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CAMPUS EDITION

A shot to treat obesity? Study suggests new antibody might just do that

By Carol Marie Cropper

In a surprise finding, UT Southwestern researchers report that lowering levels of the hormone leptin can reduce obesity, over-eating, and the insulin resistance tied to diabetes – and they have found an antibody that can do that.

So far, the antibody has only been tested in mice, said Dr. Philipp Scherer, Director of the Touchstone Center for Diabetes Research and senior author of the study, published recently in *Cell Metabolism*. But UT Southwestern and research collaborators hope to test the antibody in human clinical trials soon.

The new study focuses on leptin, a hormone produced by fat cells and sometimes referred to as a “lipostat” because of its presumed function to maintain body weight. It signals the brain to increase or decrease eating and exercise in response

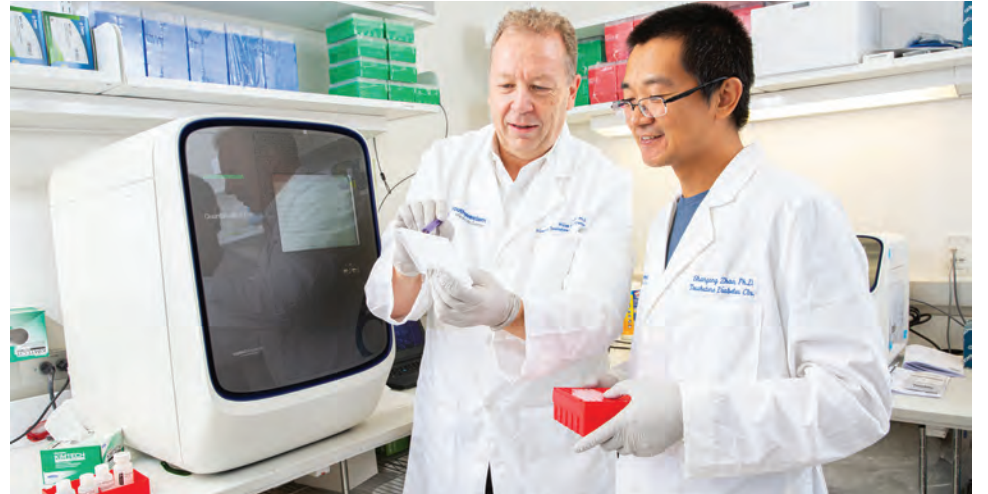
to weight gain or loss.

Leptin was hailed as a possible cure for obesity after it was identified in the early 1990s. However, early attempts to inject the protein as a treatment for obesity were disappointing; researchers discovered that obese people became desensitized to the hormone’s actions.

Unexpectedly, the UT Southwestern study suggests that reducing leptin levels rather than increasing them may produce the desired weight loss.

“We can actually show that more leptin causes leptin resistance,” said Dr. Scherer, also a Professor of Internal Medicine and Cell Biology. “We also found a way to sensitize the receptors so the brain responds again to the hormone.”

Obese mice – like obese people – already have a lot of leptin, produced by an abundance of fat cells



Dr. Philipp Scherer (left), Director of the Touchstone Center for Diabetes Research and senior author of a new obesity study, reviews data in his lab with the study’s first author, Dr. Shangang Zhao.

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Undergrads gain invaluable research exposure as Amgen Scholars

By Patrick Wascovich

Lauren Duan spent the summer working alongside UT Southwestern faculty members and postdocs focused on cardiac regeneration and investigating how cardiomyocytes can be programmed to regenerate and resist cell death.

Ms. Duan, along with 15 other selected undergraduates, is one of the initial Amgen Scholars on campus. The junior at Johns Hopkins University – mentored by Professor of Molecular Biology Dr. Rhonda Bassel-Duby and Department Chairman Dr. Eric Olson while working closely with postdoctoral fellow Dr. Miao Cui – was able to dive into and contribute to some of the most dynamic ongoing scientific efforts at UTSW.

“I knew that I wanted to gain a research experience unlike any other, to make big strides in my science but also to contribute to answering big questions,” said Ms. Duan, the daughter of two University of California-Davis scientists whose postgraduation plans now revolve around applying to M.D./Ph.D. programs. “It’s been great to see that amazing scientists have the time and patience to open their labs up to us and be so welcoming. Drs. Olson, Bassel-Duby, and Cui – my mentors and PIs – have all been incredibly supportive and have really made



Amgen Scholars Anna Patterson and Julian Maceren

this summer worthwhile.”

Late last year, UT Southwestern was awarded a four-year grant from the Amgen Foundation to provide hands-on laboratory experience to undergraduate students through the Amgen Scholars Program.

Only 13 institutions across the U.S. were selected to host these budding biomedical scientists. This year, UT Southwestern – along with Duke, Johns Hopkins, and Yale universities – joined the California Insti-

tute of Technology, Columbia, Harvard, the National Institutes of Health, Stanford, UC Berkeley, UCLA, UC San Francisco, and Washington University in St. Louis in the network. More than 4,200 Amgen Scholars – representing more than 700 colleges and universities worldwide – have participated in this undergraduate program since its inception 12 years ago.

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Dr. Beverly Rothermel

\$2M NIH grant funds Down syndrome clinical research

By Carol Marie Cropper

UT Southwestern has been selected to participate in a major National Institutes of Health (NIH) push to discover new treatments and expand clinical research on Down syndrome.

Dr. Beverly Rothermel, Associate Professor of Internal Medicine and Molecular Biology, will lead UTSW’s effort as Principal Investigator of a five-year research project funded by a \$2 million grant. Nationwide, 25 institutions received grants totaling \$35 million under the NIH program, called Investigation of Co-occurring Conditions Across the Lifespan to Understand Down Syndrome (INCLUDE).

One of Dr. Rothermel’s co-investigators is Dr. Eric Olson, Chairman of Molecular Biology and Director of the Hamon Center for Regenerative Science and Medicine, who is known for his work using gene editing as a potential cure for Duchenne muscular dystrophy. Under the INCLUDE grant, the UTSW research team will investigate the cause of cell-level differences that are seen in Down syndrome patients in the tiny organelles called mitochondria. Specifically, Dr. Rothermel will investigate what effect manipulating the *RCAN1* gene has on these mitochondria.

“This grant will allow me to do exactly what I’ve wanted to do for almost 20 years, which is to look at the effect of this gene that is found on the chromosome linked to Down syndrome,” Dr. Rothermel said.

Down syndrome results when a baby receives all or part of a third copy of chromosome 21, instead of just one chromosome from each parent. Having an extra chromosome also means having extra copies of the genes on it, including the *RCAN1* gene.

Based on Dr. Rothermel’s research, having an extra *RCAN1* gene revs up mitochondrial activity in a way that both increases

Please see NIH on page 6

AAAS IF/THEN Ambassadors selected to serve as role models for girls

By Nyshicka Jordan

Four UT Southwestern faculty members will serve as female role models, inspiring more girls to pursue careers as physicians or scientists.

Drs. Julie Mirpuri, Danielle Robertson, Nina Niu Sanford, and Kirsten Tulchin-Francis are among 125 women nationwide selected recently as AAAS IF/THEN Ambassadors based on applications from academic institutions, companies, and organizations. UT Southwestern is tied with Stanford University for the highest number of Ambassadors from an academic institution.

The program is a national initiative of the American Association for the Advancement of Science (AAAS) and Lyda Hill Philanthropies to encourage girls’ interests in science, technology, engineering, and math (STEM) careers. The IF/THEN title comes from the phrase: “If we support a woman in STEM,



THEN she can change the world.”

“The selection of four of our faculty members as Ambassadors showcases the accomplishments of our talented women faculty and brings honor to UT Southwestern,” said Dr. Helen Yin, UTSW Associate Dean in the Office of Women’s Careers and Professor of Physiology.

Ambassadors were chosen based on contributions to their STEM-related field, experience and abilities in STEM communi-

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MINDFUL FITNESS

Study shows exercise may delay brain deterioration in those at high risk for Alzheimer’s disease.

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SEA OF SCRUBS

UTSW nurse Stephanie Huckaby’s love of her job has multiplied to several family members.

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CREATIVE ENERGY

Employees take top honors with a rain-producing umbrella image and a Kerala mural painting at 19th annual On My Own Time art show.

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Former Associate Dean Kirk named Professor Emeritus

By Amy Stumbris

Dr. Lynne Kirk, an ardent and devoted educator and clinician, has been named Professor Emeritus of Internal Medicine and Family and Community Medicine.

A UT Southwestern faculty member for 30 years, Dr. Kirk has served as Director of the Student Health Service, Associate Dean for Medical Education and Graduate Medical Education, and Associate Chief of the Division of General Internal Medicine. Her research focused on clinical prevention, geriatrics, and medical education.

In geriatrics, her emphasis was on education: "We will never have enough geriatricians to meet the health care needs of our aging population. Thus it is important for all physicians to have the appropriate competence in geriatrics to care for the older patients in their practice, no matter what their specialty," she said.

Dr. Kirk, also a Distinguished Teaching Professor, has published on professionalism and competency-based medical education, focusing on the best ways to train physicians at all levels of medical education – medical school, residency/fellowship, and the continuum of medical education.

"For the past 39 years, Dr. Kirk has been an outstanding clinician, teacher, and mentor for medical students, housestaff, and faculty," said Dr. Craig Rubin, Chief of the Division of Geriatric Medicine, Professor of Internal Medicine, and a Distinguished Teaching Professor.



Dr. Lynne Kirk

"Her distinguished career as a leader in medical education has been recognized locally, statewide, and nationally."

Dr. Kirk credited UT Southwestern's unique culture for allowing her to succeed in her career and then pay it forward to teach and mentor future generations of caregivers.

"I can't imagine an academic health center in this country that is a better place than UT Southwestern to develop one's career. The collegiality, willingness to collaborate, and supportive friendships provide a wonderful infrastructure to accomplish anything you can imagine," she said.

After retiring Sept. 1, Dr. Kirk joined the Accreditation Council for Graduate Medical Education (ACGME) as its first Chief Accreditation Officer. She leads ACGME's Review and Recognition Committee, which evaluates residency and fellowship programs.

