a young age, between 25 and 35. "She decided to have prophylactic mastectomies at 25 because she just wanted to live her life and not worry about it."

On the other hand, if a patient's relatives typically develop cancer later in life, or tend to have cancer that is highly treatable, she may opt for a more conservative approach. Nangia said patients who still want to have children and would like to breastfeed also may choose to watch and wait and plan for surgery further down the road. Many patients have their ovaries and fallopian tubes removed around age 40 to 45, she said.

"There's an intrinsic risk in just having a BRCA mutation, but not all BRCAs are the same," Nangia said. "That's where having the correct knowledge to make these decisions is helpful."

Judy Calabria's BRCA path began similarly to Bossenberger's—with a tip from a relative. She decided to get

tested after a letter from a cousin who had been treated for breast cancer mentioned that her daughter was also being treated for breast cancer. That information, combined with a suspicious mammogram and consideration of other cancer history in the family, inspired Calabria to get tested in May 2013. Her test came back positive for the BRCA1 mutation.

Calabria, then 52, opted for prophylactic surgeries and had a double mastectomy. She had her ovaries and fallopian tubes removed, as well.

"I acted quickly—both of my parents died of cancer," Calabria said. "I know through family what living with cancer is like, and I thought if there was any way to prevent mine, I wanted to be proactive about it."

Had she been 20 years younger, still dating and planning to have children, her choice may have been different, she added.

"Everybody has to make their own decision about surveillance or surgery," Calabria said. "It's not an easy decision at any age."

While knowing you have an increased risk of developing cancer has many advantages, Bossenberger noted it can be "a double-edged sword."

"Not knowing is not good, but sometimes knowing too much is not good, either," she said. "Sometimes I

start to think, 'Oh, my gosh, I'm going to be that mid-30-year-old woman with breast cancer. I'll never be able to have children.' It snowballs into a terrible conclusion that's probably not going to happen. But I'm happy that I know, because I'm more aware of subtle changes to my body and would hopefully catch it in time."

> To help cope with the overwhelming decisions and emotions connected to BRCA mutations, many choose to attend meetings with Facing Our Risk of Cancer Empowered (FORCE). Calabria volunteers with the national nonprofit and Bossenberger attended meetings while she was weighing her options.

"The women are very open to sharing their stories—'this is what it feels like, this is where my scar is, this is what it looks like," Bossenberger said. "It's a great community."

Calabria, who leads FORCE meetings, says she tries to hold five to seven per year—both on the main Texas Medical Center campus and at MD Anderson's Sugar Land campus. She is working on adding meetings north of Houston.

"I just retired, so I'm happy to give as much time to this as I can,"

Nangia and her colleagues also hold local conferences where they review current literature related to BRCA mutations, discuss emerging topics and give patients the opportunity to meet experts in the field and ask questions.

"The longer we follow BRCA mutation carriers and the more information we get, the more data we're getting about additional risks," Nangia said. "There are a lot of subtle nuances."

Ethical and philosophical dilemmas

Being identified as previvors places Calabria and Bossenberger in a complicated medical limbo. Geneticists are now able to identify previvors for a multitude of diseases, which marks a tangible advancement for science but also raises ethical and philosophical questions.

When it comes to health, is there such a thing as too much information? For Calabria, learning about her BRCA1 mutation and being able to take action was "empowering." The surgeons at The University of Texas MD Anderson Cancer Center who performed her double mastectomy found irregular cells that could have led to cancer, further solidifying her confidence that she had made the right decision.

"For other genetic conditions, however, there isn't much you can do medically," said Amy McGuire, J.D., Ph.D., the Leon Jaworski Professor of Biomedical Ethics and director of the Center for Medical Ethics and Health Policy at Baylor. "You might make some lifestyle changes, but there's no real intervention you can do to prevent the disease from occurring."

In some cases, patients may decide they simply don't want to know. Nobel Prize winner James Watson, Ph.D., one of the pioneers of genetics research who discovered the structure of DNA and helped initiate the Human Genome

66 I acted quickly—both of my parents died of cancer. I know through family what living with cancer is like, and I thought if there was any way to prevent mine, I wanted to be proactive about it. 🤊 🦻

There's an intrinsic risk in just having a BRCA mutation, but not all BRCAs are the same.

— JULIE RANI NANGIA, M.D.

Director of the Breast Cancer Prevention and High Risk Clinic at

Baylor College of Medicine

Project, chose to have information related to Alzheimer's omitted when his genome was sequenced.

"Since we can't do much about Alzheimer's disease, I didn't want to know if I was at risk," Watson said when he was presented with a copy of his genome at Baylor in 2007. "My grandmother ... died of Alzheimer's at the age of 84. So I had a one in four chance of sharing the wrong form of that gene." Watson did not want to spend his later years wondering whether every forgetful moment was a sign of the disease emerging.

Watson did discover a BRCA1 mutation and shared that his sister had been diagnosed with breast cancer at age 50.

Concerns about discrimination also deter some from undergoing genetic testing. The Genetic Information Nondiscrimination Act (GINA) protects individuals from discrimination in health insurance and employment based on their personal genetic information. Certain aspects of the Affordable Care Act (ACA) also protect from such discrimination—measures related to pre-existing conditions, for example. GINA and the ACA are far from comprehensive, however, when it comes to genetic discrimination.

A bill currently under consideration, H.R. 1313, would essentially allow employers to require employees to share genetic information as part of workplace wellness programs. Those who do not comply could be charged more for health insurance. The bill has already passed a committee vote and is expected to be included in the ACA replacement.

Both Calabria and Bossenberger said their insurance covered and

continues to cover a large portion of the expenses associated with having a BRCA mutation. The uncertain future of the ACA, however, has many concerned that a pre-existing condition may soon, once again, become a liability when seeking health coverage.

Another major concern surrounds children. When someone tests positive for a BRCA mutation, part of the subsequent meeting with a genetic counselor includes discussing who in the family is at risk and how to disclose that information, Nangia said. When at-risk family members are underage children, however, the situation becomes more complex. BRCA1 and BRCA2 mutations are autosomal dominant mutations, meaning you only need one mutated gene to be affected. If you have the mutation, your children have a 50 percent chance of having it, too.

Though children of BRCA mutation carriers have a high probability of also having the mutation, many experts, including the American Academy of Pediatrics (AAP), believe that children should not be tested for mutations related to adult-onset diseases. Instead, parents should wait until children are

adults and can make their own decisions about testing.

According to the AAP, if it's a condition that's not going to manifest in childhood, you should wait, McGuire said. "You should preserve what's called their right to 'an open future."

This means parents should protect children from having important life choices decided for them.

Bossenberger, who does not yet have children, has nonetheless given some thought to the type of guidance she would offer.

"I would leave it up to them," she said. "If I had a girl, I would maybe emphasize it more, suggest testing would be a good idea. But I think I would present it similarly to how my parents did."

It's a difficult conversation that is many years in the future, which brings Bossenberger hope through all the testing, scanning, watching, waiting—and worrying.

"Hopefully by the time my kid is grown up we'll have so many more advancements in treating or detecting breast cancer that they won't have to worry as much as I do," she said.

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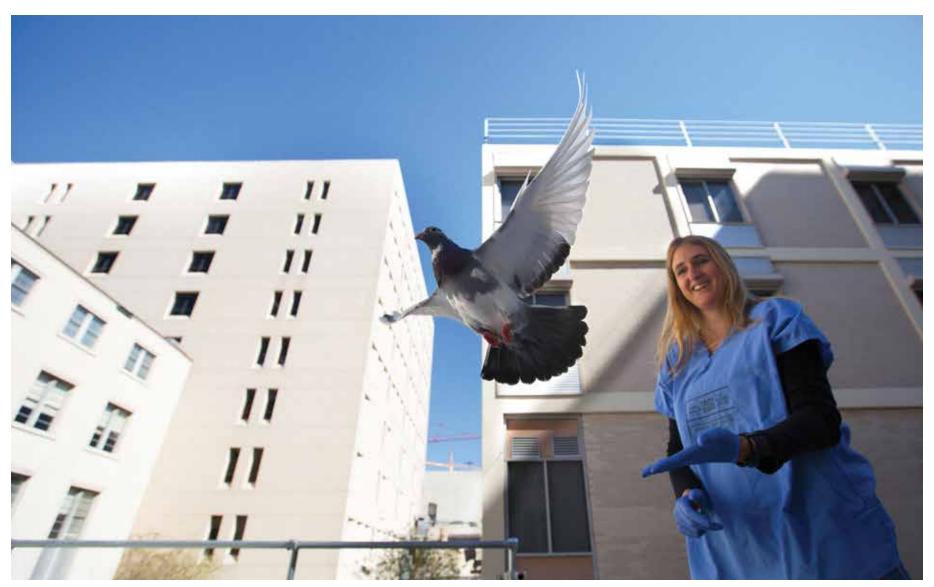


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Bird Brains

Can pigeons with backpacks help people with Alzheimer's and dementia?

By Shanley Chien



Above: Nele Lefeldt, Ph.D., postdoctoral associate at Baylor College of Medicine, releases a pigeon on top of the Services and Radiology Building, where the birds reside. Below: Pigeons in the study wear small GPS backpacks that allow Lefeldt to track their location, position, direction, speed, acceleration and altitude.

Tearly two dozen pigeons rustle their feathers and coo on the roof of the Services and Radiology Building at Baylor College of Medicine. They're pecking at seeds in a 6-footby-6-foot wire den, dubbed the "pigeon penthouse."

These birds are part of a research project led by Baylor postdoctoral associate Nele Lefeldt, Ph.D., who is studying their natural ability to navigate and orient using Earth's magnetic field—a sense known as magnetoreception. Because birds have homing and navigational abilities that exceed human capabilities, studying the navigation circuit in their brains could lead to treatment options for diseases that affect orientation, such as dementia and Alzheimer's.

"If we understand the basics that underlie orientation and navigation, we can get a better understanding in the long run of how to yield diseases



and cure diseases that come along with disorientation," Lefeldt said.

The navigation circuit is one of the least understood circuits in the brain, but it serves an important role, especially for people who suffer from brain diseases associated with older age.

66 I had to go down to the police station and get my arrested pigeon back. 🤊 🤊

> - NELE LEFELDT, PH.D. Postdoctoral associate at Baylor College of Medicine

Disorientation is one of the first things to happen to people with dementia or Alzheimer's.

"They get lost very easily," said J. David Dickman, Ph.D., professor of neuroscience at Baylor, whose lab is hosting Lefeldt's project. "Most of the Silver Alerts that you see on your way home on the highway are people who have gotten in their car and driven off and don't know how to get back. People with these diseases ... have to be followed all the time or somebody has to be with them."

Earth's magnetic field helps shield the planet from solar wind-charged particles from the sun that could

deplete the ozone layer and expose Earth to high levels of ultraviolet radiation. However, the magnetic field also serves as a type of map that allows animals to migrate for thousands of miles and return home each year.

"Earth's magnetic field has an inclination, the angle between the planet's surface of the ground and the magnetic field lines," Lefeldt explained. "This angle gets bigger or smaller, depending on which direction you go."

Essentially, Earth's magnetic field serves as a compass for animals, she said.

Certain areas of the bird's brain react to the magnetic field while navigating. The question, then, is: Where in the bird is the sensor to detect the magnetic field?

Previously, Dickman and his team studied the navigation circuit within the pigeons' neural networks. Their research showed an increase in neural activity in the vestibular system, which regulates motion, equilibrium and spatial orientation; the thalamus, which is responsible for relaying sensory and motor signals; the hippocampus, which modulates memory and emotions; and the visual hyperpallium.

