

FALL '15 / WINTER '16

# Mission

## Healing Touch

Holding babies close leads moms  
off the crooked path

# Mission

FALL '15 / WINTER '16 | Vol. 41, No. 2

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COVER PHOTO BY JOEL SPRING



Fourth-year dentistry student Peggah Hammat examines Nar Kami, from Bhutan, at the Refugee Health Clinic.

PHOTO BY JOEL SPRING



## We are fighting back.

Together, we are now on the offensive in the battle against Alzheimer's disease.

Unrelenting and cruel, this disease robs so many of a most precious gift, our memories.

One in nine of us over age 65 will develop Alzheimer's disease. Every one of us will be touched by this disorder in some way, whether by affected friends or family members.

We are determined to fight back against the specter of Alzheimer's disease, and we are not alone in this quest. We are joined by scores of supporters who have given to this cause. In record time, less than two years, we have collected more than \$41 million to create this region's first Institute for Alzheimer and Neurodegenerative Diseases that will open this year (see story, Page 33).

This will be a comprehensive care center that will feature expert diagnostics, physicians who are at the top of their fields, support programs for the countless caregivers desperate for relief and hope, and access to clinical trials of new therapies.

It was nearly two years ago when Glenn Biggs, an iconic San Antonio business leader and close friend and mentor to all four presidents of the Health Science Center, came to me seeking guidance on where to go and what to do for his rapidly advancing condition. He was the one in nine.

We could not point him to a comprehensive care center in this region. Nor could we even assure him that interventions were available that could make a difference. That very day, we pledged to fight back.

We have kept our promise to Glenn, even though he is not alive today to see the work he inspired. We will create this new institute in honor of him and for the millions who have lost their memories, and their lives, to this illness.

*William L. Henrich, M.D.*

William L. Henrich, M.D., MACP  
President and Professor of Medicine  
UT Health Science Center at San Antonio

## UT Dentistry has new home

Its technology is considered ultra-modern. It is energy efficient. And within its 198,000 square feet, patients will receive the latest evidence-based care in a dozen specialties, and can be treated with anything from braces and dental implants to crowns and root canals.

At a total cost of \$96.5 million, the Center for Oral Health Care & Research officially opened its doors in September. Located at 8210 Floyd Curl, it sits across from the Medical Arts & Research Center and features 12 specialty clinics and 400 pre-doctoral and specialty operatories.

There is a dental surgery operating room and overnight recovery area built to hospital specifications, and extra-large monitors are prominent in all exam and surgical areas to offer patients and practitioners a better view of dental images. Dental chairs offer digital lighting and the most current examination equipment.

"The new Center for Oral Health Care & Research allows our faculty, residents and students to provide care in a technologically advanced setting that is second to none," said William L. Henrich, M.D., MACP, president of the Health Science Center. "It enables our School of Dentistry to lead the way technologically and sustain our top-tier reputation in education, research and patient care."

The first two floors are for faculty-led care of patients in various specialties of oral health. The third and fourth floors are used for general dentistry, including clinical training for third- and fourth-year dental and dental hygiene students who provide care to the public at a reduced rate.

School of Dentistry Dean William Dodge, D.D.S., said the new facility helps UT Dentistry fulfill its unique role as the academic dental practice for South Texas.

"This beautiful, energy efficient and technologically advanced clinic is only our second clinical home since the school began in 1970," Dr. Dodge said. "What a step up."



# Waist not

## Diet sodas linked to waist gain



You could search all day in Sharon Fowler's kitchen and pantry and there's one thing you'd never, ever find: diet soda.

"Absolutely not," said Fowler, M.P.H., adjunct faculty in the School of Medicine at the Health Science Center.

Fowler was the lead author of a paper published in the *Journal of the American Geriatrics Society* that described how consuming diet sodas was linked to subsequent increases in waist size among people 65 and older: The more diet sodas they drank, the more their waist size grew over the next decade. Data for the study came from the San Antonio Longitudinal Study of Aging (SALSA), led by Helen P. Hazuda, Ph.D., senior author and professor of medicine at the Health Science Center. Ken Williams, M.S., P.Stat., adjunct faculty in the School of Medicine, co-authored the paper and performed all analyses reported in it.

"There's a heated debate about whether this is a causal relationship," Fowler said. "It's my personal opinion that it is."

One of the explanations is that the artificial sweeteners themselves affect the metabolism, Fowler explained. If a person tastes something sweet, it's not just the brain that absorbs the information; so do other parts of the body. When the body registers sweetness, it ramps up to deal with sugar. But if there isn't real sugar present, the body doesn't know how to handle it.

"It's kind of like crying wolf," she said, and can lead to metabolic dysregulation.

To make matters worse, Fowler said, one of the most dangerous places you can gain weight is your middle, because increasing waist size is linked to increasing visceral fat and an increase in inflammation, which is tied to the increased risk of arthritis, diabetes, cancer, heart attack, Alzheimer's disease

and other major medical problems.

What's next for Fowler? She's currently pursuing her doctorate in epidemiology and plans to continue her research on artificial sweeteners.

"What I am most concerned about is when women are pregnant and they're using diet sodas, or consuming artificial sweeteners in other ways," she said. "What is happening to their unborn child? There are a number of people who have reported neurological problems when they themselves have taken certain artificial sweeteners—brain fog, memory loss. I want to look at whether the unborn child is at increased risk of developing neurological problems when the mother has been exposed to artificial sweeteners. To me, that would be infinitely worse than gaining or losing a few pounds."

# Evidence links lymphomas to flawed metabolism

School of Medicine researchers have found a direct link between disrupted metabolism and a common and often fatal type of lymphoma.

“The link between metabolism and cancer has been proposed or inferred to exist for a long time, but what is more scarce is evidence for a direct connection—genetic mutations in metabolic enzymes,” said senior author Ricardo C.T. Aguiar, M.D., Ph.D. He is an associate professor of hematology-oncology and a faculty scientist with the Cancer Therapy & Research Center and the South Texas Veterans Health Care System, Audie L. Murphy Division. “We have discovered a metabolic imbalance that is oncogenic or pro-cancer.”

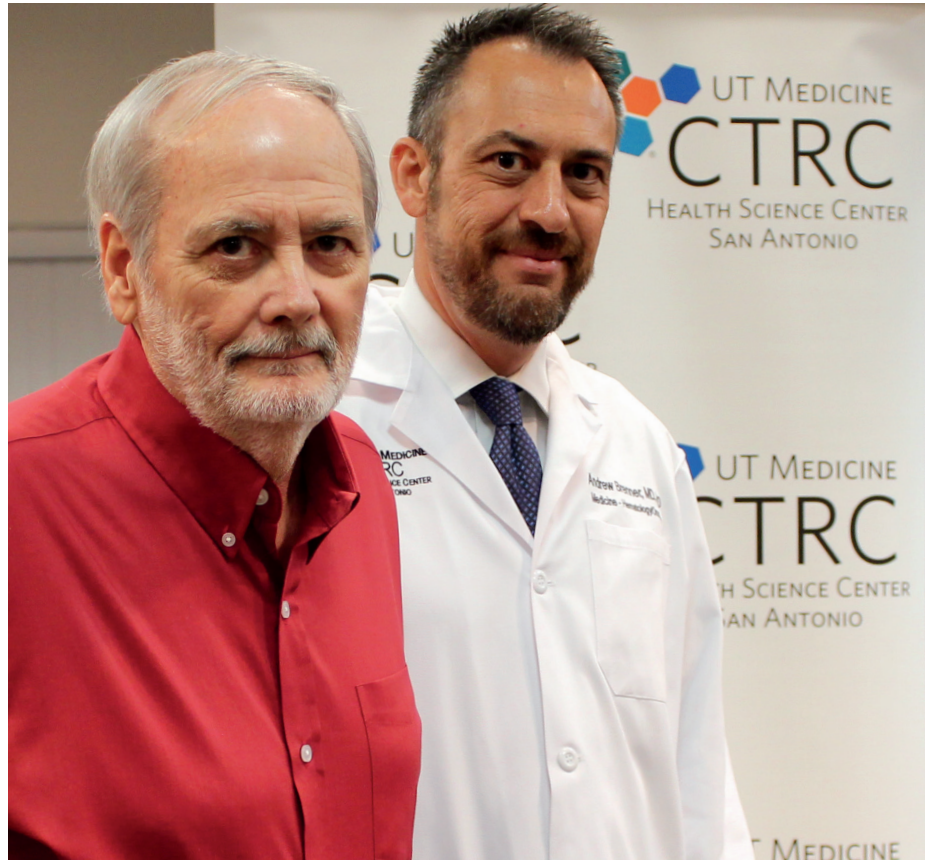
The team, which included members of the departments of medicine and biochemistry, investigators from the UT Southwestern Medical Center at Dallas and a group of collaborators from Austria, found that the gene that codes the enzyme D2-hydroxyglutarate dehydrogenase (D2HGDH) is mutated in a subset of cancers called diffuse large B-cell lymphomas. The mutated lymphoma cell displays a deficiency of a metabolite called alpha-ketoglutarate ( $\alpha$ -KG), which is needed in steady levels for cells to be healthy.

“When the levels of  $\alpha$ -KG are abnormally low, another class of enzymes called dioxygenases don’t function properly, resulting in a host of additional disturbances,” Dr. Aguiar said.

The metabolite has been recently identified as a critical regulator of aging and stem cell maintenance, he said.

“The implications of our findings are broad and not limited to cancer biology,” he said.

The finding was announced in *Nature Communications*.



James Burrows (left), a glioblastoma patient of CTRC medical oncologist Andrew J. Brenner, M.D., Ph.D., (right) has benefited from experimental gene therapy.

## Survival doubled

An experimental gene therapy nearly doubled the overall survival of patients with a recurrence of one of the deadliest and most aggressive brain cancers, glioblastoma.

Glioblastoma kills two-thirds of patients within five years; a patient’s outlook with recurrence of the disease is considered to be weeks or months.

A Phase 2 clinical research study evaluated the gene therapy, called VB-111, in continuous and intermittent doses and in comparison to the standard treatment, the chemotherapy Avastin. Patients receiving VB-111 survived 15 months on average, compared to an average of eight months for patients receiving Avastin alone.

“In addition to the benefit in overall survival, VB-111 was safe and well-tolerated in the patients, and proved to be effective both as a single therapy for recurrent glioblastoma and in combination with Avastin,” said Andrew J. Brenner, M.D., Ph.D., a medical

oncologist with the Cancer Therapy & Research Center and associate professor in medicine, neurology and neurosurgery.

The CTRC and three other centers enrolled 62 patients with recurrent glioblastoma for the studies.

The gene therapy effectively starves the tumor by blocking its ability to grow new blood vessels, said Dr. Brenner, principal investigator of the studies. Tumors themselves begin the process by secreting a factor that activates the VB-111 drug.

“This drug outsmarts the cancer,” he said.

The drug is administered intravenously once every two months. The most frequent side effect in the study was fever, lasting one to two days following the infusion.

This suggests an immune system response to the drug, which may play a role in its effectiveness, Dr. Brenner said.

## Advanced degree now offered in respiratory care

Millions of Americans suffer from cardiopulmonary disease and need specialized care from a respiratory therapist.

The Health Science Center is meeting the need with a new master of science degree in respiratory care. The two-year program began this fall and is open to current respiratory therapists and students with no prior health care experience.

“More than 34 million people have asthma in the United States, approximately 13 million suffer from chronic obstructive pulmonary disease, or COPD, which is the third leading cause of death in America,” said David C. Shelledy, Ph.D., RRT, FAARC, dean of the School of Health Professions. “Because of underdiagnosis, we believe the actual number of those suffering from COPD is closer to 24 million.”

Respiratory care, also known as respiratory therapy, is the allied health profession that provides care to patients with cardiopulmonary disease. A respiratory therapist cares for patients of various ages, from newborns to the elderly. Common illnesses include asthma, emphysema, COPD, pneumonia, cystic fibrosis and respiratory distress syndrome.



**A two-year master of science degree in respiratory care is open to respiratory therapists and students with no prior health care experience.**

The new degree was created because of the complexity of the care needed by these patients, Dr. Shelledy said.

“The master’s degree will prepare individuals to provide specialized care and to serve as the clinical leaders in the

field, especially in the acute care setting in intensive care units,” he said.