In addition to supervising students, residents, and fellows, Dr. Kirk has cared for patients as a board-certified general internal medicine and geriatric physician. She practiced in the Acute Care for the Elderly Unit at William P. Clements Jr. University Hospital and at Parkland Memorial Hospital's Center for Internal Medicine and its resident continuity clinic (in which residents take care of a panel of patients in the outpatient setting over their entire residency).

"I've worked with a series of division chiefs and department chairs who have not criticized, but rather encouraged my wild ideas and supported me in doing things that seemed impossible," Dr. Kirk said. "And I've had so many wonderful colleagues, students, and residents to work with to make these ideas into reality to support the education and patient care activities we provide."

Dr. Kirk received her medical degree from the University of Nebraska School of Medicine in 1977, then completed an internship and residency at Boston University School of Medicine.

Dr. Kirk was President of the American College of Physicians, the national specialty organization for internists, in 2006-2007. She has published on medical professionalism, faculty development, clinical guidelines, and patient education. She chaired the Internal Medicine Residency Review Committee of the ACGME and served as an Associate Program Director in the Internal Medicine Residency Training Program at UT Southwestern.

In 2015, she received the Texas Medical Association Platinum Award, the top honor for its Excellence in Academic Medicine program. The multilevel award program honors academic physicians who are consummate teachers, role models, and medical professionals.

"Lynne is perhaps the most thoughtful, ethical, selfless, and professional individual I have worked with in the last three decades. She is always looking for ways to promote and encourage her students and colleagues," Dr. Rubin said.

Dr. Kirk reflected fondly on her time at UT Southwestern and looks forward to the future.

"When I'm asked what is important to me in my life, I answer 'family, friends, and doing meaningful work,'" Dr. Kirk said. "I am very fortunate to have had all of these in great abundance during my career at UT Southwestern."

Dr. Rubin holds The Margaret and Trammell Crow Distinguished Chair in Alzheimer's and Geriatric Research, the Seymour Eisenberg Distinguished Professorship in Geriatric Medicine, the Sinor/Pritchard (Katy Sinor and Kay Pritchard) Professorship in Medical Education Honoring Donald W. Seldin, M.D., and the Walsdorf Professorship in Geriatrics Research.

More online: To read the full story, go to *Center Times Plus* at utsouthwestern.edu/ctplus.



Dr. David McFadden

Cancer researcher McFadden wins Damon Runyon award

By Lori Sundeen Soderbergh

Dr. David McFadden, Assistant Professor of Internal Medicine and Biochemistry, has received a Clinical Investigator Award from the Damon Runyon Cancer Research Foundation to support his investigation of the cellular metabolism of a particularly challenging type of thyroid cancer.

Dr. McFadden is one of five recipients of the award, which includes three years of funding totaling \$600,000 to support his project, "Identifying Metabolic Vulnerabilities in Hürthle Cell Carcinoma."

The 2004 graduate of UT Southwestern's Medical Scientist Training Program (MSTP) will be mentored for the award by Dr. Steven McKnight, Professor of Biochemistry, and Dr. Ralph DeBerardinis, a Professor of Pediatrics in the Children's Medical Center Research Institute at UT Southwestern and in the Eugene McDermott Center for Human Growth and Development. All three are members of the Harold C. Simmons Comprehensive Cancer Center.

"Hürthle cell carcinoma of the thyroid represents a challenge in the clinic, and the genomes of these cancers suggest that rewired cellular energy metabolism might be an entry point toward developing new therapies," Dr. McFadden said. "I am grateful for the support from the Foundation and for the mentorship from Drs. McKnight and DeBerardinis in support of my team's efforts toward a more complete understanding of altered cellular metabolism in Hürthle cell tumors."

Following graduation from UT Southwestern's MSTP, Dr. McFadden trained at Brigham and Women's Hospital, Massachusetts General Hospital, and Massachusetts Institute of Technology before returning to UTSW in 2015. A member of the International Thyroid Oncology Group, Dr. McFadden has been awarded research grants from the National Institutes of Health, American Thyroid Association, the Disease Oriented Clinical Scholars (DOCS) program at UT Southwestern, and the Cancer Prevention and Research Institute of Texas (CPRIT).

He is the third UT Southwestern faculty member to receive this award, following Dr. DeBerardinis in 2011 and Dr. Deepak Nijhawan, Associate Professor of Internal Medicine and Biochemistry, in 2013.

Dr. DeBerardinis holds the Joel B. Steinberg, M.D. Chair in Pediatrics and is a Sowell Family Scholar in Medical Research.

Dr. McKnight holds the Distinguished Chair in Basic Biomedical Research.

IN MEMORIAM

Dr. Robert McClelland: Professor Emeritus of Surgery provided emergency care to JFK

By Patrick Wascovich

Professor Emeritus of Surgery Dr. Robert N. McClelland, one of the last surviving members of the Parkland Memorial Hospital surgical team who worked on President John F. Kennedy after he was shot in Dallas, died Sept. 10. He was 89.

A nationally renowned surgeon and educator, Dr. McClelland was a dedicated UT Southwestern faculty member for nearly six decades. He was the creator and originating editor of *Selected Readings in General Surgery*, a compilation of scientific papers for surgical residents he began in 1974 that was later circulated internationally by the American College of Surgeons.

"Dr. McClelland had a powerful and enduring impact on the field of surgery and the UT Southwestern community," said Dr. W. P. Andrew Lee, Executive Vice President for Academic Affairs, Provost, and Dean, UT Southwestern Medical School. "A highly skilled and respected mentor, Dr. McClelland always took a personal interest in his students' success. His humble and kind nature earned him the nickname 'Dr. Mac' – a name used by students, residents, and faculty members alike."

At age 34, Dr. McClelland became associated



Dr. Robert N. McClelland

with a great tragedy in American history when he was called into the emergency room at Parkland to care for President Kennedy on Nov. 22, 1963.

Dr. McClelland, who had joined UT Southwestern as an Assistant Professor a year prior to President Kennedy's assassination, was showing his students a surgical video when a knock on the door changed his life. Dr. McClelland and his colleague, the late Dr. William Clark, together entered Trauma Room 1, a small space crowded with the first lady, Secret Service and FBI agents, local law enforcement, and medical personnel trying to save the life of the fatally wounded JFK.

"I stood there kind of dumbfounded for a moment," Dr. McClelland remembered during the 50th anniversary of the assassination. "But then you just move. ... Dr. Malcolm O. Perry, who was leading our efforts, asked me to go to the head of the cart. He said we're going to explore the wound and do a tracheostomy."

Within five minutes, as Dr. McClelland held the President's head in his hands, the mortally

wounded JFK went into cardiac arrest.

Two days later, on Nov. 24, 1963, Dr. McClelland again was thrust into U.S. history as one of the surgeons treating accused assassin Lee Harvey Oswald after he had been fatally shot by Jack Ruby.

Born Nov. 20, 1929, in the East Texas city of Gilmer, Dr. McClelland graduated from UT Austin in 1950 and then earned his medical doctorate from UT Medical Branch in 1954. He served as a U.S. Air Force officer stationed in Germany and completed a residency at Parkland before joining the UT Southwestern faculty in 1962.

The liver surgery program at UT Southwestern began under Dr. McClelland's leadership. He often provided support for surgeons in Dallas who recognized him as a fount of knowledge and experience, particularly in the management of liver disease.

He began *Selected Readings in General Surgery* out of requests from former residents for copies of the papers discussed in a journal club he had started. Subscriptions extended worldwide, and he estimated that at one point, more than 60 percent of the general surgery residents in America read the publication.

A fellow of the American College of Surgeons, Dr. McClelland became the first holder of the Alvin Baldwin, Jr. Chair in Surgery at UT Southwestern. In 2009, the Department of Surgery renamed surgical rotations to honor Dr. McClelland, while the Parkland Surgical Society established the annual McClelland Lectureship in 1990 in his honor. Dr. McClelland also received the Ashbel Smith Distinguished Alumnus award from the UT Medical Branch in Galveston.

More online: To read the full story, go to *Center Times Plus* at utsouthwestern.edu/ctplus.

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NEWS

MAKER

Hooper's microbiology investigations lead to basic research honor

Dr. Lora Hooper, Chair of Immunology, has been selected for a prestigious award from the American Society for Microbiology. The ASM Award in Basic Research recognizes an outstanding scientist whose discoveries have been fundamental to advancing our understanding of the microbial world.

Dr. Hooper is well known for her research on the commensal or "good" bacteria that inhabit the gut – where they aid in diges-

tion and infection control. She is corresponding author of a study published earlier this year in *Cell Host & Microbe* that identified a previously unknown bacteria-killing protein on the skin that requires vitamin A to work. Those experiments, done on human tissue and mice, suggest why vitamin A derivatives are effective treatments for skin diseases, she said.

Dr. Hooper is also a Howard Hughes Medical Institute Investigator, a member of the Center for the Genetics of Host Defense, and a Professor of Immunology and Microbiology. She holds the Jonathan W. Uhr, M.D. Distinguished Chair in Immunology and is a Nancy Cain and Jeffrey A. Marcus Scholar in Medical Research, in Honor of Dr. Bill S. Vowell.



Dr. Lora Hooper

Exercise could slow withering effects of Alzheimer's disease

By James Beltran

Exercising several times a week may delay brain deterioration in people at high risk for Alzheimer's disease, according to a study that scientists say merits further research to establish whether fitness can affect the progression of dementia.

UT Southwestern research found that people who had accumulation of amyloid beta in the brain – a hallmark of Alzheimer's – experienced slower degeneration in a region of the brain crucial for memory if they exercised regularly for one year.

Although exercise did not prevent the eventual spread of toxic amyloid plaques blamed for killing neurons in the brains of dementia patients, the findings suggest an intriguing possibility that aerobic workouts can at least slow down the effects of the disease if intervention occurs in the early stages.

"What are you supposed to do if you have amyloid clumping together in the brain? Right now doctors can't prescribe anything," said Dr. Rong Zhang, who led the clinical trial that included 70 participants ages 55 and older. "If these findings can be replicated in a larger trial, then maybe one day doctors will be telling high-risk patients to start an exercise plan. In fact, there's no harm in doing so now."