To collect data of her pigeons' flight patterns and behaviors, Lefeldt fashioned small backpacks for each bird. Each handmade backpack is outfitted with a GPS tracking device and wireless transmitter that allows Lefeldt to track each bird's exact location, position, direction, speed, acceleration and altitude from her smartphone. Most importantly, the device has a built-in magnetometer, which records what the magnetic field looks like wherever the bird is flying.

Weighing about 20 grams, the backpack is not cumbersome for the birds to carry, but it can draw unwanted attention.

On one occasion, a pigeon landed on an office building in the Galleria and perched itself on a man's windowsill to take in a bird's-eye view of the city. Noticing the blinking light and assuming it was an improvised explosive device, the man called the police to report a potential bomb threat.

"Thankfully, our birds are tame, so the policeman could just pick him up and read my telephone number," Lefeldt said. "I had to go down to the police station and get my arrested pigeon back."

Lefeldt's well-trained pigeons are taught to return home to their pigeon penthouse every day at 10 a.m. and 5 p.m. for breakfast and dinner. Because they were bred in the lab, Lefeldt was able to train them when they were very young. She blows a whistle at each feeding time, which the birds eventually come to associate with the time of day.

"Pigeons are actually very smart," Lefeldt said. "When it's close to 10 a.m., they are already sitting, waiting for their automatic feeder."

After spending nearly six years with pigeons for her Ph.D. and now post-doctoral work, Lefeldt has grown quite fond of her feathered friends. She named her favorite pigeon Boomerang because he always comes back home after she releases him. Some are named after Greek gods and goddesses, including Aphrodite and Zeus, while others are named for philanthropists, like Bill and Melinda Gates. There are also Halloween-themed names: Salem, Wizard and Jack O' Lantern. (When Lefeldt realized Jack was a female, she renamed her Jackie.) Recently, Lefeldt even tackled a 3-foot tall hawk that had wandered into the loft, to protect her pigeons from becoming dinner.

The next step in the research project will be to record brain activity during free flight. The birds will swap out their backpacks for tiny helmets designed to monitor their brains. According to Dickman, this will be the first ever research initiative to record the brain activity of an animal in the wild.

As home to one of the only active radical research pigeon lofts in the country, Baylor has partnered with SpikeGadgets, a San Francisco-based neuroscience device company, to serve as a beta test site for the company's new neural recorder. The device, which weighs less than 2 grams, will be attached to the helmets and mounted on the birds' heads to record the neural activity in the hippocampal brain circuit while in flight.

"We will see how the cells react in different environments: When do the cells fire? What do the cells react to? Which brain areas are relevant for navigation?" Lefelt said.

Once she and her team identify which part of the brain is involved, they can focus future research on that specific area to apply what they learn to treating human diseases.

"Hopefully, we can put together all the puzzle pieces," Lefeldt said.



Insight into Alzheimer's

Researchers are looking for signs of the disease in retina tissue

By Christine Hall

andra Devall stood by the window at Alvin Community College, looking for her husband's pickup truck.

In her haste to get to watercolor class, she had left home without some of her art supplies.

"He doesn't mind bringing them to me," Devall said. "My husband is used to me calling about something that I've forgotten."

Forgetting things has steadily become Devall's norm since 2013, when she was diagnosed with early-onset Alzheimer's disease. But taking water-color class two days a week and being a master gardener help maintain her social engagement skills.

By the time she was officially diagnosed, Devall, 75, knew what was causing her memory deficiency. The retired graphic arts teacher at College of the Mainland had noticed the same



symptoms while taking care of her mother, who also had Alzheimer's.

Devall's mother was diagnosed at age 70, two years after she had moved in with Devall and her husband following her own husband's death.

"She had watched two sisters go through it, and I knew she was very afraid of having it," Devall said. "Ironically, I don't think she was ever aware she had it. She lived only two years after that."

Prior to her mother's diagnosis, Devall recalls not being able to pinpoint any symptoms that might have led them to think her mother had Alzheimer's or the eventual multi-infarct dementia caused by the disruption of blood flow to the brain. All she knew was whatever was going on was challenging for everyone in the household—herself, her husband and her mother.

"My mother had been such a kind, easygoing woman," Devall said. "Now she was frightened, and she would not leave my side. By the time I got her to a doctor, it was obvious to him just being around her. I hated to talk about Alzheimer's in front of her because, in her time, you just didn't do that. But the doctor told me, 'Sandra, look at her and tell me if you think she knows what we are talking about."

So four years ago, when Devall began forgetting things, she knew what her doctor was going to tell her.

Key could be early detection

Researchers at The University of Texas Medical Branch at Galveston are studying Alzheimer's disease to determine what can be done to diagnose it earlier.

A recent UTMB study sheds light on how Alzheimer's disease begins within

the brain. Researchers found a relationship between inflammation, a toxic protein, and the onset of the disease. They also identified a way that doctors can detect early signs of Alzheimer's by looking at the backs of patients' eyes.

UTMB researchers have previously found evidence that tau oligomers, which are abundant in the central nervous system, may be present in the early stages of Alzheimer's. Brain cells depend on tau protein to form highways for the cells to receive nutrients and get rid of waste, said Rakez Kayed, Ph.D., an associate professor in UTMB's department of neurology and one of the authors of the recent study. In some neurodegenerative diseases, including Alzheimer's, the tau protein changes into a toxic form known as a tau oligomer and begins clumping into neurofibrillary tangles, he added.

"They cause havoc in a brain cell and are super toxic because the nervous system doesn't recognize it," Kayed said.

When those proteins stick together, molecular nutrients can no longer move to where they are needed, which leads to the eventual death of the brain cells.

In a paper published in the Journal of Alzheimer's Disease, the authors provide evidence "that tau oligomers are present in the retina and are associated with inflammatory cells ... These results suggest that there may be a toxic relationship between tau oligomers and inflammation."

Imaging the brain for evidence of tau oligomers is a complicated procedure, but an eye exam is not, Kayed said. Researchers are also looking at tau levels in spinal fluid as an indicator of Alzheimer's, he added.

"The problem with Alzheimer's is that the genetic component is limited—a small number of people have genetic risk factors for the disease," Kayed said. "If we could test spinal fluid, the eyes and eventually blood, it could tell us the best therapy. If we do this early enough, we could possibly halt the progress of Alzheimer's."

Little tests

Devall wishes an eye exam could have given her an earlier Alzheimer's diagnosis, but she is hopeful that researchers will be able to help others with this discovery.

She volunteers for Alzheimer's research and testing at UTMB.



Sandra Devall, who has Alzheimer's disease, attends a watercolor class at Alvin Community College to keep up her social and physical skills.



Devall paints a tree in her front yard from memory.

Alzheimer's is that the genetic component is limited—a small number of people have genetic risk factors for the disease. If we could test spinal fluid, the eyes and eventually blood, it could tell us the best therapy. If we do this early enough, we could possibly halt the progress of Alzheimer's ... ?

— RAKEZ KAYED, PH.D.

Associate professor in the department
of neurology at The University of
Texas Medical Branch at Galveston

While there isn't treatment to reverse memory loss and dementia, the effects of Alzheimer's can be slowed with treatment and medication. Devall's doctor, Erin Hommel, M.D., assistant professor of geriatrics at UTMB, said one of the most important treatments is regular physical and mental exercise.

Devall likes to give herself little tests everyday: While driving down the street, she will try to remember three things she sees. She also keeps in touch with loved ones and gets her extended family together at least once a year. She and her husband have six children, 10 grandchildren and 10 great-grandchildren.

"Patients are encouraged to complete advance directives while their mind remains sharp and decisional capacity is not affected," Hommel said. "After discussing stages of disease, importance of exercise, safety and legal considerations, then we discuss options for medical treatment of the disease. There are a few medications that have been shown to slow memory decline. A choice to start medications is made after consideration of risks and benefits for each patient.

"Patients and their families may also be referred to community resources including electronic media to improve their understanding of the disease and to engage with others affected," she added.

Devall likes to share her experiences with others in the same situation. She is a member of the Houston & Southeast Texas Chapter of the Alzheimer's Association, where she often speaks publically about her condition. UTMB is involved in the association, as well.

Now in her fourth year of watercolor class, Devall likes to paint memories. Her most recent project is a tree in her front yard. At a recent class, she worked on blending purples and blues and browns together to get the right shade for the trunk. With her teacher's help, she painted the shadows of the tree limbs on the grass.

Pointing to a section of the tree where a limb connects to the trunk, she said: "Here is where my greatgrandchildren like to sit. I am painting this because I want to remember that."





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Bridging a Gap

A new program aims to improve the mental health and well being of at-risk tweens and teens

By Britni N. Riley



Kenya and her classmates respond to a question from Angelica Edwards, LMSW, who teaches BridgeUp classes at Francis Scott Key Middle School.

welve-year-old Kenya loves shopping, Beyoncé, dancing and all things purple. Like other sixth graders, she's deep in the emotional turmoil that is middle school—frenemies, crushes, hormonal changes, academic pressures. The list goes on.

"I've been friends with this girl ever since last semester, and now we're, like, enemies," Kenya said. "She will sit with the other kids and make fun of me and not stop. ... In some classes, she will act like she wants to talk to me and stuff and then in the other classes, she will just be mean like the other kids."

Kenya also faces broader challenges. She attends Francis Scott Key Middle School, located in the Kashmere Gardens section of northeast Houston, a low-income area with limited access to health care, transportation and youth facilities. For several years, Kashmere High School has failed to meet the state's academic standards. Ten years ago, a study by Johns Hopkins University and the Associated Press called

the school a "dropout factory," because at least 40 percent of the freshman class didn't make it to graduation.

Adeeb Barqawi realized that something had to change in the Kashmere community when he taught chemistry at Kashmere High through Teach for America.

"Many of these kids come from single-parent homes," Barqawi said. "One parent might be in jail. We are dealing with high rates of teen pregnancies and some of the highest dropout rates in the country."

In an effort to address these issues, Bargawi started ProUnitas, a nonprofit that helps provide essential services to students in the Kashmere community and promote success among students. This past spring, ProUnitas collaborated with The Menninger Clinic, a psychiatric hospital that treats adults and adolescents with complex mental illness, to launch BridgeUp at Menninger at Key Middle School.

"BridgeUp is focused on improving the mental

health and well being of the community's youth and, in particular, youth who are disadvantaged—coming from poverty, ethnic minorities that have already started out behind the eight ball," said C. Edward Coffey, M.D., Menninger President and CEO.

In all, \$1 million in BridgeUp at Menninger grants were awarded to seven recipients in Greater Houston to integrate social and emotional learning into the core curriculum for at-risk students. BridgeUp is part of a larger national program founded in New York City.

Barqawi and ProUnitas decided not to implement the program at Kashmere High School, but to launch it instead at Key Middle School, which has a population of approximately 700 sixth-, seventh- and eighth-graders.

"By having BridgeUp at the middle school, we are reaching students before their behavioral issues become a major problem," said Angelica Edwards, ProUnitas linkage manager at Key Middle School and a licensed master social worker (LMSW). "This is the age where you don't really know who you are yet ... you're experimenting. Should I hang with this crowd or that crowd? Your body is changing and you are really trying to figure out who you are. This is a very critical time. We get to the kids now, in middle school, so by the time they get to high school, they will be set and focused on who they are as a person."