It will be only one of four such degrees in the country.

## Quitting smoking? We’ll text you.



All it takes is a simple text, “iquit,” to kick the habit.

Quitxt, a free text message and online support service, helps people beat smoking by sending them interactive messages, real-time support, hip-hop music, videos and other educational content. It is designed to help with motivation to quit, setting a quit date, handling stress and more.

The service is geared toward Latino young adults in South Texas. It was launched Oct. 13 by the Health Science Center with \$1.4 million from the Cancer Prevention and Research Institute of Texas and the endorsement of the San Antonio Scorpions soccer team, SA2020 and other businesses and health groups.

“We developed Quitxt specifically for young adult Latino smokers to capitalize on their heavy usage of texting to help them quit,” said Amelie G. Ramirez, Dr.P.H., study

leader and director of the Health Science Center’s Institute for Health Promotion Research. Her team worked with text message system expert David Akopian, Ph.D., from The University of Texas at San Antonio, to create the service.

Tobacco kills about 3,000 people in South Texas every year. Smoking rates are especially high among Mexican-Americans along the border and across South Texas, heightening the risk of cancer and heart disease.

Text message applications, as well as telephone and online counseling, have been shown to roughly double successful quit rates among smokers, with more impact in younger age groups.

Quitxt accepts smokers aged 18 and older. To join, text “iquit” to 57682.





## By a thread

While silkworms have long been known to produce silk for fabric, researchers have discovered they also produce the perfect framework to grow stem cells into salivary gland cells.

This finding could play a critical role in providing relief for millions of people with dry mouth, a devastating oral and systemic health concern.

A research team led by Chih-Ko Yeh, B.D.S., Ph.D., a professor in the Department of Comprehensive Dentistry, is the first to use the fibers for stem cell growth. The process has been submitted for a patent.

“Salivary gland stem cells are some of the most difficult cells to grow in culture and retain their function,” Dr. Yeh said. “Until now, retention of salivary gland cell properties has not been possible using other tissue culture techniques. This unique culture system has great potential for future salivary gland research and for the development of new cell-based therapeutics.”

Saliva is critical to good health. It helps with speaking, swallowing, washing food off teeth, initial food digestion and preventing oral infections. Insufficient saliva can cause chronic bad breath, cavities, gum disease, as well as systemic infections.

There is no treatment for low-producing or nonfunctioning salivary glands, and the glands have little regenerative capability.

Silk is a good choice for stem cell scaffolding because it is natural, biodegradable, flexible and porous, providing the developing cells easy access to oxygen and nutrition. It also does not cause inflammation, as other scaffold materials have.

This is the first major step toward helping the more than 4 million people in the U.S. who have Sjögren’s syndrome, a degenerative autoimmune disease in which the body attacks its own tear ducts and salivary glands. Low saliva production also affects thousands of patients who have had radiation treatment for head and neck cancer, as well as about 50 percent of older Americans whose medications can cause dry mouth, also known as xerostomia.

Dr. Yeh hopes that within the next decade stem cells can be transfused into damaged human salivary glands to jump-start tissue repair or can be engineered into artificial salivary gland tissue to replace damaged glands.



Silk fibroids are used as a structure to grow salivary gland cells.

## Cure in sight for Hep C patients

The outlook for the sickest hepatitis C patients—those with advanced cirrhosis or those who have had a liver transplant but the virus has returned—has historically been bleak.

But researchers say that could change now that the U.S. Food and Drug Administration has cleared the way for expedited drug development and review of an investigational combination of drugs that shows promise for healing these patients.

The FDA has granted amended Breakthrough Therapy Designation for an oral regimen of daclatasvir and sofosbuvir taken with ribavirin for the treatment of patients with the genotype 1 strain of hepatitis C.

The decision was based on early results of the ALLY-1 clinical trial.

Fred Poordad, M.D., the principal investigator of the study, has been researching cures for hepatitis C for 20 years.

“We have had a lot of success recently with new oral medications for various groups of patients, but it’s exciting to see a cure in sight for patients who have the bleakest outlook,” said Dr. Poordad, clinical professor of medicine at the Health Science Center and vice president of academic and clinical affairs at the Texas Liver Institute. “We are refining treatments for different groups and I would say that in the next few years, we should be able to treat most genotypes very successfully.

“This is a very promising time for hepatitis C patients.”

The Phase III study evaluated a 12-week oral regimen of daclatasvir and sofosbuvir taken once a day with ribavirin. Results showed an overall cure rate of 94 percent for patients with a liver transplant and returning hepatitis C, and 83 percent for patients with advanced cirrhosis. The study’s primary endpoints also were reached, with 95 percent of post-transplant genotype 1 patients and 82 percent of genotype 1 patients with advanced cirrhosis being cured 12 weeks after treatment.

Earlier this year, the FDA had planned to withdraw the Breakthrough Therapy Designation for the regimen because of the availability of other medicines that were more successful for other genotypes. But based on the early data from the ALLY-1 trial, the FDA amended its original decision and opted to continue expedited development of this treatment for the subgroup of patients studied in ALLY-1.

The FDA is continuing its new drug application review of the daclatasvir-sofosbuvir regimen for the treatment of genotype 3 hepatitis C.

# Don't drink, ever, if pregnant

Prenatal exposure to alcohol is the leading preventable cause of birth defects and intellectual and neurodevelopmental disabilities in children, according to a clinical report co-authored by Janet F. Williams, M.D., FAAP, professor of pediatrics in the School of Medicine.

No amount of alcohol should be considered safe to drink at any time during pregnancy, states the report from the American Academy of Pediatrics.

The range of effects that can occur in someone whose mother drank alcohol during pregnancy is called fetal alcohol spectrum disorders, and includes neurocognitive and behavioral problems. The effects of prenatal alcohol exposure are lifelong, but early recognition, diagnosis and therapy for any condition can improve a child's health.

A lack of uniformly accepted diagnostic criteria for fetal alcohol-related disorders has critically limited efforts to lessen the impact of fetal alcohol spectrum disorders, said Dr. Williams.

"Even though fetal alcohol spectrum disorders are the most commonly identifiable causes of developmental delays and intellectual disabilities, they remain significantly under-recognized," said Dr. Williams.

Prenatal alcohol exposure is a frequent cause of structural or functional effects on the brain, heart, bones and spine, kidneys, vision and hearing. It is associated with a higher incidence of attention deficit hyperactivity disorder and specific learning disabilities such as difficulties with math and language, visual-spatial functioning, impaired impulse control, information processing, memory skills, problem solving, abstract



reasoning and auditory comprehension.

Even when a pregnant woman's consumption was limited to one alcoholic drink per day—such as a 1.5-ounce shot of distilled liquor, 5 ounces of wine or 12 ounces of beer—there is increased risk of infant growth retardation, a recent study found. Yet 8 percent of women surveyed said they continued to drink during pregnancy.

Drinking during the first trimester, compared to no drinking, results in 12 times

the odds of giving birth to a child with fetal alcohol spectrum disorders. First- and second-trimester drinking increased the odds 61 times, and women who drank during all trimesters increased the likelihood of fetal alcohol spectrum disorders odds by a factor of 65.

"The research suggests that the smartest choice for women who are pregnant is to just abstain from alcohol completely," Dr. Williams said.

## Chronic complication in diabetics explained

Most patients with longstanding Type 1 diabetes have chronic gastrointestinal symptoms that significantly reduce their quality of life. And now researchers have a better understanding of why this happens.

These complications, called diabetic enteropathy, include the delayed emptying of food, irritable bowel syndrome, abdominal distension and fecal incontinence. The cause was previously unknown.

Intestinal tissues from diabetic patients and healthy people were compared in a study co-authored by Franco Folli, M.D., Ph.D., professor of medicine in the Diabetes

Division of the School of Medicine. The studies were carried out by researchers at Boston Children's Hospital and Harvard Medical School and San Raffaele Hospital in Milan, Italy, led by Paolo Fiorina, M.D., Ph.D.

"In patients with Type 1 diabetes, the cell lining of the intestine was damaged," Dr. Folli said. "The stem cells that maintain this lining, called colonic stem cells, were altered. The culprit is found in a protein called insulin-like growth factor binding protein 3, which is produced in the liver and in higher amounts in Type 1 diabetes. It binds to a receptor protein on colonic stem cells,

causing their death and, in turn, damaging the intestinal lining."

The team also experimented with a biopharmaceutical that blocks circulating levels of the protein. Studies in diabetic mice show that the drug can reverse the colon damage.

"This has the potential to result in a new treatment for this chronic complication of longstanding Type 1 diabetes," Dr. Folli said.

The findings were published in *Cell Stem Cell*.



## Intolerant to chemicals? It could affect your children too.

Mothers with chemical intolerances are two to three times more likely than other women to have a child with autism spectrum disorder or attention deficit hyperactivity disorder, a new study shows.

The medical study, led by primary author Lynne P. Heilbrun, M.P.H., autism research coordinator for the Department of Family and Community Medicine, was published in *The Journal of the American Board of Family Medicine*.

People who are chemically intolerant often have serious reactions to common chemicals, and some become too sick carry out routine functions. Chemical intolerance affects about 10 to 30 percent of the U.S. population. Developmental disorders such as autism and attention deficit disorder affect 1 in 6 children in the United States.

The study was based on maternal responses to the Quick Environmental Exposure and Sensitivity Inventory, or QEESI, a 50-question survey used by physicians worldwide to diagnose chemical intolerance.

"We are most concerned about how vulnerable the children with ADHD

and autism were to environmental exposures," said Heilbrun. "Mothers reported that their children were significantly more sensitive to everyday exposures such as engine exhaust, gasoline, smoke, fragrances and cleaners than their neurotypical peers."

The children reportedly also were more sensitive to adverse effects from infections, medications, chemicals, foods and allergens. They were more likely to have had nausea, headaches, dizziness or trouble breathing when exposed to smoke, nail polish remover, engine exhaust, gasoline, air fresheners or cleaning agents.

"Physicians have the opportunity right now to become proactive in helping mothers protect their children from neurological disorders plaguing U.S. families," Heilbrun said, urging doctors to use QEESI to assess patients for potential chemical intolerances.

The authors also recommended all mothers and pregnant women avoid potentially harmful chemicals such as pesticides, solvents, combustion products, and chemicals used during construction and remodeling.

## Growth spurt

### Regents approve millions in HSC construction

A new Health Science Center clinic will be constructed in north San Antonio.

The UT System Board of Regents in August approved \$19.5 million for the construction of the multiservices center, which will be located on Interstate 10 West near Ralph Fair Road. It will expand teaching venues for students and trainees, enhance clinical research and make UT Medicine, the academic medical practice of the School of Medicine, available to more people.

The 18,000-square-foot facility will include exam rooms, conference rooms, offices for physicians, waiting rooms and a full-service imaging center with MRI, CT scan and general X-ray facilities.

"This clinic will be located in a high-growth area with a demonstrated need for both quality primary care and subspecialty medical services," said William L. Henrich, M.D., MACP, president of the Health Science Center.

It is part of a clinical transformation plan that includes expanding and diversifying services of UT Medicine throughout San Antonio beyond the primary outpatient practice site, the Medical Arts & Research Center in the South Texas Medical Center. That facility is also slated to undergo a major clinical expansion this year.

The regents also approved \$15 million to purchase and improve the Medical Centre Plaza building at 8431 Fredericksburg Road. The building will provide an additional 100,000 gross square feet of space to accommodate primarily administrative staff. The university had been leasing space in the building since 2006.

"The purchase will not only provide space for necessary expansion, but it will also generate cost savings of approximately \$2 million a year," Dr. Henrich said.

Tuition revenue bonds will be used to renovate other university buildings, many more than 40 years old. Updates will affect electrical, mechanical and plumbing systems, as well as security and safety, Dr. Henrich said.

# Conquering a **PARASITIC DEMON**



By Will Sansom

The emaciated girl's stare. The lethargic boy's protruding belly. The inert mother. From the sands of Egypt and Morocco to the rainforests of Brazil and Southeast Asia, Phil LoVerde, Ph.D., professor of biochemistry and pathology in the School of Medicine, has observed the human toll of schistosomiasis, the world's most common parasitic disease after malaria.