The study published last month in the *Journal of Alzheimer's Disease* compared cognitive function and brain volume between two groups of sedentary older adults with memory issues: One group did aerobic exercise (at least a half-hour workout four to five times weekly) and another group did only flexibility training.

Both groups maintained similar cognitive abilities during the trial in areas such as memory and problem-solving. But brain imaging showed that people from the exercise group who had amyloid buildup experienced slightly less volume reduction in their hippocampus – a memory-related brain region that progressively deteriorates as dementia takes hold.

"It's interesting that the brains of participants with amyloid responded more to the aerobic exercise than the others," said Dr. Zhang, Professor of Neurology and Neurotherapeutics and Internal Medicine. "Although the interventions didn't stop the hippocampus from getting smaller, even slowing down the rate of atrophy through exercise could be an exciting revelation."

However, Dr. Zhang notes that more research is needed to determine how or if the reduced atrophy rate benefits cognition.

Dr. Zhang conducted the trial at the Institute for Exercise and Environmental Medicine (IEEM), which is a partnership between UT Southwestern and Texas Health Presbyterian Hospital Dallas. He serves as Director of the Cerebrovascular Laboratory there.

The search for dementia therapies is becoming increasingly pressing: More than 5 million Americans have Alzheimer's disease, and the number is expected to triple by 2050.

Recent research has helped scientists gain a greater understanding of the molecular genesis of the disease, including a UT Southwestern discovery published last year that is guiding efforts to detect the condition before symptoms arise. Yet the billions of dollars spent on trying to prevent or slow dementia have yielded no proven treatments that would make an early diagnosis



Dr. Rong Zhang reviews data from participants in a clinical trial evaluating the effects of exercise and certain medications to preserve brain volume and cognitive abilities.

actionable for patients.

Dr. Zhang is among a group of scientists across the world trying to determine if exercise may be the first such therapy.

His latest research builds upon numerous studies suggesting links between fitness and brain health. For example, a 2018 study showed that people with lower fitness levels experienced faster deterioration of vital nerve fibers in the brain called white matter. Research in mice has similarly shown exercise correlated with slower deterioration of the hippocampus – findings that prompted Dr. Zhang to investigate whether the same effects could be found in people.

Dr. Zhang is leading a five-year national clinical trial that aims to dig deeper into potential correlations between exercise and dementia.

The trial, which includes six medical centers across the country, involves more than 600 older adults (ages 60-85) at high risk of developing Alzheimer's disease. The study will measure whether aerobic exercise and taking specific medications to reduce high blood pressure and cholesterol can help preserve brain volume and cognitive abilities.

"Understanding the molecular basis for Alzheimer's disease is important," Dr. Zhang said. "But the burning question in my field is, 'Can we translate our growing knowledge of molecular biology into an effective treatment?' We need to keep looking for answers."

The *Journal of Alzheimer's Disease* study was supported by the National Institutes of Health. It included collaborations with staff at the IEEM.

Surgical masks as good as respirators for flu and virus protection

By Carol Marie Cropper

Researchers may finally have an answer in the long-running controversy over whether the common surgical mask is as effective as a more expensive respirator-type mask in protecting health care workers from respiratory viruses.

A recent study in *JAMA* compared the ubiquitous surgical (or medical) mask, which costs about a dime, to a less commonly used respirator called an N95, which costs around \$1.

"This study showed there is no difference in incidence of viral respiratory transmission among health care workers wearing the two types of protection," said Dr. Trish Perl, Chief of UT Southwestern's Division of Infec-

tious Diseases and Geographic Medicine and the report's senior author.

Medical personnel are at risk when treating patients with contagious diseases. A large study conducted in a New York hospital system after the 2009 outbreak of H1N1, or swine flu, found almost 30 percent of health care workers in emergency departments contracted the disease themselves. During that pandemic, the U.S. Centers for Disease Control and Prevention (CDC) recommended using the tighter-fitting N95 respirators rather than the surgical masks.

Earlier clinical studies comparing the masks and respirators yielded mixed results, said Dr. Perl, also a Professor of Internal Medicine.

The new study was performed at medical settings in seven U.S. cities. Researchers collected data during four flu seasons between 2011 and 2015, examining the incidence of



Surgical mask

flu and acute respiratory illnesses in almost 2,400 health care workers. The project was funded by the CDC, the Veterans Health Administration, and the Biomedical Advanced Research and Development Authority (BARDA), which is part of the U.S. Health and Human Services Department.

"It was a huge and important study – the largest ever done on this issue in



N95 respirator mask

North America," Dr. Perl said.

In the end, 207 laboratory-confirmed influenza infections occurred in the N95 groups versus 193 among medical mask wearers, according to the study. In addition, there were 2,734 cases of influenza-like symptoms, laboratory-confirmed respiratory illnesses, and acute or laboratory-detected respiratory infections (where the worker may not have felt

ill) in the N95 groups, compared with 3,039 such events among medical mask wearers.

"The takeaway is that this study shows one type of protective equipment is not superior to the other," she said.

Dr. Perl said she expects more studies to arise from the data collected in this report; she now plans to investigate the dynamics of virus transmission to better understand how respiratory viruses are spread.

Dr. Perl holds the Jay P. Sanford Professorship in Infectious Diseases.

More online: To read the full story, go to *Center Times Plus* at utsouthwestern.edu/ctplus.

Tagliabracci honored with NIH New Innovator award

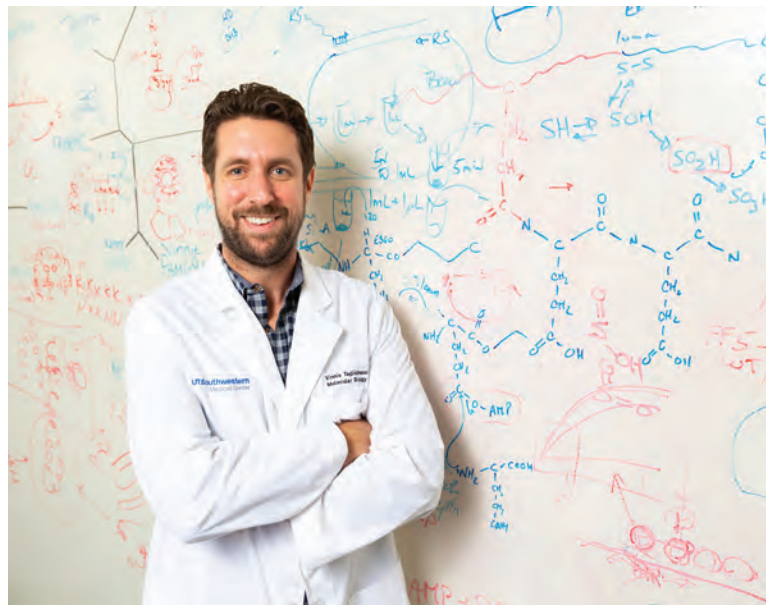
By Deborah Wormser

Molecular biologist Dr. Vincent Tagliabracci is one of 60 researchers across the country selected for an award in a National Institutes of Health program supporting highly innovative science.

His project, "Breathing Life into Dead Enzymes," received a New Innovator award from the NIH Director's High-Risk, High-Reward Research program. The NIH funds the awards for extraordinarily creative scientists to spark scientific discovery by supporting research proposals with transformative potential that might struggle to get traditional funding due to their inherent risk.

"Vinnie has tapped into an exciting and unexplored vein of research in which he is uncovering new families of mysterious enzymes related to protein kinases," said Dr. Eric Olson, Chair of Molecular Biology and Director of the Hamon Center for Regenerative Science and Medicine. "This work exemplifies high-risk, high-reward innovation."

Dr. Tagliabracci studies a group of



Dr. Vincent Tagliabracci

enzymes called pseudokinases. The name derives from their resemblance to the important kinase enzymes. "Kin" is Greek for "to move."

"Protein kinases are enzymes that coordinate nearly every signaling

pathway in human cells, making them a major target for anti-cancer drugs and other therapeutics," said Dr. Tagliabracci, an Assistant Professor of Molecular Biology and a Cancer Prevention and Research Institute

of Texas (CPRIT) Scholar in Cancer Research.

Kinases catalyze the transfer of a phosphate group from the cell's major energy carrier to other molecules in a process called phosphorylation. The "pseudo" comes from the long-held assumption – which Dr. Tagliabracci helped prove wrong – that pseudokinases were inactive due to their lack of catalytic activity.

In studies published in *Cell* and *Science*, the Tagliabracci laboratory found that some pseudokinases are only inactive when viewed in the context of phosphorylation. Phosphorylation is a catalytic reaction – and pseudokinases aren't supposed to do catalytic reactions, he explained.

"No one would detect phosphorylation in them because they do something else. We found that they do an entirely novel reaction for a member of the protein kinase superfamily," he said. His recent studies identified one pseudokinase that does AMPylation, which involves moving an adenosine monophosphate (AMP) molecule onto a protein. Another pseudokinase carries out glutamylation, the transfer

of the amino acid glutamate to a protein. Both pseudokinases are now considered important to cell signaling and to the spread of deadly bacteria.

The glutamylation paper published in *Science* revealed a major mechanism that the bacteria that cause Legionnaires' disease – *Legionella pneumophila* – use to cause the frequently fatal pneumonia.

"We found that glutamylation plays an important role during *Legionella* infection by inhibiting the toxic effect the bacteria usually exert on the host cell. This seems counterintuitive at first, but it is beneficial to *Legionella* to keep the host cell alive and healthy as long as possible, buying time for the bacterium to replicate and extract nutrients," he said.

Dr. Olson holds the Pogue Distinguished Chair in Research on Cardiac Birth Defects, The Robert A. Welch Distinguished Chair in Science, and the Annie and Willie Nelson Professorship in Stem Cell Research.

Dr. Tagliabracci is a Michael L. Rosenberg Scholar in Medical Research.

Pfeiffer earns Pew award to further innate immunity discoveries

By Rachel Stowe Master

UT Southwestern virologist Dr. Julie Pfeiffer has been selected to join the Pew Charitable Trusts' 2019 class of Innovation Fund investigators to launch a joint research project on innate immunity.