In the 2015-16 school year, Key Middle School led the district in the number of behavioral referrals, a way for teachers to refer students to administrators to be disciplined. There were 1,486 behavioral referrals for the school year, according to data collected by ProUnitas.

BridgeUp at Key Middle School works with students through a tiered system based on three risk factors: attendance, behavior and coursework. Tier One students are deemed the lowest risk; Tier Three students are considered the highest risk.

For the past year, Kenya and some of her classmates at Key Middle School have been attending the voluntary BridgeUp classes taught by Edwards, who works with Tier One and Tier Two students.

"In Child Builders, we talk about our problems and healthy relationships and unhealthy relationships," Kenya said. "It will help me a lot to learn how to not argue with my friends and with my family members."

Students also see Edwards one-on-one for counseling, either voluntarily or as a result of a referral from a teacher or administrator.

The main goals of BridgeUp are to keep kids in school, teach them how to cope with conflicts that arise in school or at home, and, most importantly, succeed in life.

Although BridgeUp has been very helpful for Kenya, she still struggles.

"Last semester was kind of hard because my third period teacher always gives me zeros for no reason," Kenya said. "In my other classes, they make learning fun. I love my reading class. We are reading a book called *Monsters*. It has been really fun because my reading teacher in first period gave us all different parts to read."

Recently, Kenya was suspended.

"This boy had thrown a book at me and the teacher didn't do nothing about it," Kenya said. "So I defended myself and I hit him back. I was so scared because

66 ... we talk about our problems and healthy relationships and unhealthy relationships. It will help me a lot to learn how to not argue with my friends and with my family members. "> "

– KENYA

 $A sixth-grader\ at\ Francis\ Scott\ Key\ Middle\ School$



after that, he got all of his sisters that are in high school and they tried to jump me."

When she returned from suspension, Kenya went to Edwards for advice.

"Kenya processes everything with me and she told me about what happened with the suspension," Edwards said. "The girls this age like to play with the boys and then it turns serious, so I told her to not touch the boys and to distance herself from people who are

At the end of the school year, Kenya will be moving to a different part of Houston to live with her mom.

66 BridgeUp is focused on improving the mental health and well-being of the community's youth and, in particular, youth who are disadvantaged ... 🤊 🦻

> - C. EDWARD COFFEY, M.D. President and CEO of The Menninger Clinic

Although she is sad about leaving her friends and family at Key Middle School, she is looking forward to a fresh start.

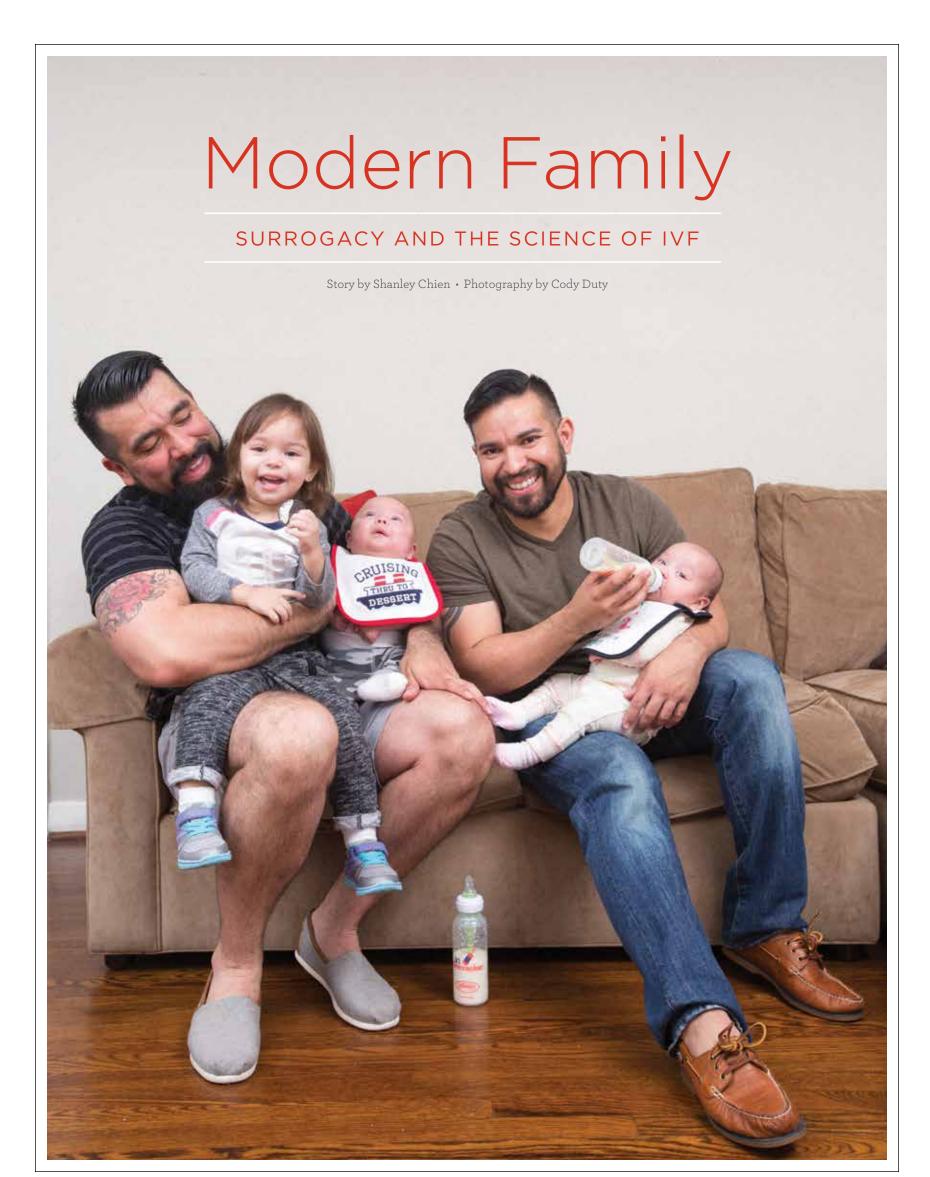
"I feel sad about moving," Kenya said. "When I think about it I start crying. But at my next school, I am going to choose the right friends to hang with and look for positive people like Ms. Edwards told me."

BridgeUp is a new program, so administrators are still working out the kinks. In the two semesters BridgeUp has been operating at Key Middle School, Edwards and her ProUnitas team have experimented with holding the classes at different times during the day and on different days of the week to see which times work best for students and their families.

"This year there has been a lot of inconsistency because we are trying things and because I was new on campus," Edwards said. "Now the students love coming to talk with me. ... We have also seen referrals go down by 600 from the 2015-2016 school year."



Kenya, 12, in the hallway of her school.



Enrique Vasquez, left, holds Vivienne and Evan, and Adrian de Luna holds Lilienne.

drian de Luna sat on the living room sofa in his Houston home, cradling his 5-month-old son, Evan, in his left arm and propping up a bottle of formula with his right. The U.S. Marine-turned-full-time-dad looked into his son's bright blue-gray eyes, still half open after a midday nap.

De Luna's husband, Enrique Vasquez, sat beside him, with Evan's twin sister, Lilienne, nestled in his arms.

It was a relatively peaceful moment for the couple, but the sound of their 2-year-old daughter's erratic footsteps punctuated the silence. Vivienne stomped with excitement on the wooden floor, proudly brandishing a half-eaten Oreo.

Vivienne had just finished a 2-minute meltdown. Even with tears streaming down her face, her brown hair stuck to her cheeks and her mouth open wide enough to reveal baby teeth, she bore a striking resemblance to de Luna. They had the same big brown eyes, the same nose, the same smile.

"There's no denying that Adrian's her father," Vasquez said.

Incomplete

The couple met in 2007 at a bar in downtown Houston. Vasquez, who was working on his degree in mechanical engineering at the University of Houston, was hanging out with a friend when—like a meet-cute scene right out of a romantic movie—he caught a glimpse of de Luna in the crowd.

"It's going to sound super cliché, but it was love at first sight when I saw him," de Luna, 35, said.

They've been inseparable since then. In 2011, de Luna and Vazquez filed for a domestic partnership license by mail through the state of Washington. Then, in 2014, a year before the U.S. Supreme Court legalized same-sex marriage across the country, Washington converted domestic partnerships to marriage. Vasquez and de Luna were officially hitched.

But their love story was incomplete. They wanted children.

"I always wanted kids, but I told myself, 'I'm never going to have kids.' I made myself understand that was not a possibility," de Luna said.

66 I would like both of us to have the chance to have a child. Whether it goes through or not, that's up to the universe. 🤊 🤊

- ENRIQUE VASQUEZ

"When you don't have the means to go through something this big, you think, 'Well, how is this going to happen?""

For Vasquez, who has four siblings, 13 nieces and two nephews, having a big family was always

"Even when I knew that I was gay in high school, I still wanted a family and ... I was going to do whatever I could in my power to make this happen," Vasquez, 33, said. "I wanted to leave a legacy, if that's possible."

The couple briefly considered adoption, but out of fear that the child's biological parents would take issue with gay parents and try to win back custody, they decided against it. Even after gay marriage became legal in the U.S., de Luna and Vasquez knew that without any statewide protection from anti-discrimination laws, they might find themselves at a disadvantage if a legal battle ever ensued.

Two of their female friends offered to try an unconventional form of artificial insemination. This DIY approach would require one of the men to fill a syringe with his semen, which a female friend would then inject into her vagina.

"Like you're basting a turkey," de Luna said, sheepishly.

And then, there was surrogacy. For that, de Luna and Vasquez would need to find an egg donor and hire a woman to carry their child to term by way of in vitro fertilization, or IVF, a procedure in which an egg is fertilized with sperm in a lab. The embryo or embryos formed are then implanted into a woman's uterus, where a baby or babies are carried to term.

The success rate for pregnancy by embryo transfer for a woman under 35 falls between 55 and 57 percent, according to the U.S. Centers for Disease Control and Prevention (CDC), which monitors and compiles data for all assisted reproductive technology procedures performed in the U.S. But it comes at a steep price.

The average cost of surrogacy ranges from \$98,000 to \$140,000, including the gestational surrogate mother fee, the surrogacy agency fee, the cost of IVF and fertility treatments, as well as expenses for travel and legal fees.

With such a high price tag, surrogacy was looking more like a distant dream than a viable option.

Giving thanks

In November 2012, Vasquez's older brother, Marco, 42, and his wife, Nora, 31, brought their three daughters to the couple's home to celebrate Thanksgiving. As the extended family sat around the dining room table, Marco verbalized what Vasquez and de Luna had only discussed in private.

"You guys would be amazing parents," Marco said. "You guys need to have a family."

"Yeah, but how?" de Luna lamented.

Marco volunteered Nora. Although they had never discussed her being a gestational surrogate before that moment, she eagerly agreed.

"I tell them, 'Do what you gotta do. Do your research. Just tell me where to go, and I'll show up,"" Nora said.

Gestational surrogacy, in which the gestational mother carries a fertilized embryo implanted by assisted reproductive technology, is legal in Texas. Traditional surrogacy, in which the gestational mother provides the egg, is not. Chapter 160 of the Texas Family Code outlines additional guidelines: the intended parents must be married and the gestational mother and her husband, if she has one, must relinquish all parental rights.

Between 1999 and 2013, about 2 percent (or 30,927) of all assisted reproductive technology cycles used a gestational carrier, according to the CDC. That number is on the rise, particularly since the Supreme Court legalized same-sex marriage.

Vasquez and de Luna considered this new option. At this point, de Luna was working as a communications specialist on an oil rig in South Korea. His salary was substantial enough to cover a majority of the surrogacy and IVF treatment costs, but it was the first time in the couple's six years together that they would be apart.