In oases and villages, he has been a welcome visitor—a scientist sifting through clues like a detective, ever on a mission to end the menace and relieve the suffering.

"I've worked on 'schisto' my whole life," Dr. LoVerde said. Indeed, searching for a better treatment has been his life's work, and with the help of colleagues at Texas Biomedical Research Institute and The University of Texas at San Antonio, Dr. LoVerde is developing a new therapy to control the spread of schistosomiasis worldwide. A \$3 million, five-year grant to the Health Science Center from the National Institute of Allergy & Infectious Diseases funds the studies.

Schistosomiasis, also called snail fever, is an infection of the larval worms of freshwater snails. These larvae, the size of a fleck of dust, infect 261 million people in 78 countries, according to the World Health Organization. Two-thirds of the world's cases are in Africa.

Infections result from contact with infested water during activities such as fishing, swimming and washing clothes.

"I've seen people who frequent the contaminated waters every day of their lives and are constantly exposed to the parasite," Dr. LoVerde said.

Infections usually affect the urinary tract, liver and intestines, causing symptoms such as blood in the urine. While the disease doesn't kill most victims, it is a chronic drain, causing subtle effects such as underperformance in schoolchildren who are anemic from blood loss. Children are stunted in their growth patterns if they have a heavy infection, Dr. LoVerde said, and their reproductive development is slower than that of uninfected children.

"It has a major impact on their future, there's no question," Dr. LoVerde said.

Dr. LoVerde began working in Egypt in 1970 and lived there for a year with his family, doing fieldwork on the Upper Nile near Aswan and Luxor. He also spent extensive time in Brazil.

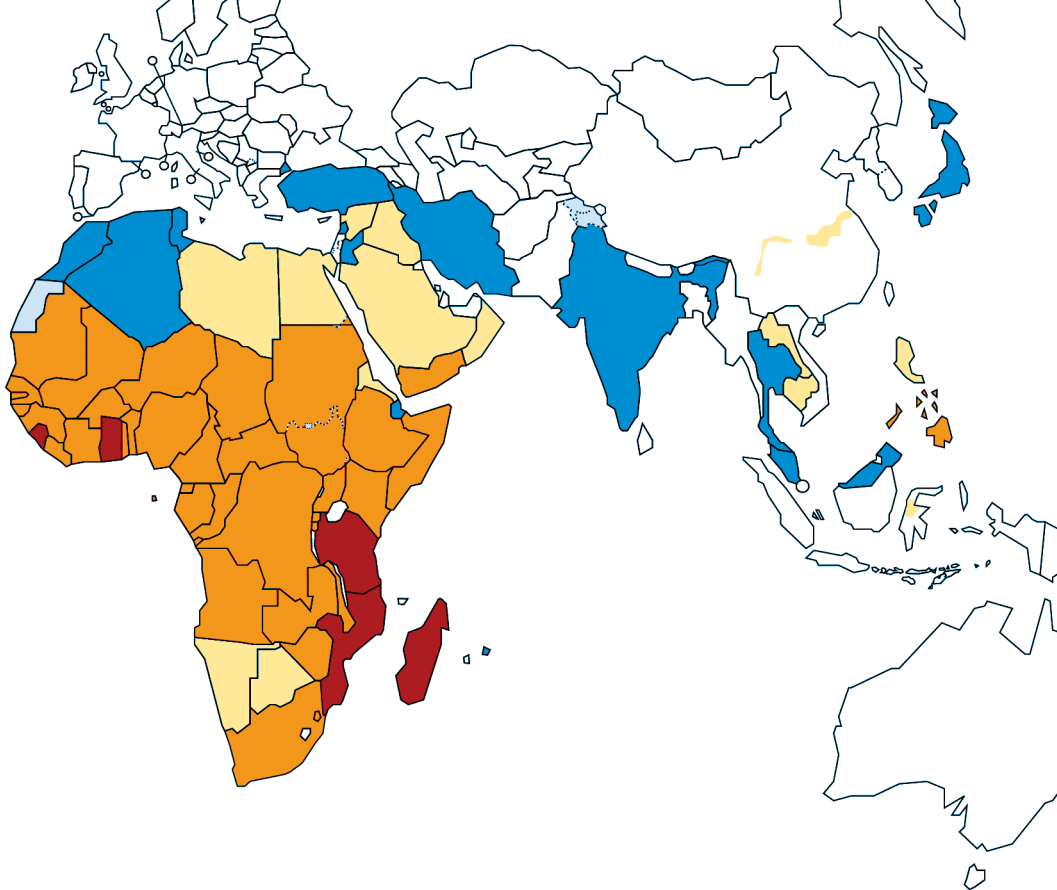
"In the early days we searched for snails, but later we did genetic studies to learn the role people's genes play in infection outcomes," he said. "In Brazil we went house to house with an interpreter speaking Portuguese, asking, 'who's your mother, who's your father, who's your brother or

**Like mosquitoes transmit malaria, freshwater snails carry deadly larval worms that infect millions of people worldwide.**

**Distribution of schistosomiasis**

- High (prevalence ≥50%)
- Moderate (prevalence 10%–49%)
- Low (prevalence <10%)
- Under evaluation; transmission possibly stopped
- Non-endemic countries
- Not applicable

SOURCE: WORLD HEALTH ORGANIZATION



sister, who’s your uncle, who’s your cousin?’ We used this information to establish a pedigree, and from it we found that, about 40 percent of the time, a person’s genes play a key role in infection outcomes.”

The genetic detective work also included analysis of the worms’ own genes, particularly the ones that allow the parasite to develop drug resistance. The most frequently prescribed medication, praziquantel, is plentiful and inexpensive, but as its use increases, the parasite’s resistance increases.

“Several funders are donating 250 million pills of praziquantel per year for each of the next five years to prevent the infection in Africa,” Dr. LoVerde said. “If the parasite develops drug resistance, the concern is we won’t have a backup. We need a drug that can be used in combination with praziquantel.”

The scientists are turning to a 40-year-old drug called oxamniquine for a solution. But improvements need to be made, they said. While praziquantel kills three schistosome species, oxamniquine in its original form killed only one, and that one species has been known to develop drug resistance.

In 2009, Dr. LoVerde was part of a team that published the sequence of the schistosome genome in *Nature*. In collaboration with geneticist Tim Anderson, Ph.D., of Texas Biomedical Research Institute, they used this information to develop a genetic map. This allowed the scientists to identify the gene responsible for drug resistance in the worms.

By 2013, working with P. John Hart, Ph.D., professor of biochemistry and director of the X-ray Crystallography Core Laboratory at the Health Science Center, the

researchers determined the crystal structure of the gene’s protein—a discovery published in *Science*.

“We showed the details of how oxamniquine binds to this protein and how the drug works,” Dr. Hart said.

Armed with this information, the researchers turned to UTSA’s medicinal chemist Stanton McHardy, Ph.D., part of the Center for Innovative Drug Discovery, a joint initiative of the Health Science Center and UTSA.

Dr. McHardy and students are taking the crystal information and making new derivatives—new modified compounds—of oxamniquine.

“Stan has made more than 80 compounds based on the information we have provided,” Dr. LoVerde said.

Two derivatives kill between 40 and 80 percent of two different schistosome species, they found.

“It’s amazing,” Dr. LoVerde said. “What we are doing works.”

Dr. LoVerde recently traveled again to an isolated area of Brazil, where he collected samples of worms. The team found five different mutations that lead to drug resistance to oxamniquine. The team will assess ways to block the problem.

“This shows the power of genetics and molecular biology to understand and address a disease,” Dr. LoVerde said.

By understanding why the parasite becomes resistant, the team may soon have a viable option to fight the spread of schistosomiasis, and help the 261 million infected people and the half-billion more who are at risk around the world.

“Governments create borders. Diseases do not follow those borders. If we’re not educating our students in global health, we’re doing a great disservice.”

—Andrew Muck, M.D., medical director for the Refugee Health Clinic

Inset: Dr. Muck, medical adviser, grabs a quick snack as medical students at the Refugee Health Clinic report on a patient’s condition. Right photo: Second-year medical student Fadi Al-Asadi examines Reziyebad Fardzadeh, a native of Iran.



# The ‘lost’ population

Student-run clinic brings health care to those fleeing violence and persecution


By Joe Michael Feist

PHOTOS BY JOEL SPRING

In the triage area, second-year medical student Fadi Al-Asadi, who was born and raised in Iraq and whose first language is Arabic, bends down to try and wake a sleeping toddler in a stroller. “Bon jour,” Al-Asadi says jovially to the French-speaking child from Cameroon in West Africa.

Across the way, nursing student Christina Potts is busy processing new patients. There’s a three-generation family from Burma, followed by a couple and their children from Bhutan. Next up is an elderly, white-bearded man from Iran wearing a woven, white prayer cap. The “waiting area”—chairs lined up and down the hallways—is crowded with refugees, each with a personal story of fleeing violence, persecution and war. The place is teeming with sound and color, the cadences and rhythms of world languages and bright ethnic dress from Africa, the Middle East and the Indian subcontinent.





“You don’t have to do mission trips in another country to learn about the world. The world is here in San Antonio.”

—**Moshtagh R. Farokhi, D.D.S., M.P.H., clinical assistant professor in comprehensive dentistry and dentistry adviser for the Refugee Health Clinic**

**Nursing student Alizain Maneshia (top left), medical student Nichole Michaeli (with stethoscope) and dental student Peggah Hammat observe as Dr. Farokhi, dental faculty adviser to the clinic, points out a dental problem in a patient.**

And they keep coming through the doors of the makeshift clinic at St. Francis Episcopal Church on Bluemel Road, near the South Texas Medical Center. Sniffling babies, stooped men and stoic women, all seeking health care.

This is a San Antonio health clinic like no other. It is the Health Science Center’s student-run, free San Antonio Refugee Health Clinic, a blessing for refugees and a teaching tool without parallel for the students who volunteer.

Back in triage, Al-Asadi, who was a teenager in Baghdad when the U.S. invaded Iraq in 2003, is moving from patient to patient, listening, learning, treating. He spent a year in Syria as a refugee himself before coming to the States in 2008, and so has “a personal connection” to the patients.

“Compassion is about 90 percent of the whole deal,” he said.

### **A helping hand**

The Refugee Health Clinic, which operates weekly, began in 2011, building on a School of Nursing effort. It is one of five student-run clinics that operate through the Center for Medical Humanities & Ethics, and is by far the most interprofessional with medical, dental, nursing and physician assistant students and faculty advisers.

It is estimated that 4,000 to 5,000 refugees live in a small area off Wurzbach Road in northwest San Antonio, within three miles of the Health Science Center. About 1,000 arrived in 2014 alone. They hail from dozens of countries, including Iraq, Cuba, Burma, Afghanistan, Iran, Bhutan, Congo, Somalia, Eritrea and Ethiopia.

Most refugees who are resettled in the United States are given temporary health benefits by the federal government that typically run out after six to eight months. Many of those who rely on the student-run clinic have no insurance, few resources and are without regular medical care. The Refugee Health Clinic plays a vital role in filling this gap, treating an estimated 500 patients a year.





“It’s really a lost population,” said Victoria Petty, one of the nursing student leaders at the clinic. “When you think of refugees, you think of New York or Miami. You think of these big portals of the U.S., not San Antonio. But we really have a population here that’s not even recognized.”

Patients mirror those from any outpatient clinic, with general health concerns, said Al-Asadi, one of the medical student leaders.

“We get patients who are there for back pain, for the flu, for uncontrolled diabetes, for hypertension, for rashes, for dental problems. We even get pediatric cases,” he said.

The students, under the guidance of faculty mentors, provide basic care and referrals, all at no charge.

“The point of the clinic is not to always have them come back to the clinic, because it’s an outpatient clinic,” Al-Asadi said. “The point is to treat them at that moment and try to get them linked to the health care system here in San Antonio. If they don’t qualify for the [Affordable Care Act], we try Carelink, a financial assistance health care program through University Health System. And usually we’re successful with that.”

### **Listening, learning, treating**

The refugee clinic provides unique challenges and opportunities for the future health care providers. One is the interprofessional nature of the setting. Teams are made up of a medical student, a nursing student and a dental student. They all observe each other’s role in the patient’s treatment and report as a team to their faculty advisers.

