

# CENTER TIMES

AUGUST/SEPTEMBER 2022

A PUBLICATION OF THE UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER

CAMPUS EDITION

## UTSW ranked No. 1 Hospital in DFW for sixth consecutive year

From Staff Reports

UT Southwestern is the No. 1 hospital in Dallas-Fort Worth – the nation’s fourth-largest metro area – for the sixth consecutive year and ranks among the top hospitals nationally in nine specialties ranging from brain to heart to cancer care, according to *U.S. News & World Report’s* annual Best Hospitals list. Five specialties rank among the nation’s top 25.

The national recognition, which includes heart, diabetes, pulmonology, urology, and cancer specialties, ranked among the top 25 nationally, builds upon expansion of William P. Clements Jr. University Hospital in 2021, the 2022 completion of a \$1 billion campaign for the Peter O’Donnell Jr. Brain Institute, and redesignation of the Harold C. Simmons Comprehensive Cancer Center in 2022 by the National Cancer Institute (NCI) among the nation’s elite comprehensive cancer centers.

Over the past year, UT Southwestern also has received national recognition for patient satisfaction, safety, and quality of care from several reviewing bodies, including the Centers for Medicare & Medicaid Services, Leapfrog, Healthgrades, and Press Ganey.

“Our commitment to the best care possible for patients – reflected in independent measures such as these rankings – remains our North Star despite a challenging health care environment,” said Daniel K. Podolsky, M.D., President of UT Southwestern. “The obligation of our mission to advance medical science and prepare the next generation of physicians and other providers with the unwavering commitment of our entire health care team by putting our patients at the center of everything we do is our priority that drives continuous improvement.”

UT Southwestern’s nationally ranked specialties from more than 4,500 hospitals across the country include:

- #11 Urology
- #14 Cardiology and Heart Surgery
- #18 Diabetes and Endocrinology
- #21 Pulmonology and Lung Surgery
- #25 Cancer
- #26 Geriatrics
- #27 Rehabilitation
- #30 Neurology and Neurosurgery
- #38 Gastroenterology and GI Surgery

UT Southwestern, ranked No. 2 in Texas, was rated nationally as high performing for orthopedics. Please see RANKINGS on page 3



UT Southwestern is ranked among the top hospitals nationally in nine specialties that range from brain to heart care.

## ‘Celebrating Breakthroughs Together’

*Campus display honors and inspires with unique installation, website of trailblazing UT Southwestern women*



Members of the UTSW community view the new Celebrating Breakthroughs Together wall on South Campus honoring trailblazing UT Southwestern women.

By Samantha Pruser

Celebrating Breakthroughs Together, a multimedia display unveiled July 19, highlights the accomplishments of trailblazing women at UT Southwestern. The display at the west end of Eugene McDermott Plaza and Lecture Halls on the South Campus includes a wall of photos and a video timeline with an accompanying online component.

The project is designed to honor groundbreaking women at UTSW and to inspire female students and adults to pursue careers in STEM (science, technology, engineering, mathematics, and medicine) fields.

“Seeing and knowing these diverse women will inspire not only the 14,000 students who come through our campus every year, but also our own faculty, staff, and visitors,” said Julie Mirpuri, M.D., Associate Professor of Pedi-

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## In hopes of preserving, restoring lost brain function

*\$25 million gift from Once Upon a Time Foundation establishes Raynor Cerebellum Project*



By Patrick Wascovich

A generous \$25 million commitment from the Once Upon a Time Foundation will create the Raynor Cerebellum Project at UT Southwestern (RCP-UTSW) to investigate diseases associated with cerebellum dysfunction to discover how to preserve and restore lost brain function. This gift helped UT Southwestern not only achieve, but exceed, the goal for its Campaign for the Brain, a \$1 billion initiative aimed at advancing prevention efforts, effective treatments, and cures for brain diseases.