(continued)



Nora Vasquez with her husband, Marco, and their daughters, Angelica, Monica and Veronica.

66 I know that, biologically, the twins are not my blood, but I'm here. ... When Enrique travels for work, the sleepless nights are mine. "

- ADRIAN DE LUNA

"I would go to sleep crying every night because I was homesick and I missed him," de Luna said.

In their respective workplaces, the couple spoke in code, referring to each other as "she" or "my wife," out of fear of ostracization from employers and coworkers. It was particularly hard on de Luna.

"He couldn't have a picture of me. He couldn't call me. He couldn't do anything," said Vasquez, who works as a project manager for an oil and gas company. "We have to hide who we are because of the industry we work in. On top of having that distance and not being able to see him every day, we have that barrier."

After two years, de Luna and Vasquez saved enough money for the surrogacy procedure. They had one major condition: Each wanted the opportunity to be a biological father.

Vasquez remembers telling Nora: "I would like both of us to have the chance to have a child. Whether it goes through or not, that's up to the universe."

Nora agreed and understood that she would be undergoing two pregnancies, one for Vasquez and one for de Luna, using donor eggs.

Nora and Marco already had three children of their own. After their third child, she underwent a tubal ligation, in 2010. But because the embryos would be implanted directly into her uterus, having her tubes tied would not be an issue.

"It's special to me because these are my best friends," Nora said. "For them to want to do this, I was really touched by it."

Same biological mother

A gestational surrogate mother working with an agency can earn anywhere from \$35,000 to







Top left: Adrian de Luna plays with the couple's 5-month-old son, Evan. Top right: Enrique Vasquez cuddles with the couple's oldest daughter, Vivienne. Bottom: Twins Evan (left) and Lilienne (right).

\$45,000, based on her age and experience. Paid in monthly installments, the fee covers her service as a gestational carrier, the IVF transfer, maternity clothing, housekeeping and post-birth recovery. It's a typical business transaction.

But the situation with Nora wasn't typical. On top of the required attorney fees and IVF treatments, de Luna and Vasquez pondered how to compensate their sister-in-law.

"We wanted to make sure she was fulfilled for the miracle that she gave us," Vasquez said. "There's nothing in this world we could ever give her for what she gave us."

They offered to pay her cash, buy her a car and a house, but she refused it all. The only thing she asked for was a "mommy makeover"—a tummy tuck and breast lift—after the final delivery. Nora also agreed to a \$300 monthly stipend to purchase maternity clothes and supplies for a single pregnancy, and \$400 for a twin pregnancy.

While Texas is considered surrogacy-friendly, the state's surrogacy law does not provide any special language for same-sex married couples. Vasquez and de Luna hired an attorney who specializes in LGBTQ reproductive law to help them navigate the legal minefield of contracts and insurance.

To prepare for her surrogacy, Nora underwent a mandatory psychological evaluation, followed by an extensive medical examination. The couple's fertility expert, Mazen Abdallah, M.D., a reproductive endocrinology and fertility specialist with Children's Memorial Hermann Hospital and McGovern Medical School at UTHealth, and medical director of Houston Fertility Institute, performed an ultrasound to check for fibroids or structural defects in the uterus that would raise concerns. Abdallah also did a hysteroscopy to look inside the uterus for scar tissue, polyps or anything that could have been missed during the initial ultrasound

Abdallah explained that, if a woman in her 20s or 30s has been pregnant and has successfully given birth in the past, her chance of carrying to term again is higher than if she had not carried to term or been pregnant in the past. Because Nora delivered three children with no complications, and because she had never miscarried, she was considered a perfect candidate for surrogacy.

Then the search for an egg donor began. De Luna and Vasquez pored over nearly 30 different profiles of egg donors, which included a photo of each woman, along with her age, height and complete medical history up to maternal and paternal grandparents. Names and personal information were withheld for privacy reasons. Choosing a donor was like browsing through Facebook profiles until they finally found the right woman.

They purchased 16 eggs from one donor, eight for de Luna and eight for Vasquez, for two cycles of IVF. The couple wanted their children to share the same biological mother.

Pills and shots

To prepare her uterus, Nora underwent a series of hormone therapies to simulate the natural cycle of pregnancy. She first took estrogen pills three times a day to mimic what happens during a natural conception cycle.

"In the beginning, the uterus is exposed to estrogen," Abdallah said. "We monitor the response of the uterus by doing an ultrasound and measuring the lining of the uterus."

Once the lining reached an ideal thickness, Nora needed to take a second medication, progesterone, to prepare the uterus to receive the embryos by inducing the production of nutrients necessary for the embryos to thrive. These pills were taken for five to six days to synchronize the uterus with the embryos, creating the optimal window for implantation.

In addition to this combination of estrogen and progesterone, Nora received at-home hormone injections of Lupron to prevent her menstrual cycle from interfering with the surrogacy. Her husband, Marco, diligently practiced injecting a needle into an orange until he was confident enough to administer the Lupron shots himself. Every day for 11 weeks, Nora endured injections in her buttocks.

"Not once did I feel like, 'You know what, I'm not okay with this," Nora said. "My heart wasn't racing. I wasn't nervous at all. It felt like this is what I was supposed to do and it felt right to me. It was harsh, but I made it through."

Meanwhile, Abdallah and his team inseminated the batch of eggs with de Luna's sperm and grew the embryos in culture. After the fifth or sixth day, Abdallah implanted two embryos. Then they waited.

"With every treatment ... I can't say I'm as anxious as the woman or the man, but I'm anxious to see the results," Abdallah said. "To date, I haven't lost that anxiety."

But Nora could not bear to wait the recommended two weeks to find out whether or not she was pregnant. A week after the implantation, she bought a home pregnancy kit, eager to find out if she would be delivering good news to the couple or crushing their dreams.

The test was positive. De Luna and Vasquez were going to be parents.

Fighting stigma

Nora knew it would be confusing for her three children to see their mother pregnant, but not with their brother or sister.

"We told them from day one what I was doing," Nora explained. "They know their uncles are gay. I told them they wanted to have a family, but they can't have kids because they're boys, so they wanted me to carry their baby."

Every day, she read them a children's book about surrogacy, *The Kangaroo Pouch*, so that, little by little, her girls would understand that she was carrying their cousin. But Nora still fought



Mazen Abdallah, M.D., demonstrates the implantation process at Houston Fertility Institute.

stigma from friends and family.

"I had friends who asked me, 'What are they going to explain to the kids when they grow up?"" Nora said. "'Where's their mom?""

Others questioned whether or not she would be able to go through with the surrogacy. Even Nora's mother, whom she describes as "old-fashioned," worried that she would suffer an emotional breakdown from giving birth to the babies and then giving them away.

But Nora never wavered. She prepared herself to not feel attached, to not view herself as the baby's mother.

"Once I say I'm going to do something, I'm going to do it," Nora said. "I keep my word. I don't back out."

Labors of love

Towards the end of the 39th week, Nora began experiencing contractions one morning. It was time. As she and Marco sped to the hospital, she repeatedly called and texted Vasquez and de Luna, both of whom had moved to San Antonio by then for work.

"I'm already having the baby!" Nora told them once they finally called back.

"Oh my gosh, really?" they said.

"No, I'm kidding," she joked.

While they waited for her to dilate, her doctor administered Pitocin to induce labor. The medication didn't take effect immediately, allowing Vasquez and de Luna to hightail it the 200 miles from San Antonio to Memorial Hermann Hospital in Houston.

Twelve hours later, Nora delivered Vivienne Katalina Vasquez—born 7 lbs., 1 oz.—at 7:01 p.m. on July 25, 2015, exactly 37 years after the birth of Louise Brown, the first "test tube baby." It was a milestone in the couple's lives that coincided with the anniversary of the scientific breakthrough that allowed their dreams to come true.

Six months later, the couple and Nora were ready for round two. They inseminated the eight remaining eggs with Vasquez's sperm, ready to experience the same elation as their first pregnancy. But of the eight eggs, only one became an embryo. The chances of a single embryo catching were slim.

Abdallah was hopeful, but he couldn't make any promises. Two weeks later, a blood test confirmed the worst.

"I was devastated," Vasquez said. "When I thought that I wouldn't have a child biologically, I prayed on it. I asked for things that maybe I had no right to ask for."

Financially, de Luna and Vasquez hadn't prepared for a third attempt. They had already spent \$30,000 for the first treatment and another \$30,000 for the second.

But they decided to try again. This time, of the 10 eggs they inseminated, eight became embryos. Abdallah selected the best two embryos and implanted them in Nora. One of the eggs was already splitting; there was a good chance they would be having twins.

"Only God knows why He does the things He does," Nora told the couple. "Maybe that's why you didn't come out pregnant the first time. Now, you'll have two."

And two it was. Standing at just under 5 feet, Nora's petite frame carried a single baby easily, but carrying twins would be a new and daunting challenge. Vasquez and de Luna couldn't imagine how someone her size would be able to hold two babies.

"To me, I was just like, 'I'm going to be suffering for nine months, but you're going to be stuck with them for 18 years, so I'm okay," Nora joked.

Within three months, Nora's stomach had doubled in size. By six months, it had tripled in size and protruded so far from her body that it looked like she was ready to give birth any minute.

(continued)

ADVANCEMENTS IN IVE

The first major breakthrough with in vitro fertilization (IVF) came in the late 1970s, when two British researchers, gynecologist Patrick Steptoe, M.D., and physiologist Robert Edwards, Ph.D., performed the first successful IVF in a human.

Lesley and John Brown had been trying to conceive for nine years, but an obstruction in Lesley's fallopian tubes prevented pregnancy. Steptoe and Edwards successfully implanted a fertilized embryo, grown in culture in a lab, in Lesley's body, resulting in the first IVF pregnancy. On July 25, 1978, Lesley gave birth to a healthy daughter, Louise, the first "test tube baby."

"Around that period of the genesis of IVF, we really didn't know how to culture embryos, so the results were really abysmal," said Mazen Abdallah, M.D., a reproductive endocrinologist at Memorial Hermann Hospital and medical director of the Houston Fertility Institute. "You had to do several cycles to get one live birth. It was around 5 to 10 percent chance of live birth per treatment."

But the science evolved and researchers improved their techniques.

By the mid-1980s, IVF had a success rate of 10 percent. By the mid-1990s, IVF had a success rate of 25 percent. By the early-2000s, researchers learned how to effectively grow embryos in culture to the peak implantation stage.

"Now we're at the stage where we're putting one or two embryos at a time rather than putting the average for the 1980s, when you would put as much as you have because the results were not that good," Abdallah said. "We all remember Octomom. Octomom is basically a mishap. ... It's a risk you take when you put as much as you can at once."

Another major breakthrough in the field of IVF occurred in 1992, when Gianpiero Palermo, M.D., Ph.D., developed intracytoplasmic sperm injection (ICSI), a method to help overcome male infertility by injecting a sperm into the egg to induce fertilization.

"We used to notice that, when the sperm numbers were low, even if you put a lot of sperm to surround the egg, the egg wasn't being fertilized," Abdallah said. "It's not only sperm numbers. It's sperm function."

Using the ICSI approach, scientists were able to fertilize eggs even if sperm quality was poor, effectively expanding the scope of IVF to help infertile men.

Around the same time, scientists developed a procedure called preimplantation genetic diagnosis to test for genetic defects within embryos prior to implantation. By scanning the number of chromosomes in the embryo, scientists can select embryos that are chromosomally normal to use for implantation, improving the delivery rate to 70 percent, Abdallah said.