Dr. Pfeiffer, Professor of Microbiology, will partner with Dr. Nicole King, Professor of Molecular and Cell Biology at the University of California, Berkeley, to pursue research as one of six pairs of investigators this year. The Pew program, open to alumni of Pew's biomedical programs in the United States, pairs researchers from multiple disciplines to advance scientific discovery and improve human health. The Pfeiffer-King collaboration will receive \$200,000 over two years.

Dr. Pfeiffer, a 2007 Pew biomedical scholar and a Howard Hughes Medical Institute (HHMI) Faculty Scholar, and Dr. King, a 2004 Pew biomedical scholar and an HHMI Investigator, will further their biological studies of aquatic, unicellular organisms called choanoflagellates.

"We will examine innate immune responses in choanoflagellates – unicellular protozoa that are the closest living relatives of animals. Choanoflagellates



Dr. Julie Pfeiffer

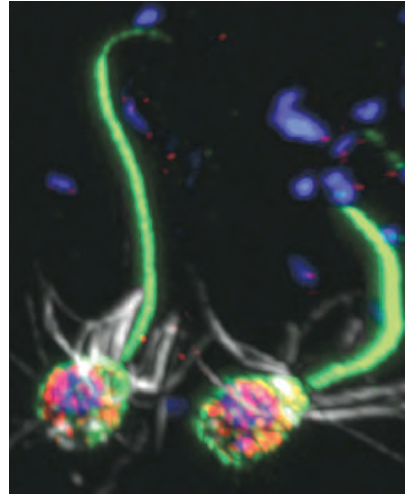
do not have genes required for known pathogen response pathways, so we hope to discover new pathways that may also be operative but undiscovered in animals," Dr. Pfeiffer said. "This award allows us to take some real risks with 'swing for the fences' experiments."

Chair of Microbiology Dr. Michael Norgard said the Pew Charitable Trusts honor is another instance in which Dr. Pfeiffer's bold and progressive research program has garnered recognition from a very distinguished funding

organization.

"Her imaginative research continues to hold exciting promise for all kinds of unforeseen discoveries in cell and molecular biology," Dr. Norgard said.

Dr. Pfeiffer met Dr. King at her first Pew Scholars meeting in Aruba in 2008. "She spoke about her work with choanoflagellates and it was amazing. We kept up with each other over the years at occasional conferences and seminar visits, but I never thought I would enter the choanoflagellate field."



Choanoflagellates

Dr. Pfeiffer described Dr. Arielle Woznica, a postdoctoral researcher in her lab and an HHMI 2018 Hanna Gray Fellow, as a driving force behind the collaboration. While working on her Ph.D. in molecular and cell biology at UC Berkeley, Dr. Woznica did her thesis work on choanoflagellates in Dr. King's lab. She joined Dr. Pfeiffer's lab as a postdoctoral fellow to learn virology and study virus-bacterial interactions in mammalian systems. However, she retained an interest in choanoflagellates

– and found a readily available supply to study in a campus stream adjacent to their UTSW research building.

"One day she wondered whether choanoflagellates are infected by viruses, and if so, how they respond," Dr. Pfeiffer said. "We discussed several ideas and thought it was a great system to explore the origins of innate immunity. Nicole was a familiar and supportive collaborator from the start."

Now the Innovation Fund collaborators hope to make fundamental discoveries in immunity by leveraging the combined expertise of their labs – viruses, bacteria, and innate immunity in Dr. Pfeiffer's lab and choanoflagellates, evolution, and cell biology in Dr. King's lab.

"This project is focused on understanding very basic, fundamental biology. However, insights from studies with model organisms like these have led to important discoveries such as RNA interference," Dr. Pfeiffer said.

Dr. Norgard holds the B.B. Owen Distinguished Chair in Molecular Research.

Dr. Pfeiffer holds the Kern and Marnie Wildenthal President's Research Council Professorship in Medical Science.

Ambassadors Continued from page 1

cation and public engagement via media, classrooms, and public programs, and commitment to inspiring middle school girls to be the next generation of STEM pioneers.

Through the initiative, Ambassadors will connect with girls in person and through various media platforms. The program gives them access to skill-building, media training, and engagement opportunities through February 2021.

Experts will train the Ambassadors in effective communication strategies, such as how to use social media to promote their stories. The initiative is also associated with a new television series, *Mission Unstoppable*, airing on CBS Saturday mornings. The series features successful women in STEM-related careers, including the program's Ambassadors.

"This program is completely aligned with UT Southwestern's goal of enlarging the STEM pipeline in Dallas, Texas, and nationally. The University has invested in many mechanisms to increase and strengthen the diversity pipeline and mitigate racial and gender disparities at all levels," Dr. Yin said. "The AAAS IF/THEN Ambassadors program showcases UT Southwestern, the Ambassadors' credibility, and, most importantly, their skills to improve the institution's brand. This will in turn help improve recruitment of diverse and talented individuals to the institution."

UTSW's Ambassadors shared what attracted them to STEM careers and why this opportunity is important.

Dr. Julie Mirpuri

As a schoolgirl growing up in Hong Kong, neonatologist Dr. Julie Mirpuri was drawn to biology because of something that might make others a bit squeamish.

"In my first class in biology I remember dissecting pig hearts, and I was just fascinated by it," said Dr. Mirpuri, Assistant Professor of Pediatrics. "That science came naturally and I loved doing it."

Dr. Mirpuri's research is focused on neonatal microbiome development. As an IF/THEN Ambassador, she hopes to expose girls to research and teach them that successful careers are attainable. The mission to dispel gender bias is a lesson also important to impress upon boys, she added.

"I think it was intervention that I have two sons because it's part of my duty to show them what a woman can be," she said. "You have to have boys and men accept that women are just as strong and just as capable as they are if we're going to correct gender bias and disparities."

Dr. Kirsten Tulchin-Francis

As a teen, bioengineer Dr. Kirsten Tulchin-Francis enjoyed taking tests. It was an Armed Services vocational exam she took on a fluke that partly directed her career path: The test recommended biomedical engineering.

"I didn't even know what biomedical engineering was, but that's when I first started to look into it," said Dr. Tulchin-Francis, Assistant Professor of Health Care Sciences.

That exploration eventually turned into her becoming the Division Director of Movement Science at Texas Scottish Rite Hospital for Children, where she specializes in gait and motion analysis and works closely with orthopedic surgeons.



Dr. Mirpuri



Dr. Tulchin-Francis

"I feel very strongly that there's not enough female role models for women and girls going into STEM-related fields. I am very passionate about sharing my personal story about how I went into engineering, and ultimately into clinical research, because I don't think they have a good exposure to it," she said.

Dr. Nina Niu Sanford

From the very beginning, radiation oncologist Dr. Nina Niu Sanford had access to a strong female role model in a STEM field. Her mother, a primary care doctor, set the stage.

Dr. Sanford, Assistant Professor of Radiation Oncology, immigrated to the United States from Beijing when she was 3 years old. Her mother was a practicing physician in China, but had to retrain upon moving to the U.S. while at the same time raising a young daughter.

Now a mother to two young daughters herself, Dr. Sanford said one of the reasons she wanted to be an Ambassador is that she doesn't want girls to believe they can't have families and pursue demanding careers at the same time.

"One mission I like about the IF/THEN program is that it specifically targets students who may have less exposure to science careers. Particularly here in Dallas, we do see a very diverse patient population, and I think having diverse health care providers is incredibly important," she said.

Dr. Danielle Robertson

Scientist Dr. Danielle Robertson said she views mentorship as an opportunity. She's eager to use the IF/THEN ambassadorship to reach girls who don't know what options are available. It's an experience she can relate to from growing up in a small town in the state of Washington.

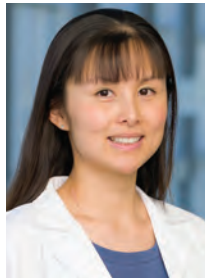
"Many times there aren't avenues for students in these communities to know what is out there and to pursue those programs, and they can't pursue it if they don't know about it," said Dr. Robertson, Associate Professor of Ophthalmology.

Although she knew she wanted to pursue health care from an early age, Dr. Robertson never imagined being a scientist at a university. Now she's a Principal Investigator in her own lab where she performs clinical, translational, and basic research.

"I'm a scientist because it's exciting and it's fun," she said. "We're not the old stereotype, we're not just 'nerds.' We're exciting, we're cool. Girls need to see that these are great careers that help people and society."

Dr. Sanford is a Dedman Family Scholar in Clinical Care. Dr. Yin holds the Margaret Yin Chair for the Advancement of Women Faculty, and the Peter and Jean D. Dehlinger Professorship in Biomedical Science.

More online: To read the full story, go to *Center Times Plus* at utsouthwestern.edu/ctplus.



Dr. Sanford



Dr. Robertson



UT Southwestern's first cohort of Amgen Scholars for 2019

Scholars

Continued from page 1

"Designation as an Amgen Scholars institution reaffirms UT Southwestern's international stature as an elite biomedical research institution," said Dr. Andrew Zinn, Dean of the Graduate School of Biomedical Sciences. "It also augments our highly successful Summer Undergraduate Research Fellowship Program, which plays a key role in our efforts to recruit outstanding undergraduates nationally to do their Ph.D. or M.D./Ph.D. training here and become future leaders in biomedical science."

The Amgen Scholars and Summer Undergraduate Research Fellowship programs at UT Southwestern are both led by Dr. Nancy Street, Graduate School Associate Dean.

After absorbing their up-close summer experiences, members of UTSW's initial cohort of Amgen Scholars are almost evenly split between pursuing doctorate programs or combined initiatives like the Medical Scientist Training Program at UTSW.

"It has been wonderful having Lauren in our lab this summer and we appreciate that the Amgen Scholars Program made it possible," Dr. Bassel-Duby said. "She has been working closely with Dr. Cui on a project that studies the molecular mechanism contributing to heart regeneration. Lauren has been exposed to cutting-edge technologies in molecular biology as well as learning about heart growth and repair, and her deep motivation, curious mind, and hardworking nature have brought positive energy to the lab and pushed our research project forward."

The first wave of Amgen Scholars on campus includes undergrads from as far away as New York, California, and Puerto Rico as well as three selected from Texas colleges and universities. In all, 12 UTSW Departments, Divisions, or Centers participated, with the Harold C. Simmons Comprehensive Cancer Center and the Department of Radiation Oncology hosting three Scholars each.