Cerebellar dysfunction typically causes imbalance and disrupts movement control, including abnormalities in gait, coordination, speech, and eye movements. It is increasingly being associated

Please see RAYNOR on page 8

## Molecular biologist wins Nominata Award for findings on parasitic reproduction



Rui Chen hopes her research into factors affecting a type of worm’s reproduction may lead to better drugs to fight the parasitic disease schistosomiasis.

By Carol Marie Cropper

In early spring of 2021, when Rui Chen spotted eggs in petri dishes where she had treated virgin female schistosome flatworms with a compound she had just discovered in males, she thought she had made some sort of mistake – maybe she had accidentally dropped a few eggs into the dishes as well, since female schistosomes do not sexually mature or lay eggs except when clasped by males.

James Collins, Ph.D., who heads the UT Southwestern lab where Ms. Chen is a researcher and Ph.D. student, knew better.

“You wouldn’t make a silly mistake like that; I think you’re on to something,” he told her.

She repeated her experiment three more times, watching for egg production in the virgin worms after treating them with the synthetic compound her collaborators had helped her create in the lab after seeing it produced by males.

“I saw the egg production again and again,” she said.

Her findings were published this year in *Cell*, reporting the lab’s discovery of a pheromone, or excreted chemical, made by male schistosome worms that stimulates sexual maturation and egg-laying in females.

For her research, Ms. Chen received the 2022 Nominata Award, the highest honor for academic and research accomplishment bestowed by UT Southwestern’s Graduate School of Biomedical Sciences.

Ms. Chen’s hope is that these findings will one day lead to treatments that can prevent female schistosomes from laying the massive numbers of eggs that clog internal organs of those infected by the parasites. The parasitic disease schistosomiasis affects more than 200

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### EXCELLENCE IN ACTION

The Health System Celebration of Excellence highlights accomplishments of the past year amid challenges.

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### FLU FIGHTER

A UTSW study identifies a function for a protein that appears to be key to inhibiting replication of the flu virus.

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### COMMENCEMENT 2022

A look back in photos from UT Southwestern’s Medical School and Graduate School graduation ceremonies.

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# UTSW scientists on team awarded Cancer Grand Challenges grant

Research group to study extrachromosomal DNA's link to cancer and the immune system

By Christen Brownlee

UT Southwestern researchers Zhijian “James” Chen, Ph.D., and Sihan Wu, Ph.D., are part of a team that has been awarded a Cancer Grand Challenges grant, a unique award that aims to solve some of cancer's toughest problems by bringing together global teams with diverse areas of expertise.

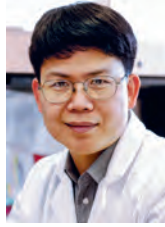
The initiative, founded by Cancer Research UK and the National Cancer Institute, will provide 20 million pounds – equivalent to about \$25 million – over five years to Drs. Chen and Wu and colleagues from the U.S., U.K., and Germany to learn more about a phenomenon known as extrachromosomal DNA (ecDNA) – circular pieces of DNA that exist outside of a cell's main DNA bound together in chromosomes.

“It's a great honor to be part of this stellar team, but it's also a large responsibility to be entrusted

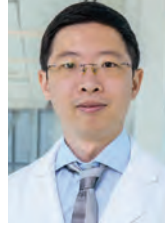
with a lot of resources to solve a difficult problem in cancer biology,” said Dr. Chen, Professor of Molecular Biology and Director of the Center for Inflammation Research at UTSW, a Howard Hughes Medical Institute Investigator, and winner of the 2019 Breakthrough Prize in Life Sciences.

Dr. Chen is one of the world's leading investigators of innate immunity. His discovery of the cGAS (cyclic GMP-AMP synthase) enzyme, which triggers a pathway that activates the body's immune system, has opened the door for development of drugs designed to modulate an immune response and fight diseases such as lupus and cancer.

“It's a unique and unprecedented opportunity to conduct multidisciplinary studies focusing on



Zhijian “James” Chen, Ph.D.