Today, 1.6 percent of all infants born in the United States are conceived using assisted reproductive technology.



Mazen Abdallah, M.D., a reproductive endocrinology and infertility specialist with Children's Memorial Hermann Hospital and McGovern Medical School at UTHealth, also serves as the medical director of Houston Fertility Institute.

Her feet were swollen and her legs hit her stomach when she walked. She felt sleepy all the time and experienced dizzy spells and palpitations, a sign that her heart was working on overdrive to support the twins. Cramps left her in agony and she would cry in the middle of the night from the pain. Then the hemorrhoids came.

"It was unbearable to lie down, sit up, walk, anything," Nora said. "It was so painful that I was crying all the time. I couldn't sleep. I couldn't even move because the pain would wake me up."

But Nora never complained to Vasquez and de Luna, who had moved back to Houston after learning they were expecting twins. She knew how important her role as a gestational surrogate was and felt protective of the babies.

"Every time I was on the road when I was pregnant with their kids, I was always like, 'God, please make me come back home safely because I'm carrying very valuable babies right now,'" Nora said

As Christmas Eve 2016 arrived, both families gathered at the home of Vasquez and de Luna to celebrate, make tamales and unwrap presents. When the festivities ended, de Luna tucked Vivienne into bed while Vasquez went to look for his two Yorkshire terriers, who had scampered away at the sound of fireworks going off in the neighborhood.

Suddenly, at 2:37 a.m., they heard someone ringing the doorbell and banging on a window.

"It's time! It's time!" Marco yelled through the window. The twins were on their way.

They rushed to the delivery room, where a nurse wearing a sparkly Christmas ornament headband prepped Nora for delivery. Their excitement quickly turned to concern when they learned Nora needed an emergency C-section: One of the babies, the girl, Lilienne, was in a breech position. The medical team needed to retrieve both babies immediately.

"All I knew was that they were going to cut into my sister-in-law, who didn't want to get cut into," Vasquez said. "I thought, 'She's not going to talk to me. She's going to hate me the rest of her life because these are my kids, biologically speaking.' Petty things, but those were things that were running through my head."

Around 8:40 a.m., the doctor made an incision in Nora's abdomen, reached in, and carefully pulled out Lilienne. Then the doctor went back in for her brother, Evan, who had inhaled some fluid and was having trouble breathing. A team of specialists from the NICU tapped Evan on the back with a neonatal percussor to help him cough up the fluid from his lungs.

The team reassured the family that the babies were okay, but they needed to be taken to the NICU right away. (continued)

Facing page: Back row, Marco Vasquez with his arms around his daughters, Veronica and Anjelica.

Seated left to right, Enrique Vasquez with his son, Evan; Nora Vasquez, with her niece, Lilienne; Adrian de Luna holding daughter, Vivienne, and niece, Monica.



There's nothing in this world we could ever give her for what she gave us.

- ENRIQUE VASQUEZ

De Luna and Vasquez watched all the commotion in horror. They stood beside Nora, trying to keep her from noticing the smoke rising from behind the curtain around her midsection and the smell of burning flesh as the doctor cauterized the C-section incision to stop the bleeding.

They were so frightened, sleep deprived, and emotionally wrecked that it didn't even dawn on them that it was Christmas Dav.

It was a Christmas miracle; the twins were out of the woods. In the weeks that followed, the couple was able to take home two healthy babies and introduce them to their big sister, Vivienne. Finally, their family was complete.

"The level of respect for what Nora's done and for anybody who is willing to go through this is crazy," de Luna said. "What word do you use to describe that? The bond is definitely thicker between us."

Parenthood

Most new parents experience feelings of selfdoubt and high stress, and Vasquez and de Luna



Adrian de Luna holds a photograph of Vivienne at the hospital a day after she was born.

are no exception. After all, they're juggling three kids under the age of 2. But every penny, every IVF attempt, every sleepless night and every moment that went into building this modern family was worth it.

"I know that, biologically, the twins are not my blood, but I'm here," de Luna said. "When Enrique travels for work, the sleepless nights are mine. Those are my memories with my children. Nobody's going to tell me how Evan likes to be rocked to sleep. Nobody's going to tell me how Lilienne likes to be on her own when she's being fed. ... Those are things that I know."

For both de Luna and Vasquez, children are the culmination of a lifelong dream.

"Whenever I would hang out with everyone at a barbecue with my family, we'd be out there and my nieces would come out and say, 'Hi, uncle!' But when they'd see their mom or their dad, they'd be like, 'Hi, dad! I love you!' and they'd hug them," Vasquez said. "I'd never bring this up with anyone, but I would say, 'I want that.' I have that now. I have somebody who's going to run to me or to my husband ... and say, 'Dad, dad!' Give me a hug first. Give me all that emotion and love first! That's been the most rewarding experience ever."

It's been a long road to happiness for the couple. At different points in their lives, they were convinced it wouldn't be possible for them to have children. But here they sit, on their living room sofa, wiping the twins' mouths as they watch Vivienne amble around the house "like a tiny drunk human" with a half-eaten Oreo cookie in her hand.

It's overwhelming. It's challenging. It's messy. It's family. \blacksquare

DIANA HELIS HENRY AND ADRIENNE HELIS MALVIN MEDICAL RESEARCH FOUNDATIONS 2017 JOINT LECTURE SERIES IN CANCER RESEARCH

"THE ROLE OF DNA DAMAGE RESPONSE IN TUMOR SUPPRESSION AND AGING"

Baylor College of Medicine Cullen Auditorium Tuesday, May 16, 2017 3:00 PM

Reception in Rayzor Lounge to follow



Baylor College of Medicine

DAN L DUNCAN COMPREHENSIVE CANCER CENTER



Stephen J. Elledge, Ph.D.

Professor, Medicine, Harvard Medical School

Gregor Mendel Professor of Genetics and of Medicine, Genetics, Harvard Medical School

Professor, Genetics, Brigham And Women's Hospital

Contact: Amy Craft amy.craft@bcm.edu

CURATED

The Intersection of ARTS and MEDICINE

By Britni N. Riley

laude Monet spent nearly every day outside, painting rivers, streams, trees, windmills, flowers, people, lily pads and the famous Japanese footbridge he built at his home in Giverny, France. The Impressionist painter returned to the same landscapes again and again, recording his perceptions of nature in bright colors and brief brushstrokes that emphasized light and movement.

But around 1912, when Monet was 72, he was diagnosed with cataracts, a clouding of the eye's lens that alters perceptions of color and makes things look blurry or hazy.

For 10 years, Monet continued to paint as his eyesight deteriorated. Unable to read the labels on tubes of paint and no longer able to play with color the way he once had, the paintings he created during this period were markedly different than his earlier works.

One of these paintings—The Japanese Footbridge at Giverny, painted in 1922—is part of the permanent collection at the Museum of Fine Arts Houston (MFAH).

"It takes you a while to make out the shape of the Japanese footbridge, which he has painted so many times and you can so clearly see in many of his earlier paintings," said Helga Aurisch, curator of European art at the MFAH. "Number one, it's so dark and it's very, very heavily painted. You can see it is standing up from the surface of the painting."

Taken over by heavy strokes of orange, green, yellow, brown and red, this painting is more abstract, more severe than Monet's earlier efforts.

Interestingly, the artist hung onto his pieces from this period.

"Monet, when he was dissatisfied with a canvas, he would throw it out and destroy it," Aurisch said. "But these, he must have been, I don't know, sort of fascinated by his own work in a way and he didn't destroy them. He kept them."

When first diagnosed with cataracts, Monet's doctor recommended surgery. But the artist was reluctant to take any sort of risk with his vision.

"He starts complaining about his eyesight in 1912, but of course he doesn't want to do anything about it because ... it is as scary for Monet to become blind as it is for Beethoven to become deaf," Aurisch said. "He thought it was from overstraining his eyes for so many years. He had looked into the sunlight hours and hours per day, painting virtually every day of his life."

The MFAH has three Monet paintings in its permanent



1899, part of the collection at Musee

Corbis via Getty Images

d'Orsay, Paris, France. Credit: Leemage/

collection, housed in the Audrey
Jones Beck Building. The Windmill
on the Onbekende Gracht,
Amsterdam, painted in 1874, renders the windmill and its reflection
in vibrant colors and dappled
brush-strokes. Water Lilies, painted
in 1907, captures the light blues
of the water reflecting the greens
and pinks of the lily pads. The 1922
painting of the footbridge stands in
stark contrast to both.

Monet never sold the 1922 painting. It was eventually sold by the heirs to his estate in the 1950s. Audrey Jones Beck was able to acquire it in 1976 and gave it to the MFAH, along with 73 other Impressionist paintings.

By late 1922, when Monet had



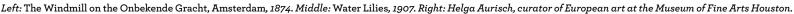
nearly lost complete vision and was only able to perceive light in his right eye, he finally agreed to have surgery for his cataracts. With his eyesight greatly improved, he returned to painting and gave the nation of France eight of the largest-scale paintings he had ever done of his beloved water lilies.

The Japanese Footbridge at Giverny is part of MFAH's permanent collection, Audrey Jones Beck Building, 5601 Main Street. Information: 713-639-7300 or mfah.org











Droppings

A doctor ponders the dangers of bird poop, and more

An essay by Gulchin A. Ergun, M.D.

isgusting is what he said. Then my darling husband delivered an out-loud, tonsil-bragging, uvula-flagging howl and continued his march to get charcoal.

"Don't pretend like you don't know me." I said. "Help me. It got in my eye."

"You're on your own, babe," he snorted. "Restrooms are up front."

"A bird s*&t on my head," I choked, weaving through the PVC pipes, fertilizer bags, buckets, and air compressors. "And that's it? Not even Kleenex? You could've gotten some bleach, even rubbing alcohol. We are in a hardware store, but you just walk away? You didn't even point me to the bathroom."

I ran the water as hot as it could get and squirted some bubblegum-colored liquid out of a soap pump decorated with butterflies and dirty fingerprints. Between the right eye tearing from the bird bomb and the left one burning in sympathy, I calculated the odds of a parasite transporting itself into my brain and balanced that likelihood against liquefying my cornea from the gizzard acid and cleanser I'd just slathered under my eyelids. I am a doctor after all. A gastroenterologist, and I think the worst. Sure, I'll assess the odds, even focus on the positive, but it's to the horrible straight away. A parasite is now making a nest somewhere in my cerebrum. I have scratched my eye beyond repair, and my husband of two decades will ditch me when I need him most. My future was here. No porch rocking in the Tetons in the autumn of our lives. I was dying. Deserted, blind, and paralyzed, victimized by a brain abscess, and destitute because no one gets disability for birds not wearing diapers.

So I splashed water in my eye. Again and again and again, and as hot as I could get it. I tried not to notice the exact composition of whatever fell from the sky, but given the grainy textures, it felt like mustard seeds, blackberry pits, and cricket legs souffléd with worm slime. The choices were endless, and I let myself worry about exactly what was going to kill me.

Like parasites. Worms infect you when you least expect it. You could be finally taking that trip down the Nile. You're hot and

sweaty, decide to jump in, and while you're cooling off, schistosoma are splashing up your urethra. Soon they're kayaking up your blood vessels until they get stuck in the venules of your liver. Then they set up camp, get married, and start a family with their kiddie eggs destroying your lungs and the rest of your liver. Love sushi? Raw fish have rambunctious fluke that love to paddle around the shores of your bile ducts, clogging them up and triggering autoimmune storms that cause cancer. And if your feet hurt from walking all day,

wasn't all that insulting. whatever you do, don't take your sandals off in Louisiana or

Vietnam. Strongyloides can squeeze in between bare toes. Next thing you know, you have larvae crawling under your skin and you're coughing up worm litters.