“I feel like I’m applying nursing school [lessons] even before I’ve graduated,” said Petty. “You learn the behind-the-scenes of a clinic, you learn how doctors interact with patients, how dentists interact. It’s all-encompassing. You get more information there than you’d get in a regular classroom.”

Students are able to learn from each other, said Peggah Hammat, a fourth-year dental student and first-generation Iranian-American.

“As a dental student, I’ve learned so much about the medical aspect and how to interview patients and what questions to ask,” she said.

“I remember a patient who had periodontal disease, bone disease. And they had no idea what that was. We had



“Sometimes in different languages patients describe pain differently. So that adds another challenging layer to health care.”

—Heidi Worabo, D.N.P., RN, clinical assistant professor and a nursing faculty adviser for the Refugee Health Clinic

**Inset:** Dr. Worabo, a nursing faculty adviser (right), chats with graduate student Lora Studley, RN (center) and Christopher Dayton, M.D., clinical assistant professor, at the clinic. **Right photo:** Dr. Worabo examines Nar Kami, from Bhutan.



to sit with them and explain why this is happening, what are some risk factors and how do we make sure you don't lose all your teeth. Not only was it a learning experience for the patient, it was a learning experience for the nursing and medical students.”

A particular test for the students comes with the nature of the patient population itself.

“One of the greatest challenges is dealing with so many different cultures, so many different languages,” said Eden Bernstein, one of the medical student leaders. “We try to have adequate interpreters, but a lot of times we have to improvise and be very patient with the patients that we see. There's not really an easy answer, it's just kind of being resilient and focusing on the task at hand.”

Many of the students, as well as the faculty advisers, have some sort of international background or experience, and many are bilingual. There are Arabic speakers such as Al-Asadi, the medical student. Hammat, the dental student,

speaks fluent Farsi. Alizain Maneshia, a nursing student and native of Pakistan, speaks Hindi. Others speak French and Spanish.

In some cases, one member of a patient's family speaks enough English to translate. But still, at times, interpreters have to be hired. Aside from the language differences, many refugees have had little experience with health care and find it difficult to describe symptoms or illness progression.

### Stepping out of the box

If the cultural challenges are steep, the gratification is abundant, the students agreed.

“Every time I leave the refugee clinic, I know that I've impacted this population just a little bit more,” Hammat said. “Every one of these cultures is very family oriented. So if you tell them just a little about oral hygiene or teach them how to take care of their teeth, it will permeate through the rest of their [family circle].”





Bernstein, the medical student, contrasted his experiences at the clinic with classroom work.

“Going through the curriculum for the first years of medical school—it’s the preclinical medicine where we focus on the disease process, on the science,” he said. “It’s very textbook-oriented learning. So any time that I’m able to step out of that little box and glimpse what I’ll eventually see as a doctor and how I can potentially make an impact in the future, it’s invigorating and exciting.”

“Every once in a while I see a patient and I’ll refer them out to receive care from a different place or we send them to get labs at University Hospital, and we follow them up at the next clinic and I see that the treatment that we gave them worked and they’re better. It’s very refreshing to feel that you’ve made this impact.”

Petty, the nursing student, pointed to the inherent altruism in health care fields.

“I wanted to be a nurse because I like pus and broken

bones and blood,” she said, only half-jokingly. “And it’s exciting. And at the end of the day, whether it’s something as outrageous as that or something as simple as helping a Nepalese man to overcome the flu at our clinic, you’re helping someone.”

Al-Asadi remembers a refugee who came to the clinic suffering from severe anemia. He was able to diagnose it and get her the proper treatment.

“I felt happy,” he said, “because I thought that was the gratification I was looking for. To make people feel better and to feel gratified, I think that’s part of the payment. It’s not necessarily financial. It’s a humanitarian profession, and we all signed up to serve people. And we should keep that always in sight.”



WARNING/MISE EN GARDE  
Children have STRANGLED in loose harness straps. Fully restrain the child seated outside the vehicle.  
Les enfants se sont ÉTRANGLÉS dans les harnais ou mal serrés. Attachez l'enfant correctement lorsque le porte-bébé est installé.

A photograph of a woman with dark hair holding a baby wrapped in a grey blanket with colorful polka dots. The image is partially obscured by a white, angular graphic element that contains the text.

# Off the Crooked path

Moms recovering from substance abuse  
choose the straight road  
for their babies

By Rosanne Fohn

PHOTOS BY JOEL SPRING

**C**oming into the world was the easy part for Nevaeh Aldana. Born July 7, 10 weeks premature, the baby girl with dark, wispy hair was immediately whisked away to the hospital's neonatal intensive care unit, where she was evaluated and put on a respirator to support her underdeveloped lungs.

But in addition to observing Nevaeh for health issues related to prematurity, the nurses were watching to see if she would develop neonatal abstinence syndrome (NAS), withdrawal from the methadone her mother had been prescribed during pregnancy to manage her heroin addiction. Even though methadone may still cause NAS, it is considered safer during pregnancy than heroin use or abrupt withdrawal, which can lead to miscarriage.

Before long, the tiny newborn began withdrawing. She cried inconsolably and had trouble sleeping for longer than an hour at a time. Already weighing less than 4 pounds, she had little interest in eating. She vomited and had diarrhea. Like many babies with NAS, she was sensitive to being touched, making it difficult to comfort her.

The nurses began the standard treatment, giving Nevaeh medication similar to the methadone her mother had been taking.

The goal: gradually weaning her off of the drug. It took five weeks.

On Aug. 20, Nevaeh went home.

But her care didn't stop there.



## Soothing babies through science

The majority of babies exposed to opioid drugs while in the womb, between 60 and 94 percent, develop neonatal abstinence syndrome. NAS often includes symptoms such as Nevaeh's, but can also result in seizures and, in rare cases, death.

Yet nationwide, opioid use among pregnant women has skyrocketed, resulting in a 300 percent increase in babies born with the syndrome since 2000.

"Often, women with substance use disorders have experienced trauma, such as childhood abuse and neglect, and have co-occurring mental illness," said Lisa Cleveland, Ph.D., RN, PNP-BC, IBCLC, assistant professor in the School of Nursing.

Over the past five years, Texas has seen a 60 percent increase in NAS cases, with Bexar County leading the state in the number of babies born with the syndrome.

In 2007, the Mommies Program was created to offer these mothers and their babies a wide range of support, including methadone treatment for mothers during pregnancy, a recovery program after the baby's birth, counseling and a 13-week series of parenting and life-skills classes.

Nevaeh's mother, Yolanda Aldana, 25, is one of the more than 600 women who have participated in the community-based counseling and parenting program, a partnership among the Center for Health Care Services, University Health System, the Department of State Health Services and the School of Nursing.

"There is such a stigma associated with being a mother who has a substance use disorder, particularly when interfacing with health care providers. This can create additional barriers for women seeking treatment," said Dr. Cleveland, a NICU nurse for 12 years before becoming a pediatric nurse practitioner and researcher.

It can also interfere with the mother-child bonding process. Although mothers are discharged from the hospital within a few days, most babies with NAS stay in the NICU for more than two weeks.

"After interviewing several mothers whose infants had NAS, I realized that their experiences were different than other NICU mothers," Dr. Cleveland said. "They had overwhelming feelings of shame and guilt. These feelings could be so strong that some mothers wouldn't come to the NICU to visit their babies."

Since the Mommies Program began, the time babies with NAS stay in the NICU has decreased by 33 percent.

Lisa Cleveland, Ph.D., RN, PNP-BC, IBCLC, works with Yolanda Aldana and her baby, Nevaeh, on Kangaroo Mother Care techniques. Aldana and her daughter are part of the Mommies Program, a community-based counseling and parenting program for mothers recovering from substance abuse.

“Seeing what Vaeh was going through was terrible. My mother said that the reason I was in this situation was because I took the crooked path. I am never going to put myself in this situation again.”

—Yolanda Aldana

Aiding in the process are medications to alleviate some symptoms and soothing techniques such as Kangaroo Mother Care, often used with premature babies that promotes continuous skin-to-skin contact between the mom and baby and provides comfort to both.

“[Kangaroo Mother Care] has been used for years with preterm infants, resulting in dramatically improved outcomes for mothers and infants. It is often recommended for infants with NAS, but there has been little evidence to show if it’s effective,” Dr. Cleveland said.

In 2014, Dr. Cleveland received \$204,000 from the Department of State Health Services to investigate the impact of Kangaroo Mother Care on stress and attachment in mothers and babies suffering from the effects of substance abuse.

Dr. Cleveland’s project is multipronged. First, she teaches mothers about Kangaroo Mother Care. The idea behind the technique is to snuggle the baby, dressed in only a diaper, against the mother’s bare skin, allowing the baby to smell her mother and hear her mother’s heartbeat. This also makes on-demand breastfeeding, an important aspect of NAS recovery, more likely.

Then, using the School of Nursing’s Biobehavioral Research Laboratory, the saliva of both mothers and the infants is tested to measure cortisol levels. Cortisol is a biomarker of stress. Samples are collected before Kangaroo Mother Care begins and again 20 minutes later. The data will determine if the technique improves attachment and reduces stress reactivity in mothers and babies with NAS.

Dr. Cleveland is also evaluating whether Kangaroo Mother Care further lowers infants’ need for medication, lessens the length and cost of hospital stays and reduces placement of the children in foster care or with other relatives.

Based on the study’s early success, Dr. Cleveland has been awarded an additional \$50,000 from the Department of State Health Services to expand the Mommies Program to

other area hospitals and include more mother and baby pairs.

The grant is also helping the Mommies Program expand to other areas of the state. A writing team led by Dr. Cleveland published *The Mommies Toolkit* for the Department of State Health Services, outlining how other communities can add resources similar to the Mommies Program. They held workshops about the program with community agencies from the counties with the highest rates of NAS, such as Dallas, Harris, Nueces and Tarrant counties.

## Heart to heart

On a recent morning, Yolanda demonstrated Kangaroo Mother Care with Nevaeh. Yolanda undressed Nevaeh to her diaper, tucked her inside of her blouse and placed her on her bare chest. Nevaeh quickly fell into a deep sleep.

With Nevaeh safely snuggled to her chest, Yolanda said she feels grateful for the opportunity to participate in the Mommies Program and be part of the Kangaroo Mother Care study. It has helped the pair bond.

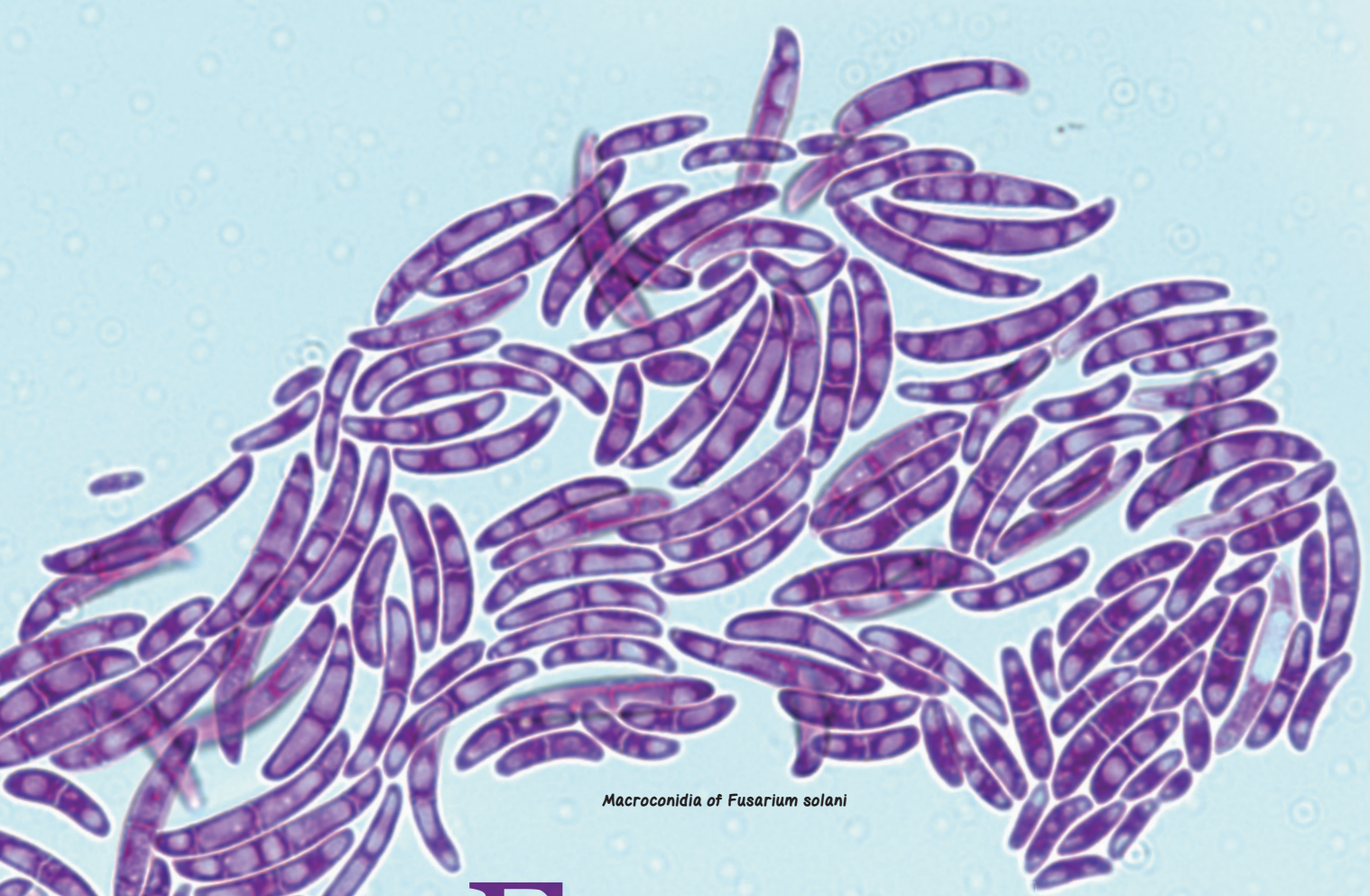
“I love the feeling of Vaeh’s heartbeat. It’s like she’s still in my womb,” she said. “I remember the first time I held her like this. My heart just melted.”