"The Amgen Scholars Program

continues to make a difference by providing undergraduates at any college or university with a summer research opportunity at one of the world's premier institutions, including at UT Southwestern," said Dr. Scott Heimlich, Vice President of the Amgen Foundation. "We are proud to support the institutions and faculty that make this program possible, and even more pleased that the program's 4,200-plus alumni are pursuing degrees and careers across a wide variety of biomedical fields."

Other members of UT Southwestern's first cohort of Amgen Scholars and their undergraduate schools included: Katherine Floyd, Clemson University; Janis Iourovitski, California Polytechnic State University-San Luis Obispo; Iancarlos Jimenez, University of Puerto Rico-Rio Piedras; Riley Kelch, The Ohio State University; Julian Maceren, University of Rochester; Clayton Mansel, William Jewell College; Emma Parks, Carnegie Mellon University; Anna Patterson, University of Wisconsin-Madison; Manuel Quinones Perez, University of Puerto Rico-Mayaguez; Martha Marquez Ramirez, University of California-Berkeley; Jayesh Sharma, University of Southern California; Aleya Shedd, UT San Antonio; Elaine Xu, Carnegie Mellon University; Elva Ye, UT Austin; and Cecilia Yip, Austin College.

Dr. Olson, also Director of the Hamon Center for Regenerative Science and Medicine, holds the Pogue Distinguished Chair in Research on Cardiac Birth Defects, The Robert A. Welch Distinguished Chair in Science, and the Annie and Willie Nelson Professorship in Stem Cell Research.

Dr. Zinn holds the Rolf Haberecht and Ute Schwarz Haberecht Deanship of the UT Southwestern Graduate School of Biomedical Sciences.

More online: To read the full story, including information about each Scholar's area of research over the summer, go to *Center Times Plus* at utsouthwestern.edu/ctplus.

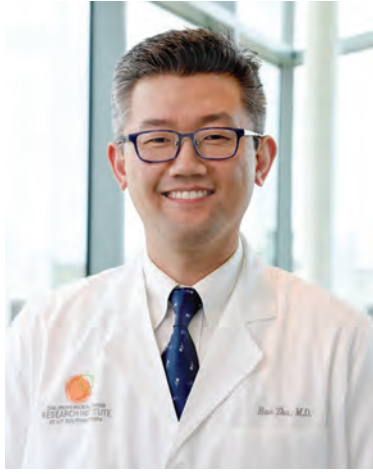
Zhu appointed to Wildenthal Professorship in pediatric research

By Nyshicka Jordan

Dr. Hao Zhu spends days in his lab trying to uncover the mysteries of the liver. The physician-scientist is studying the connection between liver regeneration and liver cancer in hopes that unmasking the role of different cell types in the liver could one day lead to averting cancer in the organ or improved treatments to fight chronic liver disease, which has a poor survival rate.

"If we know a cell is more at risk of turning into cancer, then we can focus on how to limit growth of the cell for cancer prevention," said Dr. Zhu, Associate Professor with the Children's Medical Center Research Institute at UT Southwestern (CRI) and of Internal Medicine and Pediatrics at UT Southwestern.

Dr. Zhu's research efforts have led to his appointment as the inaugural holder of the Kern Wildenthal, M.D., Ph.D. Distinguished Professorship in Pediatric Research. Dr. Wildenthal, President



Dr. Hao Zhu

Emeritus, served as the second President of UT Southwestern from 1986-2008. Under his leadership, UT Southwestern more than quintupled in size and emerged as one of the leading medical institutions in the world.

"It is a particular honor for Hao

to receive the Distinguished Professorship given the remarkable impact that Dr. Wildenthal had on both UT Southwestern and Children's Medical Center. Hao is a fitting choice because of the innovative way he is improving our understanding of the relationship between chronic tissue injury and cancer," said Dr. Sean Morrison, Director of CRI, Professor of Pediatrics, and a Cancer Prevention and Research Institute of Texas (CPRIT) Scholar in Cancer Research.

Modern lifestyles have made liver damage and disease a more common problem for Americans, said Dr. Zhu, also a CPRIT Scholar in Cancer Research.

"Many have had the misconception that only people who drank heavily had liver problems, but now a huge number of people have liver problems because of over-nutrition, which can lead to diabetes, fatty liver disease, and cirrhosis. It's a bit like cardiovascular disease for the upcoming future – liver disease is emerging as a vexing health

problem for the general population," he explained.

People with liver damage are more prone to cirrhosis and liver cancer. Cancer is rarely found in the liver without a history of chronic damage, yet researchers don't fully understand how this injury increases cancer risk.

Because the liver can regenerate, however, Dr. Zhu wants to better understand how regeneration might promote or suppress cancer development.

One of the projects Dr. Zhu's team is working on involves using genetic screens to discover new pathways that can augment the ability of the liver to heal itself. Researchers now have the ability to examine hundreds of genes to identify the ones that are critically important for tissue regeneration. The Zhu lab will try to find out if enhancing liver healing and regeneration will reduce cancer development.

His team is also closely studying the special case of polyploid cells – large cells with multiple copies of the genome

– that occupy 50 to 80 percent of the liver. Researchers believe these extraordinary cells regenerate like normal cells but are protected from getting cancer. Dr. Zhu is investigating if the cells can be exploited for liver cancer prevention.

"One of the reasons I am attracted to the liver is that I've always been fascinated by the juxtaposition of things that regenerate really well and things that get cancer. They use the same machinery, but one is used for good and one is used for evil – and I liked thinking about that interplay. We want to find out if we can disassociate the two processes so that we promote one but not the other," he said.

Dr. Morrison is a Howard Hughes Medical Institute Investigator and holds the Kathrynne and Gene Bishop Distinguished Chair in Pediatric Research at Children's Research Institute at UT Southwestern, and the Mary McDermott Cook Chair in Pediatric Genetics.

GIFTS FOR UT SOUTHWESTERN

Moncrief family gift furthers brain tumor research program

Thanks to gifts totaling \$3.2 million from W.A. "Tex" Moncrief Jr. and affiliated family foundations, a collaborative research team at UT Southwestern's Harold C. Simmons Comprehensive Cancer Center is testing new therapies for glioblastoma, an aggressive form of brain cancer.

Dr. Elizabeth Maher, Director of UT Southwestern's translational research program in neuro-oncology, is helping to lead the drive toward a cure for glioblastoma through the development of unique mouse models, made possible through this support.

Through the years, gifts from the Moncrief family have supported UTSW buildings, programs, and a distinguished chair in Dallas, as well as enabled the growing clinical presence in Tarrant County through support of the UT Southwestern Moncrief Cancer Institute and the UT Southwestern Monty and Tex Moncrief Medical Center in Fort Worth. Their latest gift was made in honor of Tex's son, Charlie, to initiate a unique mouse study, the Charlie Moncrief Glioblastoma Mouse Program.

"This transformational research will break down a major barrier in the search for effective treatments for glioblastoma by enabling Dr. Maher and her team to study basic mechanisms of tumor growth and to test new treatments through a new model system," said W.A. "Tex" Moncrief Jr.

According to the National Cancer Institute, glioblastomas are the most common type of brain cancer in adults and remain one of the most challenging cancers to treat. Despite treatment with chemotherapy and radiotherapy, the median survival time is less than two years.

"This gift is a game changer in the search for a cure for glioblastoma. It provides an opportunity for our team to scale the mouse models program up to a level that will enable critically important scientific investigation on tumors derived directly from patients and provide a unique platform for testing new and promising treatments before they go into clinical trials," said Dr. Maher, Professor of Internal Medicine and Neurology and Neurotherapeutics.

Dr. Maher holds the Theodore H. Strauss Professorship in Neuro-Oncology.

Sweetheart Ball raises \$2.4 million for UTSW heart research and care

The 2018 Sweetheart Ball marked a 37-year partnership of giving that has been instrumental in UT Southwestern's growth and development in becoming one of the nation's top-ranked cardiology programs. Last year's gala raised a record-breaking \$2.4 million, including \$1.2 million from the event and \$1.2 million in matching

funds that have been provided to UT Southwestern every year since the event's inception.

Founded in 1981 by a group of civic-minded women committed to battling the nation's leading cause of death, the Sweetheart Ball has raised almost \$30 million for cardiovascular research and care at UT Southwestern.

"I was honored to have been given the opportunity to help others live a healthier life," said Lee Ann White, 2018 Sweetheart Ball Chair. "We are all too familiar with the toll that heart disease takes on our loved ones. When I was a teen, my beloved father suffered from heart disease and had a heart attack. If he had access to the advances in cardiovascular care that exist today, his quality of life would have probably been much different. Together with the passionate supporters of the Sweetheart Ball, we are helping to change the future for other families."

Haberechts' gift of \$500,000 creates Chair in Medical Informatics

Dr. Rolf Haberecht and his wife, Ute Schwarz Haberecht, have given \$500,000 to establish the Haberecht Family Chair in Medical Informatics, in Honor of DuWayne Willett, M.D., to improve the administration of care and advance the study of human diseases, including brain-related illnesses.

Dr. Willett is Chief Medical Informatics Officer for the UT Southwestern Health System. His job is to ensure that UTSW information technology systems work to meet clinical, patient, and communication requirements.

"This gift affirms the value of medical informatics as a discipline and the decision of those physicians, nurses, and other clinicians who've chosen to enter the field," said Dr. Willett, also a Professor of Internal Medicine who specializes in general and noninvasive cardiology. "I am deeply grateful for this generous gift from the Haberechts, who have spent much of their lives inspiring others."

"Ute and I are pleased to invest in the future of medical informatics at UT Southwestern by making a gift that was inspired by our deep respect for Dr. Willett," Dr. Haberecht said. "Today's patient care is being driven by technology, and the advantages are huge. Informatics and greater access to data are changing the way health care professionals collect and leverage data and can be used to improve health care safety, outcomes, and quality on a larger scale."

Pechar gift to further pediatric MS research

After years of suffering from debilitating headaches and numbness, Maxine Pechar was finally diagnosed with multiple sclerosis (MS) in her 50s. The disease affects the central nervous system and is marked by attacks and remissions, as well as symptoms that appear and disappear.