My nemesis was probably a pigeon. And given that he didn't bite me, it was probably his breakfast or leftovers from lunch that were about to infect me, but then again, what did I know about birds? All I knew came from Hitchcock, Heckle and Jeckle cartoons, and Ace Ventura: Pet Detective, a movie Matt thought was stupid, but I thought was kind of funny. In my travels, pigeons didn't dive-bomb you, they were pretty much vegan. The only messages I imagined scrawled on their ankles were diet tips by grannies in the park. Bread and popcorn—the new healthy carbs. But other than wasting muscle and generating potbellies, stale bread didn't kill you. What else did birds eat? I've seen pelicans dive for fish. I've watched seagulls make off with French fries. Once I saw a grackle peck at a packet of sugar until it broke open so he could lick the granules off the ground. I thought that was pretty smart. It made me think that calling someone birdbrained

Even if I didn't know what they ate, I remembered that guano is high in phosphate and nitrogen (thanks,

Pet Detective) and good for fertilizing and spreading seeds. And somewhere, maybe medical school, I vaguely recalled that seeds come with bacteria or fungus that live in intestines and hitchhike to wherever they drop. That means bugs: salmonella, psittacosis, E. coli, or fungus, like histoplasmosis or cryptococcus. What else? Viruses ... like bird flu, St. Louis encephalitis virus, and, oh my God, Ebola.

I grew up in Ohio. I played in that dirt. A lot of people in the Mississippi and Ohio River Valley get histo. The spores love soil contaminated with bat or pigeon poop. I probably inhaled some spores. That would have triggered an upper-respiratory infection. It would explain the calcified lymph nodes on my chest X-ray. It would be the most common cause, but unless you're immune-suppressed, shouldn't be a problem. The next four? Treatable with antibiotics. But Ebola?!? That was bad, real bad. That's the virus they make movies about. It closed down that Dallas hospital, even got a nurse infected despite precautions. It has almost perfect transmission efficiency. Leaves you dying a horrible but colorful death, oozing blood from your eyes, brain, lungs, and skin within days of exposure. No good-byes. No time. No treatment. We live in Houston. That bird could have flown down here after a pit stop in Dallas.

No wonder Dad didn't let us have pets. He always said it was because my baby brother with Downs was more vulnerable to infections. How my sister cried when he told us Tag-Along had to go. She loved that fuzzy bignosed lemon pouf duckling she raised for a science class. We thought he was just

Illustration: Nadya Shakoor

mean when he gave him to a neighbor with a farm. We were so wrong. He was just watching out for us.

So where was my bugger headed? He was probably making a beeline for my temporal lobe. After all, that's where my memory and emotion are stacked and stored. And if I had to pick the thing that matters to me most, I'd pick my memories. That's what I hoard, although I am proud of how good I've gotten about throwing things away. I've learned to ditch ticket stubs from most concerts (except my first, ninth grade, Deep Purple, 1972, Cloverleaf Speedway, Ohio) and pitch birthday cards (barring those from Mom and Dad, my sister, brother, husband, close friends, and aunts from Turkey). But I have to be the one doing it. Matt can vouch for that. He still can't understand why I got mad when he threw away the red spiral notebook I kept from my fellowship, the one with all my study notes for the boards. "They're twenty years old," he said. "You passed the boards. You'll never take them again. Why would you save them?" "I just do," was all I could say.

When this critter lays the foundation of his new home, he'll do it by eating up my memory bricks, one by one. I don't care if he devours Denise Bloxton with her big butt and Afro, wearing those red-and-bluestriped tube socks. She stole my patchwork suede purse in eighth grade. When I got it back, she had her name all curlicued on the side. He can chew through the part where I threw up in Andy Katz's car and on his shoes after drinking flaming shots of something orange-colored in college. He can take my fifth-, sixth-, and seventh-grade school pictures. In fact, I should request he take the lecture I gave at the American College of Gastroenterology in 2005—five thousand people, videotaped for a DVD, and I was immortalized with the worst haircut of my life. People asked me if I was doing okay, since it looked like I'd lost my hair to chemotherapy. Yup, take that one, but I don't want to lose the day I actually jumped and screamed with happiness when I got into medical school. That's the one that should have been taped. And don't bore through my birthday on Vancouver Island. I want to keep that first vacation with Matt. I don't want to forget how we found all the restaurants closed on Sunday night and had to celebrate with pretzels and 3.2% beer we found at a gas station. And please, please, make a detour around our hike to Inspiration Point and Hidden Falls. It's where we found spring flowers confettiing a mountainside that surrounded a lake so impossibly blue, it was like staring through a sapphire.

Maybe the bugger could be open to suggestions. I could propose he look at property in my frontal lobe. It's mostly silent, probably a good place to raise a little microbial family. But come to think of it, I do a lot of work there. Executive function mostly: impulse control, all my prioritizing and strategizing. With juggling my patients, managing my staff, running a center, and teaching residents, it's so much of what I do that my frontal lobe is probably twice the size of an average person's. I could give up 50% and not miss it. As for the impulsivity, well, I could use a little liberation. Doctoring took that out of me. Maybe I could give him

66 My nemesis was probably a pigeon. And given that he didn't bite me, it was probably his breakfast or leftovers from lunch that were about to infect me, but then again, what did I know about birds? All I knew came from Hitchcock, Heckle and Jeckle cartoons, and Ace Ventura: Pet Detective ... 🦻 🦻

a garage apartment and live with a little personality change. I would like to tell people exactly what I think sometimes, maybe even say no sometimes. My buddy, the parasite tenant, could help.

I may wonder about this for years, and even if I turn out okay, it could seriously ruin my marriage. If it weren't for Ace (hardware, not detective), I wouldn't have known how Matt would react if I got sick. Maybe this was his version of "better or worse" and I'd misjudged him? He does have lone-wolf tendencies. He's still perturbed I gave our number to his medical alumni association. "Now they'll know how to get hold of me," he'd snarled. He was a bit feral in the beginning, but I left food out, and little by little, I got to pet the creature, and eventually he stayed. But then, he'd probably say I got it all wrong. He'd offer he did the stalking and got exactly what he wanted. That wouldn't surprise me. We're opposites, but that's exactly what I like about him. And he makes me laugh. I'd miss that.

So who will write the obit, and who'll pick out what's on the tombstone? Matt hates that kind of stuff. I'll have to write it myself.

Gulchin A. Ergun, taken for granted, beloved wife and sister, gastroenterologist with a name no one can pronounce ... respected member of the medical staff died an ignoble death ...

Wait, I'm wasting my precious time. Matt and I still haven't decided where we should be buried. I know I bought those plots in Cleveland, but they were a great bargain. My sister bought six in a bankruptcy case, and it's where my parents are buried. All the kids took a pair. Where else can you buy prime plots in the best part of the cemetery with all the old trees? I thought if I died first, Matt wouldn't visit anyway. Graveyards aren't his thing. We don't have kids, so landing where my siblings lived seemed like a good idea. Then someone might visit. But what if this parasite is a slow grower and Matt goes first? He doesn't want to be buried in Cleveland. He's from Cincinnati. There are no direct flights. Visiting him wouldn't be easy. It would involve a layover in St. Louis or Chicago. This is where cremation starts making sense. Why limit the visits to a graveyard? Sift the spouse into a jar and take him with you. I know TSA limits you to three ounces of fluid on a plane, but are there restrictions on ashes?

Some say poop landing on your head is good luck, but I'm not given to superstition. My family's pretty pragmatic. We didn't throw salt over a shoulder or knock on wood. We may have had the blue charms against the evil eye, but everyone from Turkey has a nazar in the house. Mom said it wasn't about luck. She said life was about fate, and that fate was written on your forehead when you were born, we just couldn't

So that was it? My fate was checked by a bird blotch shaped like West Virginia?

That night in bed:

"What's wrong?"

"I'm mad at you."

"Why? I didn't do anything."

"That's the point. You didn't do anything."

"About what? Is this like when you wake up from some dream, and you're mad at me?"

"No. I was awake, but you didn't help me."

"You mean dinner?"

"No, I mean at Ace."

"That's what you're mad at? Because I didn't go to the bathroom with you?"

"No, because I was dying of a brain abscess and vou left me."

Guffaws.

"Don't laugh."

"I didn't leave you, and you don't get brain abscesses from pigeon poop. If anyone's going to get a brain abscess, it's me. I'm the one who got bitten by the tsetse fly in Africa. Remember that? Next to the Mara River. There's no vaccine for that. I have to worry about trypanosomiasis for the rest of my life. And what did you say about it? 'No Matt, it's not a bite. It's a zit.' Boy, were you wrong."

Then, the wrap of his arm. "So what do I need

"Kiss it. I'll forgive you if you kiss my eye." And he is obedient. "And, I might have been a little bit wrong. If I'm not blind or paralyzed, I'll take care of you when you get sleeping sickness."

Then he whispers in my ear, "Promise me something."

"Anything. No feeding tube, no nursing home? Just

"Stop talking. You think too much. Now come here, my little s*&t head."

Gulchin A. Ergun, M.D., is a gastroenterologist and the medical director of the Reflux Center & Digestive



Disease Department at Houston Methodist Hospital. She is also clinical associate professor of medicine at Houston Methodist and Weill Cornell Medical College. This essay first appeared in Jet Fuel Review.

Credit: Courtesy photo

Holding Pattern

Volunteers at Texas Children's Pavilion for Women cuddle tiny patients in the NICU

By Shanley Chien

As heart and respiratory monitors beep around her, Teri Walker paces the floor of the level 4 neonatal intensive care unit at Texas Children's Pavilion for Women.

She's listening for agitated cries from the babies. When one begins to fuss, she picks him up and cradles him in her arms, carefully maneuvering around the slack cables and tubes attached to his tiny body. Smiling warmly, she begins to rock him from side to side, whispering lines from songs and nursery rhymes she knows from her 25 years as a kindergarten teacher.

"Twinkle, twinkle, little star. How I wonder what you are," Walker sings softly, gazing into the baby's eyes.

Walker, who retired four years ago, spends three hours in this NICU

every Tuesday and Thursday as part of the Texas Children's Baby Holding Program, a popular program with an extensive waiting list. As one of the 89 volunteer baby holders, she plays a critical role in the babies' development by providing one of the most basic human experiences.

"It just seemed like that was the gift I was given—to be with children," Walker, 52, said. "I'm a part of their healing."

Children's Memorial Hermann Hospital and The Woman's Hospital of Texas are among area institutions that offer similar volunteer programs.

Cuddling NICU babies is an important nonpharmacological therapy that has been shown to ease their pain and decrease their length of hospital stay.

"It's really vital because their

66 It's really important to keep those babies calm so that their little hearts don't have to work so hard. ??

— JILL KONIECZNY Child life specialist in the Texas Children's NICU

circulatory systems and their ability to breathe can easily be compromised if they're stressed or crying a lot," said Jill Konieczny, child life specialist in the Texas Children's NICU. "It's really important to keep those babies calm so that their little hearts don't have to work so hard."

Babies are transferred to the NICU for a variety of conditions. Some are born prematurely, while others are treated for infections, physical anomalies, feeding issues, breathing problems

and other issues, such as neonatal abstinence syndrome. But regardless of their diagnoses, cuddling helps stabilize vital signs, lower heart rates, reduce chronic lung problems and promote better feeding.