She also remembers the day she was discharged from the hospital, forced to leave her baby behind.

“I felt horrible. Seeing what Vaeh was going through was terrible,” she said. “My mother said that the reason I was in this situation was because I took the crooked path. I am never going to put myself in this situation again.”

She is continuing with the Mommies Program and still uses Kangaroo Mother Care with Nevaeh, even after bringing her home.

“These mothers are so strong. They never cease to amaze and inspire me,” Dr. Cleveland said. “Their strength comes from their children.”



*Macroconidia of Fusarium solani*

# Fungus among us

By Tina Luther

**T**hey're everywhere. They sometimes appear as mold. Sometimes, yeast. They're a necessary ingredient in beer, cheese, bread and soy sauce. They're also used to make industrial chemicals, detergents and antimicrobials.

Simply put, fungi are an essential part of life.

But what happens when things get out of hand? Enter the Fungus Testing Laboratory.

"Although fungi surround us and help maintain our environment of natural growth and decay, they can be harmful to those who are immunocompromised, such as patients with transplants, cancer or HIV," said Nathan Wiederhold, Pharm.D., associate professor of pathology.

While fungal infections may appear on the skin, oftentimes they are acquired by breathing in the air (not

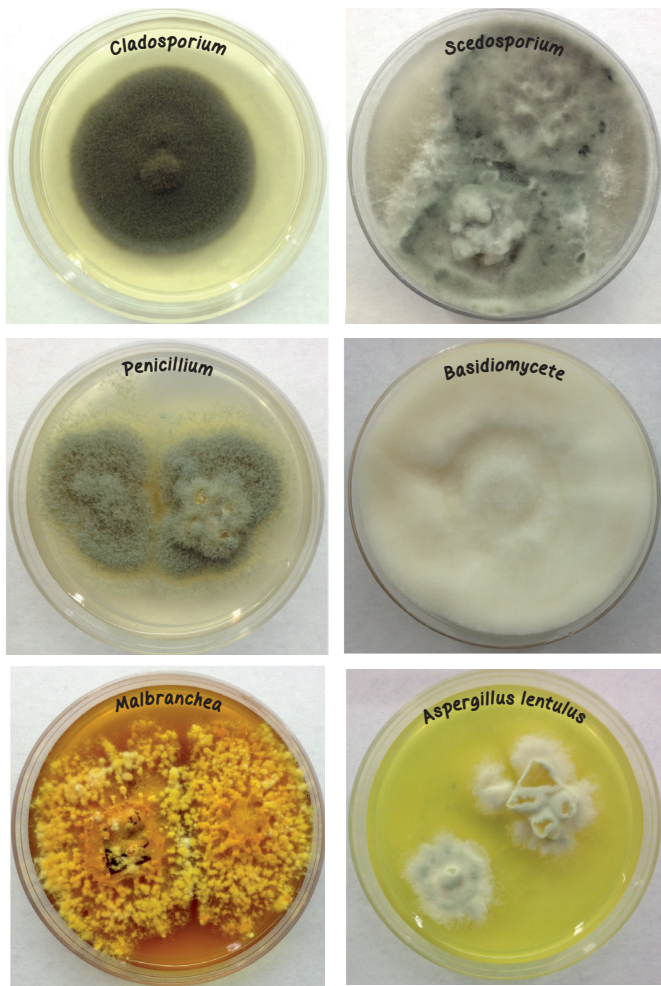
by eating mushrooms). When patients with weak immune systems are unable to fight these infections on their own, their physicians turn to the Fungus Testing Laboratory to help identify and treat the infection.

First, a sample is cultured from a human or animal and isolated by institutions or hospital labs. Then the sample is sent to the Fungus Testing Laboratory, where it is analyzed under a microscope, or at the molecular level to study the sample's DNA sequence.

Various antifungal compounds are also tested against the fungi in order to help guide in treating the infection. Drug level assays also determine if antifungal compounds are in therapeutic ranges to fight infections in patients.

Thirty years ago, the lab was founded as a one-man shop by Michael Rinaldi, Ph.D. It slowly grew, with the addition of Deanna Sutton, Ph.D., professor of pathology, and Annette Fothergill, M.A., M.B.A., associate clinical professor of pathology. With Dr. Rinaldi's passion for spreading the word about fungal disease, Dr. Sutton's talent





**Left: The Fungus Testing Laboratory receives more than 5,000 specimens of fungus annually for testing and combines both research and clinical care under one roof. Above: Carmita Sanders, medical technologist (left); Nathan Wiederhold, Pharm. D., associate professor of pathology; and Deanna Sutton, Ph.D., professor of pathology, analyze a slide.**

for fungal identification and Fothergill's savvy skills for drug susceptibility testing, cases quickly increased and the small research area mushroomed into a bustling lab with 10 employees who occupy more than 2,800 square feet.

The lab now receives more than 5,000 specimens annually for testing and combines both research and clinical care under one roof. Dr. Sutton serves as the administrative director, Fothergill is the technical director and Dr. Wiederhold assumed the directorship of the laboratory after Dr. Rinaldi's retirement two years ago.

The lab has extended its services to include assisting with drug development and research on the effectiveness of drugs for pharmaceutical companies. Many of the most commonly used antifungals such as Posaconazole, often used to treat thrush, and Efinaconazole, used to treat toenail fungus, were tested early in pre-clinical development in the Fungus Testing Laboratory.

"What sets the Health Science Center's Fungus Testing Laboratory apart is the high level of expertise and expanse of our testing capabilities," said Dr. Sutton. "There isn't another lab in the world that receives the amount or scope of cases and has the number of fungal isolates that we do."

The laboratory has assisted in cases that have made national headlines. Among them, the deadly 2012 outbreak of fungal meningitis that affected more than 750 patients in 20 states who had received spinal injections with a contaminated steroid from a compounding lab in New England.

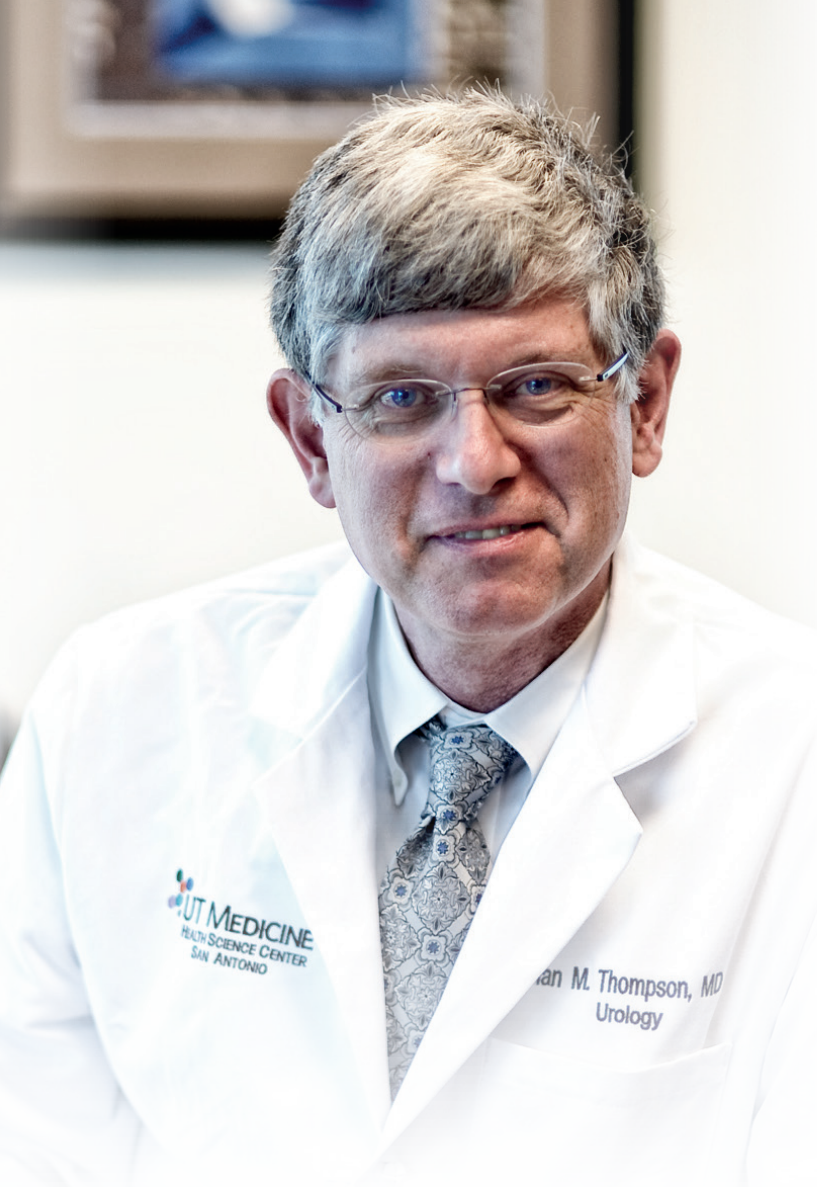
"The expertise and service provided by the lab are well-recognized," said Sean Zhang, M.D., Ph.D., director of the Mycology Laboratory at Johns Hopkins Hospital. "The textbook, *Guide to Clinically Important Fungi*, edited by the scientists in the lab, is the must-have reference book for almost every clinical lab that offers fungal identification testing. In addition to the excellent clinical service, the lab collaborates with other academic centers in conducting cutting-edge research in the area of fungal diagnostics."

Researchers in the lab have contributed to the discovery of several new species of fungi, including those causing infections. Among the most recent is *Acremoniosis suttonii*, a yellow, slimy cylindrical fungus found in forest soil in Burgos, Spain. It was named in honor of Dr. Sutton's years of work in fungal taxonomy.

The lab has also trained dozens of researchers in the United States and throughout the world who in turn have established labs in their respective institutions and countries. Collectively, the three directors have published more than 500 papers on fungal research and are frequent presenters at international conferences.

Although there is not a typical day in the lab, the future points to challenges with resistance to drugs, the necessity for early and rapid diagnosis, and changes in taxonomy.

"This is a dynamic time for mycology," said Fothergill. "There is so much more to learn and discover."



# When the doctor becomes the patient

By Elizabeth Allen

## What goes through the mind of a cancer doctor who learns he has cancer?

Ian M. Thompson Jr., M.D., director of the Cancer Therapy & Research Center, wasn't as worried as was his wife, Donna, about the odd spot on his right ear.