When Mrs. Pechar started having tremors, she was referred to UT Southwestern MS specialist Dr. Benjamin Greenberg.

Mrs. Pechar and her husband, Ed, are grateful for the more than 10 years of extraordinary care that she has received from Dr. Greenberg, an internationally recognized expert in treating autoimmune disorders of the central nervous system. In response, the Pechars recently made a \$500,000 gift to UTSW's Peter O'Donnell Jr. Brain Institute to support Dr. Greenberg's MS research.

"This research is going to fundamentally change our understanding of the disease, give a new mechanism for tracking children's responses to therapy, and help to equip our children with the tools they need to succeed academically, despite dealing with a chronic medical illness that can attack their brain," said Dr. Greenberg, Professor of Neurology and Neurotherapeutics and Pediatrics.

Dr. Greenberg is a Cain Denius Scholar in Mobility Disorders.

Ellis Skinner and his business fund multiple myeloma research

In October 2009, when Ellis Skinner was diagnosed with multiple myeloma, an incurable type of bone marrow cancer, he turned to UT Southwestern for care. To help improve outcomes for future patients, he and the management of the Ellis M. Skinner Co. made a \$200,000 gift to support Dr. Larry Anderson's multiple myeloma research at the Harold C. Simmons Comprehensive Cancer Center.

"You can't really apply the word 'cure' to multiple myeloma yet," said Dr. Anderson, Associate Professor of Internal Medicine in the Division of Hematology and Oncology and Mr. Skinner's oncologist. "But we're hoping with further research and combinations of immunotherapy and other forms of myeloma therapy that we can get there."

Multiple myeloma will almost always come back, Dr. Anderson said. Presently, Mr. Skinner has had a good response to treatment for over nine years and has been in remission for over five years.

"Cancer is the worst thing and the best thing that ever happened to me," Mr. Skinner said. "It makes me appreciate everyone and everything. It made me think about what the real need is out there and inspired me to give back. I hope Dr. Anderson finds a cure and develops drugs – particularly immunotherapy drugs – that will turn multiple myeloma into a chronic illness rather than a death sentence."



Dr. Greenberg

Sons of the Flag gives \$100,000 for burn surgery fellowship

UT Southwestern received a \$100,000 gift from Sons of the Flag, an organization that supports innovative research and medical care to help military and first-responder burn survivors. The gift will fund the Burn Fellowship at UT Southwestern, which prepares the next generation of specialists to advance the field of burn care.

Founder and President/CEO Ryan Parrott established Sons of the Flag in 2012 after experiencing a series of life-changing events. While serving in Iraq in 2005, Mr. Parrott was riding atop a Humvee in enemy territory when his vehicle was hit by an improvised explosive device (IED). With his face and arms covered in first- and second-degree burns, he witnessed his fellow team members suffer devastating burns and blasts that would ultimately prove to be lifelong injuries.

It was Mr. Parrott's disappointment with the lack of research advancements and gaps in services for burn care that fueled his passion to change the future for burn survivors through his organization. Sons of the Flag has since supported UT Southwestern's Burn Fellowship with gifts totaling \$300,000.

Simmons gift funds women's urology research

Dallas businesswomen D'Andra Simmons and her mother, Dee, recently gave \$100,000 to support the research of Dr. Philippe Zimmern, an international expert on women's urologic health. As Professor of Urology at UT Southwestern, Dr. Zimmern is investigating new treatments for common pelvic floor disorders that can significantly reduce a woman's quality of life.

"It's not easy to talk about urinary incontinence, frequent urinary tract infections, and vaginal prolapse," said D'Andra, known for her role in the "Real Housewives of Dallas" reality television series. "It's embarrassing, and many women suffer in silence."

D'Andra was born with a rare urinary condition that has caused pain and discomfort throughout her life. At age 4, she underwent the first of many surgeries and sought help for years from various specialists to no avail – until she met Dr. Zimmern.

Dr. Zimmern often sees patients who are in severe pain and desperate for effective treatments. "For a long time, we've counted on antibiotics to treat chronic conditions, but they no longer work because some women develop allergies or resistance to them," he said. "Through this research, we hope to develop alternative forms of treatment."

Dr. Zimmern holds the Felecia and John Cain Chair in Women's Health, in Honor of Philippe Zimmern, M.D.



Dr. Zimmern



Dr. Willett



Dr. Anderson

With a sea of scrubs, nursing runs in Huckaby family's blood

By Ashley Green-Jones

When Stephanie Huckaby looks into the future, to all the lives her children will touch, she feels proud.

Mrs. Huckaby is Director of Nursing, Inpatient Surgical Specialty Services at UT Southwestern. Carrying on the family tradition she started, all three of her children became nurses. On top of that, two of them (sons) married nurses. You might say nursing runs in their blood.

In reality, Mrs. Huckaby never pressured her children to become nurses. "You have to want to be a nurse," she said. "Nursing's very stressful. It's a life-and-death situation every day."

"As they were growing up, I didn't try to persuade them into one career or another," said Mrs. Huckaby, whose own mother was a stay-at-home mom married to an electrical engineer. "I told them they could do whatever they wanted; you just have to put your mind to it."

But she is clearly pleased. "To have six of us in one family all turn out to be registered nurses just blows my mind. I am so proud of my children and the thousands of lives that they're going to touch over their lifetime," she said.

Start of a family legacy

Mrs. Huckaby, who lives in Red Oak

with her husband, has been a nurse for almost 27 years now. She graduated from Navarro College in Corsicana, Texas, in 1993, came to UT Southwestern as a Nurse Manager at Zale Lipshy Pavilion – William P. Clements Jr. University Hospital in 2001, and earned a promotion to Nursing Director, Inpatient Surgical Specialty Services in 2009.

The next year, her oldest son, Jeremy Cronin, became the first to follow in her footsteps. His wife, Chelsea, is also a nurse. Both work at Methodist Charlton Medical Center in Dallas.

Then came Hayden in 2018. He is now a pulmonary/telemetry nurse at UT Southwestern's Clements University Hospital and is married to Courtney, also a nurse there. Together, they and Mrs. Huckaby make up a family trio at UTSW.

The most recent recruit to the Huckaby nursing team achieved a milestone in May, as the last of Mrs. Huckaby's children, daughter Kaley, graduated from college and became a registered nurse. She is working on a medical-surgical nursing residency at Methodist Charlton.

In a family clearly unafraid of tradition, Kaley joined her mother, two brothers, and both sisters-in-law as a Navarro College alum.

"When my daughter became the last one to complete a nursing degree, I was really blown away," Mrs. Huckaby said.



From left: Family members Hayden Huckaby, Courtney Huckaby, Stephanie Huckaby, Kaley Huckaby, Chelsea Cronin, and Jeremy Cronin are all nurses.

Detours before nursing

It didn't always look like this would happen.

Kaley worked as a diet clerk in UTSW's Department of Clinical Nutrition for three years before returning to school.

Brother Hayden initially pursued a bachelor's degree in computer programming.

"As a child my main hobby was

playing video games, so I thought when I grew up I wanted to be somebody who made games," he explained. "I decided not to continue with it after learning how completely disengaging that line of work is."

But Hayden continued to juggle college classes while putting in hours at a grocery store. His mom recommended a patient transporter position at UT Southwestern, thinking it would

offer more flexibility.

"Spending a year in transport was a very telling experience," Hayden said. "Getting to interact with the nurses daily, the patients, and just seeing how everyone worked together in the units was great. The firsthand experience of what actually happens is very different compared to listening to your family members describe it."

More Huckaby nurses?

The next generation of Huckabys may get even more of that special humor. Mrs. Huckaby has four grandchildren, and two have already expressed interest in the field.

"My mother has been such a big influence on all of us. To see her start as a medical-surgical floor nurse and work her way into a leadership position is an inspiration," Kaley said. "She has worked incredibly hard in her career and has shown us growing up how much becoming a nurse has a huge impact on your life."

"We couldn't help but follow in her footsteps."

More online: To view a video on this story, go to *Center Times Plus* at utsouthwestern.edu/ctplus.



SECC charity representatives describe their programs to employees.

Turning compassion into action: UTSW celebration kicks off SECC campaign

By Amy Stumbris

On Oct. 3, the UT Southwestern campus community kicked off the 2019 State Employee Charitable Campaign (SECC) with a goal of raising \$400,000 for hundreds of charities.

The annual campaign, now in its 26th year, provides UTSW faculty and employees the unique opportunity to participate in a workplace giving campaign – the only statutorily authorized campaign of its kind for state and higher education agencies. Giving through the SECC is easy, effective, and cost-efficient. Contributions help improve the quality of life for people locally, nationally, and worldwide. Employees can select from more than 500 state-vetted charities.

"I came to the area today to see what charities might be helping people with special needs," said Daphne Fuerte from the Department of Ophthalmology. "I have some friends and family members with special needs, and I hope to find a charity to give to. It's nice that there's so much information brought right here to campus for us."

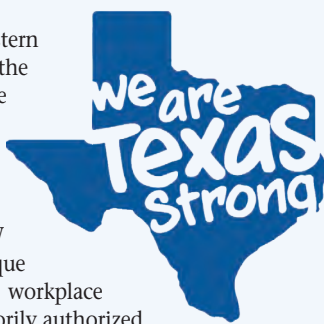
The SECC campaign runs Oct. 3-Nov. 30, with a statewide theme this year of "Texas Strong."

"Texas Strong is pulling together. We give because we care," said DeWotta Gossett, Chair of the State of Texas' SECC Local Employee Committee and a member of UT Southwestern's SECC Committee. "UT Southwestern's State Employee Charitable Campaign is a great platform for employees to come together and give back."

The kickoff event on Eugene McDermott Plaza offered free food, giveaways, and a chance to meet some of the charities involved in the SECC. Additional traveling kickoff events will happen throughout the campaign, and departments on campus will hold fundraising activities of their own.

Visit utsouthwestern.edu/secc2019 for updates including department participation rates, prize drawings, and employee testimonies.

More online: Check out more photos on *Center Times Plus* at utsouthwestern.edu/ctplus.