In addition to physical benefits, cuddling also improves cognitive and behavioral development in babies.

"That baby experiences different treatments, assessments and procedures throughout that day, so to provide that positive touch—that cuddle experience—really helps the psychosocial development as they learn to connect with the people around them, learn to feel safe and trust their environment," Konieczny said. "It plays a huge role in their ability to form healthy attachments along the way."

Volunteers are trained by child life specialists, who teach the proper ways to hold a baby, the benefits of holding, how to soothe a baby, the infection control process, and more.

Because the transition from the bed to being held can be anxiety-provoking for some babies, volunteers are encouraged to allow at least 30 minutes for babies to calm and settle before returning them to their cribs. It can take anywhere from half an hour to two hours of cuddling, rocking and singing to soothe a baby.

"It really is a labor of love,"
Konieczny said. "We definitely have babies who, no matter what you do, what you try, how you position them, they're just not having a good day and may not be consolable."



 $Teri\ Walker, a\ volunteer\ baby\ cuddler\ at\ Texas\ Children's\ Pavilion\ for\ Women,\ rocks\ Kace\ Patrick\ in\ the\ neonatal\ intensive\ care\ unit.$



Kace Patrick, who was born Dec. 2, has spent more than four months in the NICU at Texas Children's Pavilion for Women

When babies are inconsolable, Konieczny said the best thing to do is put them back in their cribs and let the nurse assess if there's an underlying issue that's causing the agitation or if medication needs to be adjusted.

While the volunteers provide a nurturing experience for the infants, their presence in the NICU helps the families who are separated from their babies, as well, said Texas Children's neonatologist George Thomas Mandy, M.D. Because parents may not be able to spend the whole day with their babies in the NICU, volunteers can provide comfort and gentle touch in their absence.

"If somebody just gets transferred to the Texas Children's NICU from out of state, for example, then the parents may have difficulties being with the baby," Mandy said. "That's where the volunteer group comes in and provides support by holding these babies and

facilitating the babies' development for them. This is very important."

Volunteers in the cuddle program know that nurturing and affection can help get the babies home sooner.

"There are some who have been there for a long time, and then you're just so grateful that they're well enough to finally go home," Walker said. "Hopefully, I've made a difference."

We definitely have babies who, no matter what you do, what you try, how you position them, they're just not having a good day and may not be consolable.

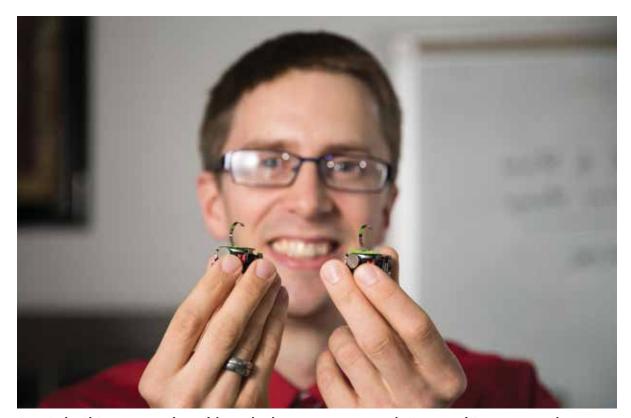
- JILL KONIECZNY



Small Robots, Big Jobs

Researchers hope to harness MRI technology for noninvasive treatments

By Christine Hall



Aaron Becker, Ph.D., assistant professor of electrical and computer engineering at the University of Houston, is currently $testing\ robots\ of\ various\ sizes\ to\ see\ how\ they\ move\ around\ the\ body\ using\ MRI\ scanners.\ Credit:\ Carlos\ Landa,\ UH\ Cullen\ College$ of Engineering

ver the years, surgeries have shifted from invasive to minimally invasive—from cutting through the breastbone to get to the heart to inserting catheters in the leg and snaking them up the torso to gain access to the heart.

But Aaron Becker, Ph.D., who hopes to deploy millimeter-sized robots in the body's venous system to deliver drugs or break up harmful masses and growths, thinks surgeries could go even smaller.

"Ideally, we want to shrink down the surgery," said Becker, assistant professor of electrical and computer engineering at the University of Houston. "Essentially, we are making a probe, but without the tether."

Becker and a team that includes Nikolaos Tsekos, Ph.D., associate professor of computer science and director of the Medical Robotics Laboratory at UH, and Dipan J. Shah, M.D., a cardiologist and director of cardiovascular MRI at Houston Methodist Hospital, are developing control algorithms,

imaging technology, ultrafast computational methods and human-machine immersion methods by harnessing the force from a magnetic resonance imaging

The big idea is to use MRI, traditionally employed for noninvasive diagnosis, for noninvasive treatment. Becker is principal investigator for a \$608,000 Synergy Award from the National Science Foundation (NSF) to develop robot prototypes.

The current models measure as much as two centimeters, but Becker said the goal is to design robots that range from 0.5 millimeters to two millimeters. As a point of comparison, the average human hair is about 0.08 millimeters wide.

"MRI is a wonderful methodology that gives you sight of soft tissue," he said. "We can use the MRI to do two things at once: Steer the robot through blood vessels in real time without penetrating tumors or other tissue, and see deep into the tissue."

One example Becker likes to use is a cyst in the ventricular system inside the brain. A cyst in that location can block the flow of cerebral spinal fluid, which helps circulate chemicals and nutrients filtered from the brain, cushions the brain inside the skull and removes waste from the brain. Some of the robots. which look like small capsules, are outfitted with a self-assembling surgical tool, like a Gauss gun. Using the MRI, one robot with the tool can be steered up to the cyst, and then another robot can be pushed into the first one to break up the cyst.

"If we can get the first one into the right spot, we can steer the others toward there," he said. "We are working on the miniaturization process through the NSF. We have some fun designs that will be neutrally buoyant [they don't sink or float in the liquid] to move through the body's fluids."

Up next for the researchers is improving MRIs. Current scans have a lag time that doesn't allow for real-time control of the tiny robots. Becker and his team hope to speed up the scan time to a matter of milliseconds.

Ultimately, the goal is to steer multiple miniature robots through the body at the same time. One robot could target a single lesion, while another could deliver chemotherapy or another type of intervention during late-stage cancer, Becker said.

"Targeting delivery with dozens of microsurgeons is my goal," he said.



Dipan J. Shah, M.D., a cardiologist at Houston Methodist Hospital, is developing the MRI technology on the project.

HOW TMC EMPLOYEES SPEND THEIR SPARE TIME



NAME: Steven Powell, RN

occupation: Registered nurse at Michael E. DeBakey VA Medical Center

.....

INTEREST: DJ/Music

By day, Steven Powell works as a registered medicalsurgical nurse at the Michael E. DeBakey VA Medical Center, where he treats veterans suffering from spinal cord injuries.

By night, he's DJ Nursic a portmanteau of nursing and music, his two loves—at KTRU Rice Radio 96.1 FM. His live show, "The Revelry Report," airs Tuesdays from 5 p.m. to 7 p.m.

On a recent Tuesday, Powell, 29, finished his shift at the hospital at 4:30 p.m. and raced to the Rice University radio station, still wearing his scrubs and stethoscope. It's a cramped space. Every inch of wall space is stacked with vinyl records and CDs, and most surface areas

are covered with KTRU stickers and decals. Powell often wears his long hair up in a bun at the hospital, but when he's on the air, he lets it down, whipping it back and forth to the rhythm of the eclectic mix of indie rock and rap blasting in the studio.

"From an early age, I knew I wanted to do something in music," he said. "I just didn't know what or necessarily how to get into the music industry."

Powell grew up in 10 different cities on four continents—including Buenos Aires and Mendoza, Argentina; Moscow, Russia; Kuala Lumpur, Malaysia; and Doha, Qatar—thanks to his father's job with Occidental Petroleum Corporation.

Eventually, the family settled in Houston, where Powell finished middle school and high school.

But no matter where he lived, he always carried with him a passion for music.

"My mother was one of those people who didn't try to force anything on me, neither did my dad," Powell said. "My mom signed me up for a bunch of different classes, everything from tennis to martial arts. Out of all the different lessons she signed me up for, the one that I had the most enjoyment with was piano, so I continued to do music through the piano. That evolved into ... learning the saxophone."

Powell also picked up an interest in percussion and joined the drumline at the start of high school. After his senior year, he signed a contract with global nonprofit Drum Corps International, which allowed him to compete and tour throughout the country before starting college.

Powell attended Tulane University in New Orleans, starting in fall 2006. His reasons for choosing Tulane were two-fold: First, music is deeply rooted in the city's culture and, second, he would be part of the first class accepted after Hurricane Katrina.

"New Orleans just had that devastation, so I was curious how the city would rebuild itself and I wanted to be a part of that rebuilding process," he said.

During his freshman year, Powell volunteered with relief efforts and helped rebuild houses in New Orleans' Musicians' Village in the Upper Ninth Ward.

Throughout college, he stuck close to music, DJ-ing for Tulane's radio station, interviewing hundreds of local and national musicians for his radio show, and playing a major role in the Tulane University Campus Programming group, which booked and produced concerts featuring artists including Ludacris, Lil Wayne and Third Eye Blind. (continued)

BY SHANLEY CHIEN



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#TMCxDemoDay

ON THE SIDE (CONTINUED)

Powell worked as a college marketing representative for Sony Music in 2008, promoting record releases and upcoming concerts for alternative rock artists. That same year, the Recording Industry Association of America awarded him and his team with a personalized Gold Record for their contributions to promoting MGMT's 2008 album *Oracular* Spectacular, which sold half a million copies in the U.S. and 1.5 million singles worldwide.

But Powell began to fall out of love with the music business. In addition to his work with Sony, he was juggling four other music-related jobs throughout the school year and it was quickly burning him out.

"It was fun for the first year or two, but afterwards, it felt like work," Powell said. "I wasn't enjoying it anymore."

After graduating from Tulane with a degree in communications, he moved back in with his parents in Houston to reevaluate his life. He realized he always had a dormant passion for health care, but never fully pursued it because he was set

on a career in music.

Powell enrolled in an anatomy and physiology course at Houston Community College "just to see" how it would go, he said. To his surprise, he ended up enjoying the course and excelled in it, cementing his desire to pursue medicine, specifically as a nurse.

"I focused on nursing because nurses are the ones who spend the most time with the patients," Powell said. "I'm very much a people person."

In May 2014, he graduated from Oklahoma City University's nursing program and went to work at the VA Medical Center to honor his grandfather, who served as a Marine for four decades—from the Korean War through the Gulf War.

"As a nurse at the VA, I'm trying to provide the highest care possible for the veterans," Powell said. "The veteran population is very unique and there's a certain pleasure in knowing that I'm serving someone who served in the military. I'm giving back."



Steven Powell, RN, at KTRU Rice Radio 96.1 FM.

The Little Things

Encore Hair Design & Boutique offers a different angle on patient care

By Alexandra Becker



Stylists at Encore Hair Design & Boutique work with Houston Methodist patient Suzi Hayes.

Suzi Hayes sighed as she tilted her head into the shiny black basin and a rush of warm water flowed through her hair. A pair of hands massaged her scalp, puffs of sweet-smelling foam rising up amid the clatter of the salon. In two days Hayes would turn 67, and she wanted a fresh shampoo and blow-dry for the occasion.