She asked him to have it checked out; he was in no rush.

In reality, he didn't have to go too far. Three floors down from his office in the CTRC, Sandra Osswald, M.D., oversees the Dermatology Clinic. Donna Thompson eventually convinced her husband to visit Dr. Osswald, who biopsied the spot. It wasn't long before the cancer center director was told the news: He had cancer.

He was sent to Vineet Mishra, M.D., director of Mohs Surgery and Procedural Dermatology. Mohs is micrographic surgery that allows physicians to remove a tumor while leaving the surrounding healthy tissue unharmed. Dr. Mishra is one of nearly 1,200 fellowship-trained Mohs surgeons in the U.S.

"It was an early evolving melanoma," Dr. Mishra said, "and it turned out to be more extensive than initially thought."

Skin cancer is the most common type of cancer in the U.S., with more than 2 million Americans diagnosed each year. While melanoma isn't as common, accounting for only 2 percent of all skin cancers, it is the most deadly. There will be an estimated 73,870 new cases of melanoma diagnosed this year, and nearly 10,000 people are expected to die in 2015 from the cancer, according to the American Cancer Society.

"Here in South Texas, we're sitting in a hotbed of skin cancer," Dr. Mishra said. "There is a misconception that skin cancer only affects certain races. In fact, it affects people of all races, all ages and both genders. It's a major cause of concern."

In skin cancer, a small lesion can conceal a dangerous mass with roots underneath.

Dr. Mishra compared the potential threat to that of an iceberg.

"What sank the Titanic was that which was beneath the surface," he said.

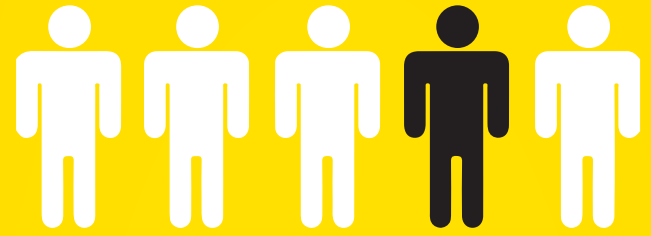
In Dr. Thompson's case, the lesion was especially serious because of its depth and location.

"Melanoma on the head and neck is a cause for concern," Dr. Mishra said. "Given the routes of vascular and lymphatic drainage, it can spread to other vital structures and organs."

"Why me?" is a question that some patients ask when faced with a frightening diagnosis, but Dr. Thompson brushed that off.

# Maximum exposure - SKIN CANCER

Skin cancer is the most common cancer in the U.S.



One in every five Americans will develop skin cancer in their lifetime.

In the U.S., more than **3.5 million** skin cancers are diagnosed in more than **2 million people each year.**



One American dies every hour from skin cancer.

## TYPES OF SKIN CANCER

- 1. Basal cell carcinoma** is the most common type of skin cancer. It most frequently affects people with fair skin.
- 2. Squamous cell carcinoma** is the second most common type of skin cancer, and most often affects those with fair skin.
- 3. Melanoma** is the deadliest type of skin cancer and often develops as an asymmetric, irregularly bordered, multi-colored, large and evolving dark spot.



A person's risk for melanoma doubles if he or she has had five or more sunburns.



More than 90 percent of melanoma skin cancers are due to UV radiation exposure



There were 2,410 new cases of melanoma diagnosed in Texas in 2015.

## COMMON SKIN CANCER TREATMENTS: surgery, radiation, chemotherapy, Mohs surgery

**Mohs surgery is the most effective treatment** for most types of skin cancer and has the highest cure rate.

There are 1,200 fellowship-trained Mohs surgeons in the U.S.



“Physicians deal with data,” said Dr. Thompson, who attended the U.S. Military Academy before earning his M.D. at Tulane University. “I can remember as a college student sitting up on the top of the gymnasium at West Point sunbathing on weekends, so there’s no ‘Why me?’ there.”

Besides, he said, while there are clear risk factors—environmental, behavioral and genetic—a certain amount of cancer is simply bad luck. There’s no point in grappling with the past.

The question of “What if?” is a little different.

“I spend my life with the privilege of dealing with cancer patients,” he said. “You begin to understand that what you really have is today.”

And “today” can be filled with a slew of critical decisions: What is the best treatment? Will reconstructive surgery follow?

Dr. Mishra reviewed the options with Dr. Thompson: Mohs surgery, radiation, or wide local excision. Dr. Thompson chose Mohs surgery.

With Mohs surgery, skin cancer is removed in layers. After each layer is removed, it is examined under a microscope. The process continues until healthy tissue around the cancer, or a clear margin, is reached.

“Dr. Thompson’s first layer was positive [for cancer],” Dr. Mishra said. “That’s a concern because the vast majority of patients are clear on the first layer after taking the recommended margin—which means his tumor was larger than anticipated.”

After Dr. Mishra took the second layer, the margin was clear. It was time for reconstruction surgery.

They took skin from his clavicle and sewed it on to the top of Dr. Thompson’s ear. It was challenging, Dr. Mishra said, because the cartilage has little blood supply, and a robust blood supply is needed to nourish the graft.

They fenestrated the cartilage, poking several small openings into it to allow what blood it could produce to reach the surface.

“Then we stitched the graft in place and applied a bulky dressing on it,” he said. “It looked massive, but we needed to maintain firm pressure over it or else the graft would not survive.”

After three weeks, the graft was pink and healthy.

The most important take-away from the experience of being a cancer patient, Dr. Thompson said, is simple: “Do not put your health on hold.”

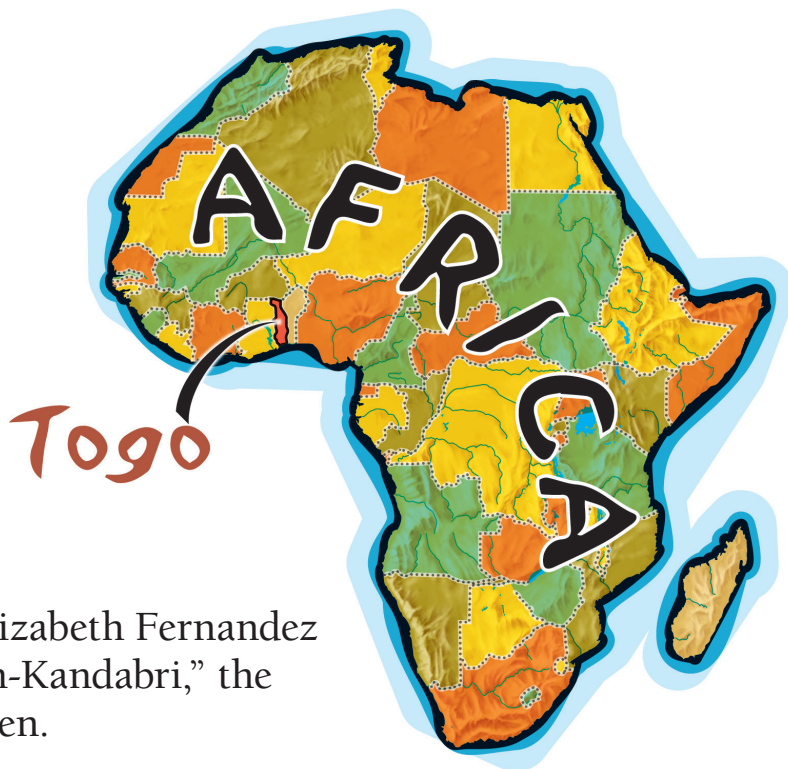
“The second thing is that there’s an old saying—the definition of an expert is someone from out of town. That is simply not true. We have the very best cancer care in the world right here.”

Sources:  
American Academy of Dermatology  
American Cancer Society  
American College of Mohs Surgery  
Centers for Disease Control and Prevention

National Council on Skin Cancer Prevention,  
American Cancer Society Skin Cancer  
Foundation Statistics  
Skin Cancer Foundation

# The Protector of children

By Lety Laurel



In Togo, Africa, Elizabeth Fernandez is called “Nbataam-Kandabri,” the protector of children.

It is the term for pediatrician in Anufo, just one of the many languages spoken in the West African town of Mango. Dr. Fernandez has lived there for one year, working with Samaritan’s Purse, a nondenominational evangelical Christian international relief organization.

She is one of only two pediatricians in a hospital that serves a town of 55,000 people, plus hundreds that come from surrounding towns and from four neighboring counties.

It hasn’t been easy. “Routine” cases include severe malaria, meningitis, typhoid, snakebites, sickle cell, cancerous liver tumors and cancer in the lymphatic system. The death rate among children under 5 is 96 per 1,000 live births—nearly 10 percent.

“I think the hardest part about what I do now is that we see a fair amount of death at the hospital, so that can be emotionally draining,” she said. “I also work long hours, more than I did in residency.” She is one of three full-time physicians, and they juggle overnight on-call hours every third day, seeing patients of all ages.

“As difficult as it may be at times, it is equally rewarding work,” she said.

When Dr. Fernandez was 15, she became involved in World Link Ministries, which works to spread Christianity and build churches throughout the world. It was her strong faith that eventually led her to the field of medicine.

“I prayed for a field with both physical and spiritual needs,” she said.

Before enrolling in medical school, she traveled to Guatemala to visit her dying grandmother and caught a glimpse of the medical needs in less prosperous areas of the world.

“I remember being struck by the contrast between the hospital where my grandmother was admitted and the hospitals where I worked at the time,” she said. “I was already interested in serving overseas one day.”

She prepared for the experience extensively. Throughout medical school, she traveled to medically underserved areas around the world. She spent weekends in Mexican border towns, serving patients in mobile medical and dental clinics. She traveled to Peru as part of a team to set up mobile medical clinics there, and helped build a church and medical



Elizabeth Fernandez, M.D., was among the first team of doctors at The Hospital of Hope, a mission hospital and clinic in Togo, Africa. She is one of only two pediatricians in the hospital that serves the town of 55,000 people.



clinic in the Huichol village of Cañaverl, in the Mexican Sierra Madre Mountains.

With the Center for Medical Ethics & Humanities, she helped form Project Haiti, now called Project Hispaniola, a group of medical students that partnered with nongovernment organizations in Haiti to help improve the health care for villages in the Central Plateau. Her first trip to the country was in 2008.

“These experiences can really shape your future and the direction you want to go, whether you do global health or not,” said Ruth Berggren, M.D., director of the Center for Medical Humanities & Ethics and professor in the School of Medicine. “These experiences can profoundly effect the way you see yourself as a doctor while on planet Earth. Elizabeth is a great example of that.”

In February 2011, just before graduation, she worked for a month at Karolyn Kempton Memorial Christian Hospital in Togo.

“Before I left for Togo, I worried I wouldn’t be able to give back to the people of Togo as much as I would gain from the experience,” she said. “Even though I was soon to be a doctor, I feared my skills were too fresh and I was too inexperienced to be able to make significant contributions for the patients.”

That was before she saw the level of need.

There are 6.5 million people in Togo, where the life expectancy for men is 56 years and 61 for women.

Skilled medical professionals are rare. In Togo, there is only one physician for every 20,000 people. In contrast, according to the Association of American Medical Colleges, there was an average of one physician for every 383 people in the U.S. in 2013.

“I had never seen that level of medical resource-poverty before,” she said. “I was amazed at how much can be done to save lives with so little.”

After graduation, Dr. Fernandez was matched to the Medical College of Georgia for a residency in pediatrics.

During her residency, she remained undecided about where she would serve internationally. The path, she was sure, would show itself when it was time.

Then came the call she was waiting for: A new mission hospital and clinic called The Hospital of Hope was opening in northern Togo. She was asked to be among the first team of doctors.

She’s been there ever since, taking infrequent and brief breaks to travel to the U.S. to visit family and friends, and to mend emotionally.

She has no plans to ever practice medicine again in the States.

“When I started medical school in San Antonio, I had a number of people ask me why I would be interested in going overseas to practice,” she said. “Texas is a medically underserved state. I should stay right here in South Texas because there are plenty of medical needs here, they told me.”

“When we talk about medically underserved, we’re talking about places like Togo.”

She plans to work there indefinitely, though the hours are long, the resources few and the struggles seem ever-present.

She gets through the hard times with prayer, she said.