Obesity Continued from page 1

that put so much leptin into circulation that it overwhelms the brain's leptin receptors, he explained. Using an antibody to neutralize some of that leptin nudges the brain's receptors to start working again so they can recognize the remaining leptin, he said.

Once it was clear that adding more leptin made obese mice fatter, Dr. Scherer approached colleagues at the UT Health Science Center at Houston to help design an antibody that could reduce, but not completely eliminate, the excessive leptin levels typically found in the obese state.

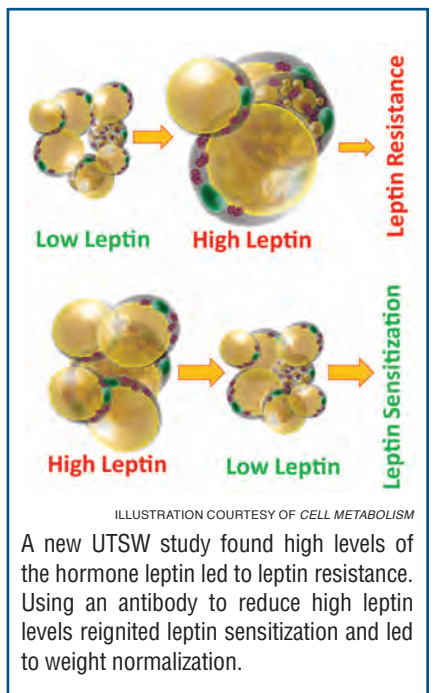
Although more testing is needed, "I'm truly excited about the clinical potential this finding has," Dr. Scherer said. "This is a brand-new tool. A reduction in obesity would decrease both cardiovascular disease and cancer incidence. Most importantly,

it would be a potent anti-diabetic approach, independent of any weight loss associated with the treatment."

Dr. Shangang Zhao, a postdoctoral researcher, was first author of the study. The study was funded by the National Institutes of Health, the Robert A. Welch Foundation, and the Fonds de Recherche du Québec-Santé (FRQS) of Canada.

Dr. Scherer holds the Gifford O. Touchstone, Jr. and Randolph G. Touchstone Distinguished Chair in Diabetes Research.

More online: To read the full story, go to *Center Times Plus* at utsouthwestern.edu/ctplus.



NIH Continued from page 1

the potential for oxidative damage and at the same time reduces the ability of cells to repair damaged mitochondria. Over time, this may contribute to premature aging, early Alzheimer's disease, and other health problems often seen in Down syndrome.

The grant will allow her to test her theory that mitochondria, the powerhouse organelles inside cells, are hyperactive in Down syndrome, eventually damaging themselves. She also plans to use CRISPR-Cas9 gene-editing techniques to remove the extra copy of *RCAN1* to see how the deletion impacts Down syndrome-related symptoms. (A 2018 study by Dr. Rothermel, published in *Circulation Research*, reported that reducing *RCAN1* restored normal mitochondrial function in the stem cells being studied.)

In a third branch of her research, Dr. Rothermel will test whether compounds that inhibit *RCAN1* can restore normal mitochondrial function. One target for her research is the common antidepressant fluoxetine (brand name Prozac), already given off-label by some parents to children with Down syndrome. Although fluoxetine is widely known as a selective serotonin reuptake inhibitor (SSRI), it can also have direct effects on mitochondria, according to Dr. Rothermel.

About 1 in 700 babies are affected by Down syndrome, resulting in about 6,000 infants born each year in the U.S.

with the condition, according to the Centers for Disease Control and Prevention.

"Individuals with Down syndrome are both affected by and protected against many of the conditions that afflict the general population," NIH Director Dr. Francis S. Collins said when announcing the INCLUDE grants. "By improving our understanding of the basic biological mechanisms of Down syndrome, and making clinical trials more accessible and specifically tailored to individuals with Down syndrome, we expect that research from the INCLUDE project will benefit everyone."

INCLUDE was established in June 2018 with \$22.2 million in grants, boosting total NIH research funding for Down syndrome by 60 percent last fiscal year. This year's round of grants added \$35 million.

More spending on Down syndrome research is welcome news to Down syndrome parents and advocates, said Jennifer Ford, executive director of the Down Syndrome Guild of Dallas, a group that works to provide resources and support to affected families.

"I think this is so great; it was one of the least-funded conditions under NIH," Mrs. Ford said.

The number of people living with Down syndrome has increased in recent years, both because families are having children at later ages – raising the risk

of genetic error – and because the congenital heart defects common in the syndrome can now be corrected surgically. In the past 25 years, the lifespan for someone with Down syndrome has doubled, from 30 to 60 years, according to the NIH.

As Down syndrome patients live longer, later-life health issues are manifesting themselves. According to the NIH, about 75 percent of those with Down syndrome eventually experience cognitive decline resembling Alzheimer's disease.

At the same time, said Dr. Rothermel, those with Down Syndrome usually don't develop diseases such as atherosclerosis or solid tumors, suggesting that heightened mitochondrial activity might also have a protective effect.

"This could have broader implications that might have to do with aging as well," Dr. Rothermel said. "I'm really excited about the potential for this research."

Other co-investigators who will work with Dr. Rothermel include Dr. Chun-Li Zhang, Professor of Molecular Biology, and Dr. Luke Szewda, Professor of Internal Medicine.

Dr. Olson holds The Robert A. Welch Distinguished Chair in Science, Pogue Distinguished Chair in Research on Cardiac Birth Defects, and the Annie and Willie Nelson Professorship in Stem Cell Research.

Dr. Zhang is a W.W. Caruth, Jr. Scholar in Biomedical Research.

Medical School alumni reminisce, connect at 2019 reunion

By Julie Henley

UT Southwestern Medical School alumni from the Classes of 1969, 1974, 1979, 1984, 1989, 1994, 1999, and 2009 gathered on campus last month to reconnect with fellow graduates and their alma mater.

The multiday reunion event kicked off with a special dinner in honor of the Class of 1969, which celebrated its 50-year reunion. Attendees shared fond memories of their time at UT Southwestern and stories about revered instructors.

Over the subsequent days, all reunion classes were treated to Southwestern Medical District tours. They visited William P. Clements Jr. University Hospital, Parkland Memorial Hospital, and the Simulation Center in West Campus Building 3. Highlights of the visits included trying out the Simulation Suture Lab, stepping inside spacious patient rooms at Clements University Hospital, and exploring Parkland's Emergency Department.

Throughout the weekend, alumni were invited to attend talks with UT Southwestern executive leadership, including Dr. Daniel K. Podolsky, President; Dr. W. P. Andrew Lee, Executive Vice President for Academic Affairs, Provost, and Dean of the Medical School; and Dr. John Warner, Executive Vice President for



Graduates of the Class of 1969 gather for a group photo.

Health System Affairs. They discussed education, research innovations, and hospital expansions. On the last day of the event, graduates heard from fellow alumni Dr. Angela Mihalic (1995), Dean of Medical Students and Associate Dean of Student Affairs, and Dr. Joseph Chang (1999). Alumni were also put to the test in the Team Based Learning Center with Dr.

Robert Rege, Associate Dean for Undergraduate Medical Education.

The reunion celebration wound down with a Texas-sized family barbecue in the Bryan Williams, M.D. Student Center. After enjoying their meals, alumni reminisced over old yearbooks and stepped up to a photo booth for a picture to commemorate the weekend.

Relive the memories

To see more pictures from reunion weekend, visit [facebook.com/utswalumni](https://www.facebook.com/utswalumni) and share your own reunion experience using #UTSWalumni and #UTSW4life. Continue to stay in touch by using the online Alumni Directory at engage.utsouthwestern.edu/alumni-directory and watching your email inbox for invitations to upcoming events.

Attendees also had the opportunity to view the College Commons, which replaced the former study carrels.

Dr. Lee holds the Atticus James Gill, M.D. Chair in Medical Science.

Dr. Podolsky holds the Philip O'Bryan Montgomery, Jr., M.D. Distinguished Presidential Chair in Academic Administration, and the Doris and Bryan Wildenthal Distinguished Chair in Medical Science.

Dr. Warner holds the Jim and Norma Smith Distinguished Chair for Interventional Cardiology, and the Nancy and Jeremy Halbreich, Susan and Theodore Strauss Professorship in Cardiology.



Dr. Kyle Krohn, Class of 1989, and other alumni experience the Team Based Learning Center.



Dr. David Griffith, Class of 1984, checks the pulse of a high fidelity patient simulator during a tour.



An alumnus tries his hand in the Simulation Center operating room.



Drs. Lauren Hobratch, Class of 1978, and Karen Roberts, Class of 1979, share a laugh while touring William P. Clements Jr. University Hospital.

Professorship established to honor Dr. Bruce Carr's mentorship

By Brittany Worley

Gratitude often inspires giving back to the organizations and causes that have impacted one's life. Such is the case for Dr. Bruce Carr with a new Professorship named in his honor.

In the summer of 2018, several grateful former fellows, along with family and friends, established the Professorship in Reproductive Endocrinology and Infertility, in Honor of Bruce R. Carr, M.D., through Southwestern Medical Foundation. This Professorship will provide funding to a leading faculty member in reproductive endocrinology at UT Southwestern Medical Center.

"Bruce is grateful that his program has attracted the best and brightest," said Mrs. Carr, a Chaplain at UT Southwestern. "When his 70th birthday was approaching, several of his fellows mentioned that they wanted to do something really special to honor him." Mrs. Carr surprised her husband with the good news at their 50th wedding anniversary celebration.

The mutual admiration and respect between Dr. Carr and his former



Dr. Bruce Carr and his wife, Phyllis

fellows is palpable.

"Dr. Carr is a distinguished member of the UT Southwestern faculty and is creating a remarkable legacy," said Dr. Daniel K. Podolsky, President of UT Southwestern. "He has provided the highest quality of care to his patients and trained generations of fellows who have impacted the specialty around

the world. This Professorship in his honor is wonderful recognition of his exceptional career."

Dr. Carr has dedicated his professional career to UT Southwestern. After completing his residency in obstetrics and gynecology at UT Southwestern, he served at the 5th General U.S. Army Hospital in Bad Cannstatt, Germany.