Out of context, the scene would be commonplace—a proud Houstonian committed to her presentation. But Hayes is currently hospitalized at Houston Methodist, undergoing inpatient dialysis treatments. Just 10 minutes earlier, she had been wheeled through sterile halls to the adjoining Scurlock Tower, where husband-and-wife team Fred and Connie Kromer have been running a full-service salon for nearly four decades.

Encore Hair Design & Boutique mirrors most salons, with posters of perfectly coiffed hair on the walls, magazines fanned on tables, and side-by-side stations stocked with styling tools and hair products. But between its storied history and patient-specific offerings, the salon has become a hub for a very specific type of care at the Texas Medical Center.

"For years, physicians, patients and patient relatives have expressed how grateful they are for our compassionate service," Connie Kromer said. "We not only enjoy our work with gratitude, but feel we are also doing missionary work at the same time."

The Kromers first started their venture in 1959 at the historic Warwick Hotel (now Hotel ZaZa), then moved to Park Plaza Professional Building before Scurlock Tower wrapped construction in 1981. By that time, they had already begun to see some patients, but the couple—said to be the first in Texas to offer services to both men and women in the same salon—knew the move to Methodist would be a chance to expand their patient clientele and grow their expertise.

The salon, designed to meet their clients' specialized needs, offers a private area for patients wearing hospital gowns or for those whose cultural or religious standards demand a certain level of concealment.

Encore provides a range of services, from haircuts and



Hayes gets her hair washed at the boutique.

highlights to facials, waxing, electrolysis and manicures. The boutique portion sells trendy accessories and clothing sets—antidotes to colorless hospital gowns and peeling IV tape—as well as wigs, turbans and other treatment-specific merchandise.

"A lot of people take for granted the little things of everyday life," said Perla Diaz, a stylist at Encore. "When you go and see a patient and give a woman a nice shampoo, and for her to say, 'This really made me feel great,'—that's a great feeling."

The salon's customer base extends beyond patients and their families. Sought-after surgeons stop by for haircuts, hospital staff schedule pedicures after especially long shifts, and Rice University students enjoy discounts and the convenient location. Like most hairdressers, the stylists are privy to secrets; they dish out advice and offer comfort to a wide array of individuals, from international patients to Methodists' most famous clientele—the Bush family included. Between them they know five languages and are as dedicated to the patient care aspect of their roles as they are to their craft.

Perhaps the most unique service offered by the salon is in-room care. For patients who are unable to travel to Scurlock Tower, the stylists wheel a suitcase full of tools to inpatient rooms in Houston Methodist and other hospitals in the TMC. Using a special bowl, they shampoo patients who are unable to get out of bed, including those in the ICU, working around machines and wires, even tracheostomy tubes. Often, the stylists find themselves rinsing out blood from surgery or working around fresh scars. They have become experts in styling hair that is falling out from chemotherapy treatments.

"Have you ever not been able to wash yourself and feel human again?" asked stylist Lexi Ebers. "It's a big deal. People will cry because you shampoo their hair. It feels so good they cry."

Stress management techniques—including keeping up with hygiene or a little pampering—are crucial to good health, and even more so when someone is recovering from surgery or a hospitalization. Physicians are instructed to take note of individuals who have stopped bathing as a sign of major depression, and those who do maintain a certain level of self-care often seem to have an easier recovery.

The benefits are so apparent to the stylists that they insist their services should be part of the standard of care. It's rewarding in return, too. Salon employees are so dedicated to Encore's mission that most have been there for at least a decade, many beginning as receptionists and then pursing cosmetology school after watching their co-workers in action.

"It's wonderful that you can come over here and be made to feel like you're not sick anymore," said Suzi Hayes, as she examined her freshly styled hair in the mirror. "Just because you're in the hospital doesn't mean you can't look good."

Encore Hair Design & Boutique is located in Scurlock Tower, 6560 Fannin. Suite 210. Information: 713-795-0100.

[1] JANE C. EDMOND, M.D., pediatric ophthalmologist at Texas Children's Hospital, will serve as president of the American Association of Pediatric Ophthalmology and Strabismus in 2020.*

[2] MATTHEW ELLIS, M.D., PH.D., McNair Scholar and director of the Lester and Sue Smith Breast Center at Baylor College of Medicine, received the 2017 Impact Award from the National Consortium of Breast Centers.*

[3] EVAN KATZ and MARC BOOM, M.D., president and CEO of Houston Methodist Hospital, at a ceremony marking a \$21 million gift from the Jerold B. Katz Foundation to support translational research.*

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[4] Memorial Hermann Health System oncology nurses CAROLYN ALLSEN, B.S.N., RN, JESSICA BURGESS, B.S.N., RN, SYLVIA BROWN, M.S.N., RN and DEIDRA TEOH, M.S.N., RN, are Houston's first nurses to be certified by the Academy of Oncology Nurse & Patient Navigators.*

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[5] As part of Donate Life Month, HOUSTON **CITY HALL** was lit to bring awareness to LIFEGIFT, a nonprofit that helps individuals needing transplants in Southeast, North and West Texas. (Credit: Troy Fields)

[6] CHEF JON BUCHANAN of Third Coast $restaurant\ visits\ with\ fourth\ graders\ from$ MacGregor Elementary as part of the **RECIPE** FOR SUCCESS program, which combats childhood obesity.

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[7] JOSEPH JANKOVIC, M.D., neurology professor and director of the Parkinson's Disease Center and Movement Disorders Clinic at Baylor, earned a Lifetime Achievement Award from the Texas Neurological Society.*

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[8] REV. DR. GALE KENNEBREW, D.MIN.,

director of spiritual care and education at The University of Texas MD Anderson Cancer Center, was honored with a Magnificent Seven Award by nonprofit Prayers of the People. *

[9] DIMITRIOS P. KONTOYIANNIS, M.D., PH.D. (HON), professor and deputy head-research, Division of Internal Medicine at MD Anderson, was elected to Fellowship in the American Academy of Microbiology for 2017.*

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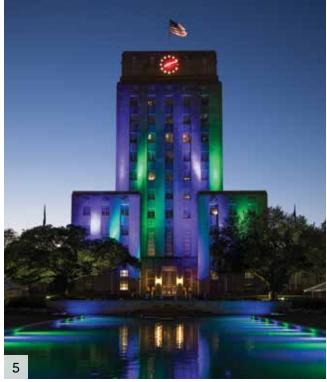
[10] WESLEY LEE, M.D., co-director of Texas Children's Fetal Center at Texas Children's Pavilion for Women, was recognized by the American Institute of Ultrasound in Medicine with the Presidential Recognition Award.*





















*Credit: Courtesy photo



THOMAS

[11] NORA'S HOME, which provides a home away from home for transplant patients and their families, held "Yoga on the Meadow" to kick off Donate Life Month. (Credit: Kimberly Cooper / User of Reality)

[12] PERITECT, a company that designed a device to drain fluid from the sac around the heart, answered questions from judges at the second annual TMC BIODESIGN HACKATHON. Peritect earned first place and \$2,000 for their design. (Credit: Gary Fountain)

[13] Female surgeons from MD ANDERSON pose in an operating room, mimicking a recent cover of The New Yorker magazine. (Credit: Meagan Raeke, MD Anderson)

[14] PATRICK C. McCULLOCH, M.D., who leads the research team at Houston Methodist Orthopedics & Sports Medicine, has been appointed to the John S. Dunn Chair in Orthopedic Surgery at Houston Methodist.*

[15] LAURA A. PETERSON, M.D., M.P.H., professor of Medicine-Health Services Research at Baylor, was honored with a Magnificent Seven Award by nonprofit Prayers of the People.*

.....

[16] Attending the annual Diabetic Foot Global Conference, presented by Baylor and the Texas Heart Institute, were conference co-chairs $\overline{\text{DAVID}}$ G. ARMSTRONG, M.D., PH.D., of the University of Arizona, and JOSEPH L. MILLS, M.D., professor and chief of the division of vascular surgery and endovascular therapy at Baylor, along with GEORGE ANDROS, M.D., conference founder and this year's recipient of the Edward James Olmos Award for Advocacy in Amputation Prevention, and EDWARD JAMES OLMOS, actor and director.*

[17] DR. HERBERT EDMUNDSON, chair of the University of St. Thomas Board of Directors; MICHELE MALLOY, past chair of the UST Board of Directors; ROBERT IVANY, PH.D., UST president; and **DAVID HARVEY**, chair of the UST Faith in Our Future Campaign, at a ceremony for UST's new Center for Science and Health Professions.*

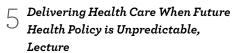
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May 2017

/ James T. Willerson, M.D., Cardiovascular Seminar: "Examining the Role of the Gut Microbiota in Hypertension," with David J. Durgan, Ph.D.

Thursday, 4 p.m.
Texas Heart Institute
Denton A. Cooley Auditorium
6770 Bertner Ave.

vsweed@texasheart.org 832-355-9144



Friday, 8 a.m.
Rice University, James A. Baker Hall
6100 Main St.
bakerchb@rice.edu

Giving Back to the Future
Nora's Home Gala

713-348-2735

Friday, 7 p.m. Royal Sonesta Hotel Houston 2222 West Loop South

Tickets start at \$500 www.norashome.org gala@norashome.org 832-831-3721

Fireside Chat with Medical Device
Leaders from Johnson & Johnson
Innovation

Tuesday, 3:30 – 5:30 p.m. JLABS @ TMC 2450 Holcombe Blvd., Suite J

Tickets are free; registration appreciated eventbrite.com rlongley@its.jnj.com 346-772-0302

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An aerial view of American Heart Association's 2016 Go Red for Women Luncheon.

Go Red for Women Luncheon
American Heart Association

Friday, 10:30 a.m. – 2 p.m. Hilton Houston Post Oak 2001 Post Oak Blvd.

Tickets start at \$500 houstongored.heart.org leslie.robinett@heart.org 832-918-4020

16 Evenings with Genetics: Coffin-Siris
Syndrome—A Common, Yet Unknown
Genetic Condition, Seminar

Tuesday, 7 – 8:15 p.m. Children's Museum of Houston 1500 Binz St.

Free: registration required bcm.edu/eveninggenetics geneticsevenings@bcm.edu 832-822-4280

An Evening with a Legend Honoring Michael Phelps

Tuesday, 6:30 – 9:30 p.m. Hilton Americas – Houston 1600 Lamar St.

Tickets start at \$500 legends@texaschildrens.org 832-824-6917 1 🦳 MITIE Town Hall Meeting

Wednesday, 5 – 6:30 p.m. Houston Methodist Research Institute John F. Bookout Auditorium 6670 Bertner Ave.

mitieevents@houstonmethodist.org 713.441.7912

| | Health Policy Prescription Symposium

Friday, 8 a.m. – 3 p.m.
Baylor College of Medicine
McNair Campus
7200 Cambridge
Registration required; fees start at \$50

marshep@bcm.edu 713-873-7336

MD Anderson School of Health
Professions Open House

Monday, 10 a.m. – 2 p.m. MD Anderson Cancer Center 1515 Holcombe Blvd. nkdo@mdanderson.org 713-745-5115



MAY: MENTAL HEALTH

Since 1949, May has been recognized as Mental Health Month in the United States. Not to be confused with mental illness, mental health is a state of well-being in which the individual realizes his or her own abilities, copes with the normal stresses of life, works productively and fruitfully, and is able to make a contribution to his or her community, according to the Centers for Disease Control and Prevention (CDC).

An estimated one in five Americans will be affected by a mental health condition in their lifetime. The CDC estimates that only 17 percent of the adult population in the United States is in an optimal state of mental health.







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