“Some patients’ deaths hit harder than others,” she said. “I pray that I may never stop feeling something when a patient passes, but I also pray that God will allow me the strength to persevere when there is still work to be done.”

With the patients she treats, she often thinks back to her grandmother in the intensive care unit of that Guatemalan hospital with so few resources.

“It helps me to see my patients as if they are my family,” she said, “and I want to give them the very best care that I can.”

## Seeds for the brain

From studies of mental disorders to brain-degenerating diseases, five research projects from the Health Science Center were each awarded \$100,000 seed grants as part of the UT System initiative to jump-start multidisciplinary research on the human brain.

A total of \$4.5 million was awarded through the UT System Neuroscience and Neurotechnology Research Institute, created by the Board of Regents in 2014 to facilitate team approaches to brain research. The Health Science Center was the only UT component in South Texas to receive the seed grants.

The projects receiving funding are:

- “Translatability of Rodent Dopaminergic Neuron Studies to the Primate Brain,” Michael Beckstead, Ph.D.
- “Transformative MRI Neurotechology for Micro-scale Human Cortical Imaging,” multiple researchers
- “Brain Circuit Function and Locus Coeruleus,” Martin Paukert, Ph.D.



Michael Beckstead, Ph.D.

- “Multimodal MRI-based Diagnosis and Treatment of Mild Cognitive Impairment,” multiple researchers
- “Responsive Neurostimulation in the Epileptic Baboon: A Pilot Study,” Charles Szabo, M.D.

## Baby? Not yet.

Teens from Bexar County and throughout Texas will benefit from two grants totaling \$13.75 million, awarded to the university’s UT Teen Health initiative that promotes healthy choices for adolescents.

Since 2010, the program has worked to decrease teen birth rates on San Antonio’s South Side. In three years, the program contributed to the decrease in teen births by 19 percent.

The grants will allow the program to expand its services, which have already impacted more than 12,000 teens, said Kristen Plastino, M.D., associate professor of obstetrics and gynecology and leader of the program.

“What makes UT Teen Health different is that we work with each of our stakeholders to understand their needs and to customize a plan to fit their goals,” she said. “With the new grants, we will continue to work with current partners and reach out to new stakeholders throughout the state that serve vulnerable youth.”

Those groups will include health care facilities, school districts, churches and organizations that work with the juvenile justice system and foster care youth, she said.





## Teaching the next generation

Postdoctoral research scientists will get a chance to grow their teaching skills and inspire a new generation of college students to enter research careers with the help of a \$3.5 million grant from the National Institutes of Health.

The five-year Institutional Research and Academic Career Development Award will allow the fellows to conduct research and gradually phase in the teaching component, until nearly half of their time is spent in classroom instruction at three partnering undergraduate institutions: St. Mary's University, Trinity University and Our Lady of the Lake University. It is part of the San Antonio Biomedical Education and Research program.

"Postdoctoral fellows may be doing wonderful research, but that does not equip them to stand up to teach a class of freshmen, or seniors for that matter," said Kay Oyajobi, M.B.B.S., Ph.D., M.B.A., program co-director. "Through this program, we encourage young researchers to think about all the things that will confront them in the classroom if they teach at a primarily undergraduate institution. We can equip them with the tools they need to succeed by leveraging the teaching excellence at our partner institutions."

## Fighting childhood obesity

Overweight and obese Hispanic children participating in increased behavioral counseling and education were more likely to adopt healthier lifestyles, resulting in healthier weights, according to a pilot study of children ages 5 to 14.

The study paved the way for a \$2.9 million grant from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, part of the National Institutes of Health. It will extend the study through 2019.

"The pilot study was the 'proof of concept' we needed to be able to get full funding," said Deborah Parra-Medina, Ph.D., M.P.H., study author and associate director for education and training programs at the Institute for Health Promotion Research.

A disproportionate number of Hispanic children in the U.S. are obese. Researchers believe if they are given additional counseling and education beyond the typical standard of care, weight gain can be controlled.

"Comprehensive behavioral programs have been shown to help these children improve their weight status, however, more efficient interventions that can be done in primary care clinics must

be developed for Hispanic children," Dr. Parra-Medina said.

The pilot study trained pediatric health care providers and clinical staff to offer behavioral counseling during routine clinic visits, and to schedule three follow-up visits over four months, following the American Academy of Pediatrics guidelines.

Beyond that, half of the participants received additional behavioral interventions, including a face-to-face counseling session with a health educator in which a family action plan was created, monthly telephone counseling and newsletters for a four-month period. All participants had to adopt two healthy dietary behaviors, and play outside for an hour or limit TV time to less than two hours a day.

"In these studies, we do not promote weight loss with children. We promote a healthier rate of weight gain," Dr. Parra-Medina said. "Children have the advantage of growing. We hope to slow down their weight gain so they can grow into their weight. We hope they will adopt these healthy lifestyle changes so they will not leave childhood overweight or obese and continue that trajectory into adulthood."

**PAUL B. ALLEN SR., D.SC., PA-C,** was named chair of the Department of Physician Assistant Studies. Dr. Allen recently retired from the military with 26 years of service, including combat tours in Iraq and Afghanistan.



**DAVID P. CAPPELLI, PH.D., D.M.D., M.P.H.,** was installed as president of the American Association of Public Health. A dental professor, Dr. Cappelli also directs the research division of the Department of Comprehensive Dentistry and the dental public health residency program in the School of Dentistry.



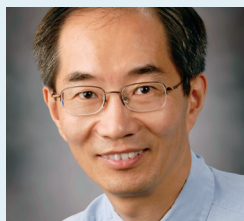
**PHYLLIS GORDON, M.S.N., APRN, ACNS-BC,** a clinical nurse specialist in the Vascular Surgery Division and clinical assistant professor in the School of Nursing, was named president of the Society for Vascular Nursing.



**THOMAS MAYES, M.D., M.B.A.,** chairman of the Department of Pediatrics, was selected to be a 2015–2016 Robert Wood Johnson Foundation Health Policy Fellow.



**LUZHE SUN, PH.D.,** professor of cellular and structural biology, was named a Fellow of the American Association for the Advancement of Science for distinguished contributions to the field of molecular carcinogenesis, DNA repair and experimental therapeutics, particularly for growth factor signaling and measurement of DNA repair activity.



**RATNA VADLAMUDI, PH.D.,** professor of obstetrics and gynecology, was named a Fellow of the American Association for the Advancement of Science for distinguished contributions to the field of molecular biology of cancer, particularly using molecular biology tools to study estrogen and coregulator signaling in cancer.



Rajeev Suri, M.D.

## And the winners are...

Seven faculty members were awarded Regents' Outstanding Teaching Awards by the UT System Board of Regents. The awards are given annually to a select few faculty from throughout the UT System's academic and health institutions who have demonstrated extraordinary classroom performance and innovation in instruction.

The Regents' Outstanding Teaching Awards is one of the largest programs in the nation for rewarding faculty performance.

Health Science Center award winners were:

- Y.W. Francis Lam, Pharm.D., professor, Department of Pharmacology
- John Lee, Ph.D., professor, Distinguished Teaching Professor, Department of Biochemistry
- Robert J. Nolan Jr., M.D., professor, Distinguished Teaching Professor, Department of Pediatrics, Associate Dean for Graduate Medical Education
- Jean Petershock, M.D., professor, Distinguished Teaching Professor, Department of Pediatrics
- Omid Rahimi, Ph.D., associate professor, Distinguished Teaching Professor, Department of Cellular and Structural Biology
- Rajeev Suri, M.D., associate professor, Distinguished Teaching Professor, Department of Radiology
- Karen Troendle, D.D.S., M.P.H., professor, Distinguished Teaching Professor, Department of Comprehensive Dentistry.



# Gala 2015

## Alzheimer's institute to open this year amid flurry of support

A comprehensive care center for Alzheimer's disease and other neurological disorders will open at the Health Science Center in 2016, fueled by millions in donations gathered in less than two years.

Over \$41 million has been secured in cash and endowment support to launch South Texas' first Institute for Alzheimer and Neurodegenerative Diseases, located in the Medical Arts & Research Center.

Of that, \$735,000 was collected at the 2015 President's Gala, themed "An Evening of Service." Proceeds from the Sept. 26 event established the Bartell and Mollie Zachry Endowment for Alzheimer Research and Patient Care, in recognition of the gala's honorees, Bartell and Mollie Zachry.

"They have made and continue to make exemplary contributions to San Antonio, to education and to the welfare of our entire community," said Health Science Center President William L. Henrich, M.D., MACP. "They are our city's finest examples of integrity and kindness and they embody, in all respects, service."

The Health Science Center must play an active role in tackling Alzheimer's and other neurodegenerative diseases, Dr. Henrich told the more than 1,000 gala attendees. That mission is something the community has rallied behind, offering unprecedented support for the project in record time, he added.

"As one of America's leading academic health centers, we must serve our community's health-related needs," he said. "The time is now to focus on new discoveries, treatments and auxiliary services to help those suffering from the ravages of Alzheimer's disease and related disorders."

The institute is designed to be a comprehensive care center and will feature expert diagnostics; physician specialists in Alzheimer's, Parkinson's and other diseases; support programs for caregivers; and access to clinical trials of new therapies.

By 2025, the number of Americans age 65 and older with Alzheimer's disease is expected to reach 7.1 million, a 40 percent increase from today. In Texas, the number of residents with the disease is projected to increase 48.5 percent. Texas ranks third in the nation in the estimated number of Alzheimer's cases and second in the number of deaths attributable to the disease, behind California and Florida.

"There are many reasons to be concerned about this illness," Dr. Henrich said, citing "its unrelenting



President William L. Henrich, M.D., MACP, recognizes Bartell and Mollie Zachry and Ann Biggs at the President's Gala Sept. 26.

cruelty in robbing a person of memory and faculty, the toll it takes on families and caregivers, its devastating effects on the economy and our collective sense of futility in trying to arrest its insidious lethal aggression."

There are also personal reasons. A little more than a year before his death, Glenn Biggs, the university's founding Development Board chairman, approached Dr. Henrich and School of Medicine Dean Francisco González-Scarano, M.D., about his diagnosis of Alzheimer's.

"He came to us seeking guidance on where to go and what to do for his advancing condition," Dr. Henrich said. "So you can understand our frustration in not being able to provide him answers that pointed him to a comprehensive care center or, even better, being able to assure him that prevention was available that could make a difference. After he left that day, Francisco and I pledged ourselves to this singular purpose."

"Glenn Biggs was the inspiration for our vision to establish the Institute for Alzheimer and Neurodegenerative Diseases, and we are committed to the promise we made to him and so many other families to see this vision achieved."

Dr. Henrich said he will ask the UT Board of Regents for approval to name the center in his honor.

Biggs' wife, Ann, was the gala's honorary chair. In a video tribute to her husband, who died in May, she spoke of the hope he carried with him that someday a cure would be found.

"He wanted to help others," she said. "This was his dream, and he would be so pleased. He took great pride in doing what he could to help the Health Science Center in all the years he had. It's my pleasure to do what I can to carry on his wishes."

"Don't give up hope. Something good is going to come."

### Gifts and pledges of \$1 million or more

Anonymous  
 Baptist Health Foundation  
 The Greehey Family Foundation  
 J.M.R. Barker Foundation  
 Robert J. Kleberg, Jr. and Helen C. Kleberg Foundation  
 Klesse Foundation  
 Kronkosky Charitable Foundation  
 Keith and Pat Vigeon Orme  
 Valero Energy Foundation  
 Anonymous

# Gifts boost pediatric transplant program

By Kate Hunger

Transplant surgeon Francisco G. Cigarroa, M.D., believes children who need life-saving organ transplants deserve care that is both high quality and accessible. Three recent gifts to the pediatric transplant program at San Antonio's University Transplant Center will help create a National Center for Excellence in pediatric liver transplantation, grow an already renowned pediatric kidney transplant program and improve access to services for patients along the Texas-Mexico border.

Particularly transformative, Dr. Cigarroa said, is a \$2 million gift from Carlos and Malú Alvarez to create the Carlos and Malú Alvarez Distinguished University Chair in Pediatric Transplant Surgery. Dr. Cigarroa, the inaugural recipient of the chair, specializes in adult and pediatric kidney and liver transplant surgery and is surgical director of the pediatric transplant program at the University Transplant Center. The center is a partnership between University Health System and the Health Science Center.