He then returned to UT Southwestern, where he completed a fellowship in reproductive endocrinology and infertility and joined the faculty in 1980. He is currently Professor of Obstetrics and Gynecology and Director of the Reproductive Endocrinology and Infertility Fellowship Program.

"I was ultimately very impressed with the environment at UT Southwestern," Dr. Carr said. "There was great potential to learn. The Medical Center had a high clinical load, and I could see that leadership was investing deeply in quality research."

His office is lined with rows of his 400 bound publications. He has written four textbooks – one of which was translated into Russian – and a study guide, but his legacy spans both the mind and the heart. Highlights of his career include being named the holder of the Paul C. MacDonald Distinguished Chair in Obstetrics and Gynecology and serving as a treasured mentor to the 45 fellows who have worked under his leadership.

He looks upon the progress at UT Southwestern with hope for the future. "Everything has changed, and we

grew with the times," Dr. Carr said. "The wonderful part about this Professorship is that no matter how much the physical campus of UT Southwestern changes, support for this work will exist in perpetuity."

"Dr. Carr's influence in each of the essential elements of the academic medical mission has had a far-reaching and lasting impact," said Kathleen M. Gibson, President and CEO of Southwestern Medical Foundation. "As he treated countless patients over almost 50 years, Dr. Carr continued to learn, publish, and attract exceptional fellows. Dr. Carr has now taught generations of future physicians who are well prepared to treat patients with the leading knowledge that research-based faculty provide. What a tremendous gift Dr. Carr's work has been and how appropriate for his friends and family to make this gift in his honor."

Dr. Carr holds the Paul C. MacDonald Distinguished Chair in Obstetrics & Gynecology.

See the endowed titles held by Dr. Podolsky above.

Join fellow UTSW graduates at Alumni CONNECT – Dallas

All UT Southwestern alumni are invited to an informal reception at 6:30 p.m. on Thursday, November 14, on the 14th floor of the T.Boone Pickens Biomedical Building on North Campus. Connect with fellow graduates and learn more about changes in the Medical School curriculum, student wellness initiatives, and ways to prevent burnout in the health care industry. Don't miss this chance to network with former classmates, faculty, and friends. The event is complimentary and beverages and hors d'oeuvres will be served.

Questions? Contact alumni@utsouthwestern.edu or the Office of Development and Alumni Relations at 214-648-2344.



UTSW graduates enjoy time networking and reminiscing at the last Alumni CONNECT event held in Dallas.



UT Southwestern community celebrates artistic achievement

By Amy Stumbris

UT Southwestern is a place where an ultrasound technologist and a registered nurse, among others, can be recognized not only for their daily work, but also for their creative endeavors – imagine strawberries splashing, Hindu mythological characters, and a rain-producing umbrella.

The annual regional On My Own Time (OMOT) art exhibit and competition provides such an opportunity for the UT Southwestern community to share these inspired images.

This year marks the 19th anniversary of UT Southwestern's participation in OMOT, sponsored by the North Texas Business Council for the Arts (NTBCA). In these 19 years, UT Southwestern's participation has highlighted the creative talents of more than 1,000 employees, whose artworks were temporarily displayed in the Health Sciences Digital Library and Learning Center to be enjoyed and voted on by the campus community.

In August, the University hosted an awards reception honoring the artists for their work, as well as recognizing winners and honorable mentions in upwards of 15 categories of visual art. There were more than 89 visual art entries this year. For the event, presenters and honorees were joined by the UT Southwestern community jazz band, the M-Cats, and salsa dancers.

Best in Show, People's Choice, and First Place winners from all participating organizations were displayed in the east wing of NorthPark Center, between Macy's and Dillard's, Oct. 3-19.

"The show gets better and better each year, and this year is no exception," said UT Southwestern Art Curator Courtney Crothers. "Congratulations to all of the artists who participated."

Best in Show: *Negativity*

This year's Best in Show winner, as selected by NTBCA judges, was Rebecca Benezue, for her computer-enhanced photography entry titled *Negativity*.

Ms. Benezue is an ultrasound technologist in Maternal-Fetal Medicine research, also often



Rebecca Benezue with her Best in Show-winning enhanced photography, *Negativity*.

working with data analysts on various projects, so she's "either in the clinic or in the office, depending on the day of the week."

"I really enjoy doing both, so it's a nice mix for me," Ms. Benezue said.

Outside of her day job, Ms. Benezue's passion lies in her photographic art.

"I've always had a love of photography, but I really became passionate about it when I learned compositing," Ms. Benezue said. "I find it amazing to be able to combine elements of different images together and create something new – it's a wonderful artistic outlet. I get inspired by asking, 'What if?' And then giving my imagination free rein."

Her winning entry, *Negativity*, features herself as the model, sitting under an umbrella, which pours its own rain on top of her head.

"*Negativity* is an image depicting the way it feels for us (and others) when we are constantly negative – we 'rain' on ourselves," Ms. Benezue said. "Once I found the background I wanted to use, I then shot the image of the woman (myself)



Joshila Muraleedharapanicker with her People's Choice-winning work on canvas, *Ganesha*.

on my patio, soaked and holding an umbrella. I cut it out and composited it into the background image in Photoshop, then added the rain and did some adjustments to blend it all together."

People's Choice: *Ganesha*

Joshila Muraleedharapanicker, a registered

nurse at William P. Clements Jr. University Hospital in the Surgery unit, works the evening shift.

"It is a fast-moving place," Ms. Muraleedharapanicker said. "I normally admit and discharge patients who are coming for surgeries. My duties include bedside nursing care, patient education, being a patient advocate, and providing emotional support for the patients and their loved ones who are stressed out about their upcoming procedure."

Her work on canvas, *Ganesha*, garnered the most votes from the UT Southwestern community to earn her the People's Choice honor.

Since childhood, she has had passion for all kinds of art, but "never got the chance to pursue my passion until my daughter grew up. Now that she's grown, I have more free time."

She learned the art of Kerala mural paintings (frescos depicting Hindu mythology and legends that are drawn on the walls of temples and churches in South India).

"In 2012, I started learning mural painting from my first guru, and last year I studied under a second guru in mural painting," she said. "I grew up seeing these paintings on temple walls which are made of natural colors. In this type of painting, you only use five basic colors. That inspired me to learn this special art. Mythological stories are well explained in this form of art."

Ganesha is one of the Hindu mythological characters.

"Symbolically, the large elephant head of Ganesha symbolizes wisdom, understanding, and discriminatory intellect that one must possess to attain perfection in life," Ms. Muraleedharapanicker said.

More online: See photos of other winning entries and the full list of winners on *Center Times Plus* at utsouthwestern.edu/ctplus.

UTSW gathers 5,082 strong for Dallas Heart Walk



UTSW employees, friends, and family beat last year's participation record with 5,082 registered walkers.

By Ashley Green-Jones

It was a picture perfect day for a stroll in downtown Dallas as UTSW participated in the 2019 American Heart Association's (AHA) Dallas Heart Walk on Sept. 14 at Reunion Park. UT Southwestern surpassed its goal, with 5,082 registered walkers and 111 teams comprised of employees, friends, and family members. Donations to the AHA on behalf of UTSW exceeded \$32,000. Participants completed either a 5K (3.1-mile) or 1-mile Miracle Mile Walk. The annual event raises money to assist heart disease and stroke patients, fund research at UT Southwestern and at other leading research centers, and promote wellness initiatives. The majority of the funds raised stay in North Texas.



Three UTSW walkers pose for a photo opp.



These two walkers were all heart.

More online: See more photos on *Center Times Plus* at utsouthwestern.edu/ctplus.

Health care students gain perspective on teamwork at Convergence Days 2019

By Carol Marie Cropper

Almost 800 area students planning a career in health care gathered on South Campus recently to learn how important interprofessional communication is to achieving excellent patient care – and ways to do it better.

The event, held Sept. 18-19, marked the 10th anniversary of Convergence Days at UT Southwestern. Participants included students from UT Southwestern's Medical School and School of Health Professions, pharmacy students from Texas Tech University, public health students from UTHealth, and nursing students from UT Arlington and Texas Woman's University.

"Who it really affects is your patient," Dr. Kim Hoggatt Krumwiede, Director of Interprofessional Practice and Education, said of effective communication with the patient and among caregivers. "Such a large number of patient errors are due to communications errors and could be prevented." Dr. Hoggatt Krumwiede is also a Distinguished Teaching Professor, Professor of Health Care Sciences, and Associate Dean for Academic Affairs in the School of Health Professions.

Convergence Days has a different theme each year; the focus this year was on developing an interprofessional culture of safety and team-based management of diabetes.

Taking part in a panel discussion on diabetes care was Isaac Lasky, a health care interpreter who has lived with the disease for over 40 years. Mr. Lasky said excellent communication and appreciation of cultural differences are important, especially



Dr. Kim Hoggatt Krumwiede leads a student group in a mock patient safety exercise at Convergence Days.

when discussing a diabetic patient's diet. "Do I eat tacos and enchiladas? Of course. Yes. That's my background," he said.

Panelist Dr. Sasan Mirfakhraee, UT Southwestern Assistant Professor of Internal Medicine, recommended students watch their patients' faces when they communicate. Their expressions might indicate they are uncomfortable giving themselves insulin injections, for example, which would require a different treatment plan.

During the event, students met in small interprofessional groups to learn about each other over lunch. Then, facilitated by a faculty member, the small groups competed to see which could communicate and work best together in a riddle room activity based on the interprofessional culture of safety.

Led by Dr. Angela Mihalic, UTSW's Dean of Medical Students and Associate Dean for Student Affairs, one group put

their heads together to decide the best way to treat a diabetic patient with a foot wound. They also had to calculate a patient's body mass index and daily calorie and carbohydrate intake to find the most carbohydrate-dense meal of the day, which surprisingly to the students was breakfast, due in part to a big glass of orange juice. Dr. Mihalic is the Medical School's liaison to Convergence Days, as well as a Professor of Pediatrics and a Distinguished Teaching Professor.

Sean Avery, a UTA nursing student on the team, said he found the experience of working with other health students and learning more about the roles of caregivers from the different disciplines valuable.

Another UTA nursing student agreed. "I can finally picture what the pharmacy does and what the doctor does and the struggles they go through," Lorena Marin said.