The Alvarez Distinguished University Chair will advance both the clinical and research missions of the program, he said.

Two-thousand children are among the more than 120,000 people in the U.S. waiting for an organ transplant. In Texas, nearly 200 of the 11,500 people waiting to receive an organ transplant are children.

Providing much-needed support to parents as they deal with their child's illness also contributes to better outcomes for pediatric transplant patients, Dr. Cigarroa said.

Dr. Cigarroa created the first civilian pediatric liver transplant program in San Antonio after joining the Health Science Center in 1995. He continued performing transplants as president of the Health Science Center from 2000 to 2009. The pediatric liver transplant program was eventually put on hold while Dr. Cigarroa served as chancellor of The University of Texas System from 2009 to 2014.

"I've always felt very strongly that San Antonio needs to provide a center of excellence for transplanting these very sick children who otherwise would die, and at the same time being very sensitive to preserving the family unit, making sure there is adequate support to not only take care of their child, but to take care of their family and themselves," he said. "This gift from Carlos and Malú Alvarez will save lives for children, and especially children in South Texas and along the Texas-Mexico border."

A \$125,000 gift from Robert Oliver established the Robert Oliver Pediatric Transplant Program Endowment to support outreach and education in San Antonio and surrounding communities and to help build a life-saving pediatric transplant program of excellence.



Transplant surgeon Francisco G. Cigarroa, M.D., will receive \$2.35 million to help create a National Center for Excellence in pediatric liver transplantation, grow an already renowned pediatric kidney transplant program and improve access to services along the Texas-Mexico border.

"We serve the South Texas community, and we want every family to know about this program," Dr. Cigarroa said. "Robert Oliver's gift is critical in helping us do this important outreach."

A gift of \$100,000 from Col. Robert E. Kelso and Betty Kelso will help establish outreach clinics in South Texas communities so that patients and their families will face fewer challenges in accessing care, he added.

"[The gift will] help us revitalize this critically important program for children who need a transplant to survive," Dr. Cigarroa said.

"It's wonderful when you have very passionate people like Carlos and Malú Alvarez, Robert and Betty Kelso, and Robert Oliver, who want to support excellence and want to be a part of something that actually impacts quality of life. What is more powerful than saving a baby's life through the miracle of transplantation?"

All of the gifts will enable the program to recruit and retain faculty for the transplant team and sustain the program for years to come.

"When we transplant a child, we have to think that this is for a lifetime," Dr. Cigarroa said. "Once you start taking care of a child, you are committed for life. You have basically inherited another family member, and that is a joy."

## Liver cancer research receives multi-year funding

The Clayton Foundation for Research is supporting, for up to five years, the development of a biorepository and new strategies for treating hepatocellular carcinoma (HCC), which is the most common liver cancer in adults. The gift provides \$300,000 in research support each year.

The research team is interested in learning why the morbidity and mortality of HCC is higher in Hispanics in South Texas than in Hispanics from elsewhere in Texas and the U.S., as well as in other ethnic groups, said Francisco G. Cigarroa, M.D., professor of surgery at the Health Science Center. Dr. Cigarroa directs the research project with LuZhe Sun, Ph.D., professor in the Department of Cellular and Structural Biology.

“The mortality of this tumor is extremely high,” Dr. Cigarroa said, adding that researchers are already interpreting project data from DNA and RNA sequencing.

The Houston-based foundation also is supporting the ongoing heart attack and stroke prevention research of Marc D. Feldman, M.D., professor of medicine and engineering. The foundation’s original five-year gift totaling \$1.5 million in 2011 was renewed and increased in 2015, with an option to continue year to year after 2016.

The Clayton Foundation seeks to invest in scientists who are key leaders in medicine and have a vision to advance biomedical discovery that has far-reaching benefits to humanity.

## Bequest funds the search for answers in mystery illness



They were symptoms that couldn’t be explained. Chronic headaches, nausea, respiratory problems, weakness, irritability, problems with memory and concentration, and depression—all with seemingly no cause.

Sometimes, this mysterious cluster of symptoms was called “sick building syndrome.” For those who served overseas, it became known as “Gulf War illness.”

Then in the early 1990s, the phenomena reported by physicians worldwide was given a new term: Toxicant-induced Loss of Tolerance, or TILT.

TILT is a sensitivity to low-level chemical exposure, and the term was coined by Claudia Miller, M.D., M.S., professor emeritus at the Health Science Center. A research-validated tool to assess TILT, called the Quick Environmental Exposure and Sensitivity Inventory, was then created and is now the most-used screening instrument for chemical intolerance worldwide.

TILT occurs in one of five primary care patients, but is rarely diagnosed by practitioners.

“It’s not a rare event. You have many people who are suffering from these symptoms, but they are labeled as fibromyalgia or other problems,” said Carlos R. Jaén, M.D., Ph.D., chair of the Department of Family and Community Medicine. “So even if you present with these symptoms, it’s not a formally recognized condition and we don’t have formal training on it. We need to develop more ways of approaching these patients more systematically and as a team.”

For years, Marilyn Brachman Hoffman felt misunderstood by her health care providers, who found her cluster of symptoms puzzling. She knew there was something beyond what her doctors were seeing.

“She went all around the world looking for help and nobody could pinpoint what was going on,” Dr. Jaén said. “Then she worked with Dr. Miller and found somebody who was actually making sense of what she was experiencing. In her will, there was an explicit request to fund studies related to this problem.”

After her death, The Marilyn Brachman Hoffman Foundation gave more than \$2.7 million to create the Hoffman TILT Program. Over three years, the money will fund interventions in homes of sensitive people, and will be used to develop a coordinated approach to outreach, education and research for patients and health care professionals.

“We are really the world’s headquarters for this issue,” Dr. Jaén said. “No one is working in this same area the way we are. This grant brings together the advancing of additional knowledge by doing studies in homes of those affected, but it also is a very heavy component of education. People need to be aware that this is an important issue.”

The goal of the TILT program is to build a pipeline of health professionals who can recognize, understand and address TILT and the challenges faced by patients. It also aims to improve health outcomes of patients through home visits to identify triggers and appropriate interventions.

“This leverages the new knowledge that has been developed at the Health Science Center,” Dr. Jaén said. “It gives us ways to transform the way we educate this generation and future generations of health care professionals and identify and alleviate this level of suffering.”



## FARE-THEE-WELL

# Course has good taste in health

By Kate Hunger

Second-year medical student Tiya Clark enjoyed cooking long before she ever tied on an apron and donned a chef's toque for the first meeting of her Introduction to Clinical Nutrition class. But the future pediatrician believes learning how to create healthy, affordable meals will make a huge impact on the lives of her young patients someday.

"Nutrition is important while children are growing," Clark said while preparing roasted asparagus to accompany shrimp fra diavolo during a class in November. "It's walk the walk. You can say, 'I've substituted lentils for ground beef. It tastes good.'"

Piloted last summer, the elective course is the fruit of a partnership between the Health Science Center and H-E-B. The course follows a culinary nutrition curriculum of the Tulane University School of Medicine, and is part of a national trend emphasizing culinary nutrition fluency among physicians, said Tisha Lunsford, M.D., clinical associate professor of medicine and director of the Gastroenterology Fellowship Program. Dr. Lunsford directs the course along with Michelle Savu, M.D., FACS, clinical associate professor of surgery.

"Food is universal," Dr. Lunsford said. "Everyone eats, and everyone has a culture of food. The doctor can take a few moments to connect to the patient: 'Tell me what you like to eat.'"

H-E-B purchased the curriculum from Tulane and also provides all supplies, expert chefs and the use of its teaching kitchen. H-E-B culinary nutritionist and corporate chef Charlotte Samuel teaches the culinary portion of the class. Samuel also is an adjunct instructor in the Health Science Center's Department of Epidemiology and Biostatistics.

The recipes featured in the program are based on a Mediterranean diet and cost no more than \$2.50 per serving, Samuel said.

"I want them to have a really good understanding [of food preparation] so that when they do talk to their patients, they are confident and authentic in what they are teaching," Samuel said.

Each class session lasts four hours. During a recent class, students tasted eight unlabeled food items in a special presentation on the physiology of taste.

"You blew my mind right there!" second-year medical student Max Cadena called out when a guest chef noted that iodized salt is double the volume of kosher salt because of its smaller grains.

During class, students cook in groups of four, share meals, review how to apply what they've learned, and engage in simulated clinical exercises led by Dr. Lunsford. The idea, she said, is to train proactive physicians who encourage patients to make doable dietary modifications, rather than simply treating symptoms of disease.

Another course goal is to cultivate student mentors. Second-year medical student Justin Low took the class last summer and was back this fall, checking in with students as they made collard greens and honey mustard pork tenderloin, and pesto pasta with roasted tomatoes, broccoli and white beans.

"I've never taught anything before," Low said. "It's helping me learn how to be an effective teacher to others."

Dr. Lunsford hopes to be able to expand the course to accommodate more than the current maximum enrollment of 16 and to make it available to other students in health professions courses at the Health Science Center.

"The 'do as I say' approach has failed," Dr. Lunsford said. "We have a patient population growing in girth despite all of our best efforts. We have to meet patients where they are."



## Military Medicine City, USA

### Two gifts support military health programs

The San Antonio area has one of the largest concentrations of active-duty military personnel and veterans in the nation, with an estimated 159,000 veterans living in Bexar County, according to the Bexar County Veterans Service Office. And that number is expected to grow.

To support them, USAA has given \$1.5 million to establish the USAA “Patty and Joe Robles, Jr.” Distinguished Chair for Military Health and the USAA “Patty and Joe Robles, Jr.” Endowment in Military Health. The funds will be used to support the director of the Military Health Institute and for military health programs and institute infrastructure. Another \$500,000 was given for faculty recruitment and start-up costs for the institute.

“This formalizes our Military Health Institute and allows it to be sustained,” said retired Maj. Gen. Byron C. Hepburn, M.D., the institute’s inaugural director. “It shows a commitment to us from a major national organization.”

The Military Health Institute was established in 2014 to improve the health of military service members, veterans and their families through education, research, clinical care and community engagement.

“San Antonio really has a unique aggregation of incredible assets and national resources when you talk about military health,” Dr. Hepburn said. “They say San Antonio is Military City, USA. It’s really Military Medicine City, USA.”

## Livestock Expo steers scholarships to HSC

Students from the schools of medicine, nursing and health professions have received \$270,000 in scholarships from the San Antonio Livestock Exposition, Inc.

This is the 11th consecutive year that the organization has supported the university, for a combined total of \$3.07 million.

“The shared goal of our partnership is to attract the best and brightest students to our campus, and provide them with a first-class education,” said Francisco González-Scarano, M.D., dean of the School of Medicine. “Then we work to retain these professionals to practice within South Texas, where there is a great shortage of health care in rural and medically underserved communities.”



PHOTO COURTESY OF GREG WESTFALL

# Bridging health care



**Cutting the ribbon: (From left) Carlos Rosende, M.D., executive director of UT Medicine; School of Medicine Dean Francisco González-Scarano, M.D.; President William L. Henrich, M.D., MACP; and School of Dentistry Dean William Dodge, D.D.S., celebrate the functional and symbolic joining of the Health Science Center's two clinical homes, the Medical Arts & Research Center and the new Center for Oral Health Care & Research.**

Both functional and symbolic, a bridge was constructed between two Health Science Center clinical homes—the Medical Arts & Research Center and the new Center for Oral Health Care & Research. A ceremonial ribbon cutting merged the two practices in October.

The bridge will facilitate referrals, enhance educational experiences and promote dental research as a component of good overall health, officials said.

“This walkway is a reminder that oral health is an important part of overall health,” said Health Science Center President William L. Henrich, M.D., MACP. “As is occurring now, the connection of the two buildings will further interdisciplinary work among our medical and dental students, clinicians and researchers.”

The Center for Oral Health Care & Research opened in September and is a clinical training site for dental and dental hygiene students. It is also home to clinical trials and features laboratories where faculty and trainees conduct research on oral health care.

“This is, of course, a symbolic as well as a real connection,” Dr. Henrich said. “We recognize oral health more and more is the key to good general health. And now our practices are joined in these two magnificent buildings.”

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