Sihan Wu, Ph.D.

ecDNA, to understand how ecDNA-driven cancers interact with the immune system,” said Dr. Wu, Assistant Professor at Children's Medical Center Research Institute at UTSW.

Dr. Wu, a leading scientist in the ecDNA field, is one of the pioneers who revealed the physical shape and molecular functions of ecDNA in cancer, laying the foundation for the modern biology of ecDNA.

Dr. Chen and Dr. Wu, both members of the Harold C. Simmons Comprehensive Cancer Center, plan to use the funds from Cancer Grand Challenges to better understand whether cGAS detects ecDNA. One of the mysteries of ecDNA in cancers, Dr. Chen explained, is why it does not trigger immune activity. The two scientists aim to discover what mechanisms

cancer cells use to evade immune detection, which eventually could lead to new ways to treat cancers with immunotherapy.

Their team is led by Paul Mischel, M.D., Professor of Pathology at Stanford University, and includes scientists from University of California San Diego, The Scripps Research Institute, Fred Hutchinson Cancer Center, New York University Langone Health, Jackson Laboratory for Genomic Medicine, University College London, Queen Mary University of London, University of Cambridge, University College London, and Max Delbrück Center for Molecular Medicine, and Charité Berlin.

Dr. Chen holds the George L. MacGregor Distinguished Chair in Biomedical Science.

Dr. Wu is a Cancer Prevention and Research Institute of Texas (CPRIT) scholar.

## Campus events celebrate employee service, diversity, and inclusion

From Staff Reports

Members of the UT Southwestern community celebrated longtime employee service and a commitment to diversity and inclusion in a series of signature events in May and June.

On May 23, a hybrid event on South Campus celebrated Asian Pacific American Heritage Month to honor those in the Asian-Pacific Islander community who have risen above challenges throughout history. The second annual event was hosted by the Asian-Pacific Islander Business Resource Group (API-BRG) and the Office of Institutional Equity & Access. Keynote speaker Thomas Rajan, Vice President, Global Talent,

Benefits, and Retirement for American Airlines, spoke about the abilities within all of us to make a difference to help others along their life journeys.

For Employee Recognition Week, one of the highlights on June 7 was the annual Quarter Century Club celebration honoring employees who had reached the milestone of 25 years of service or five-year milestones thereafter. Events took place campuswide during the week of June 6-10.

Also in June, UTSW community members demonstrated their support for the LGBTQ community during Pride Month. Events included a June 5 brunch on Dr. Donald Seldin Plaza that

concluded with UTSW students, staff, and faculty participating in the Dallas Pride parade for the first time. This event was sponsored by the Office of Institutional Equity & Access' Division of Diversity & Inclusion, the Office of Student Diversity & Inclusion, and the LGBT & Allies Business Resource Group.

On June 15, the Pride Month Signature Celebration took place at William P. Clements Jr. University Hospital. Keynote speaker Jaime Almandoz, M.D., M.B.A., Associate Professor of Internal Medicine, encouraged members of the LGBTQ community to take pride in themselves amid continued challenges for societal acceptance, and work toward elimination of discrimination.



Posing for a group photo during Employee Recognition Week at the Monty and Tex Moncrief Medical Center at Fort Worth are members of the Therapy team.



More than 300 members of the UTSW community and friends walk in the Dallas Pride parade to show their support for the LGBTQ community.



A visitor to the Cuisines of Asia event points to his home country, India, on a map of Asian Pacific Islander countries on display to demonstrate the world as one family at UT Southwestern.



At the Pride Month Signature Celebration, keynote speaker Jaime Almandoz, M.D., M.B.A., Associate Professor of Internal Medicine, encouraged members of the LGBTQ community to take pride in themselves.



Thomas Rajan, Vice President, Global Talent, Benefits, and Retirement for American Airlines and keynote speaker for the Asian Pacific American Heritage Month Signature event, spoke to attendees about helping others along their life journeys.



New Quarter Century Club members Jennifer Gares (left) and Taryn Mayes check out the special edition of *Center Times* featuring profiles of honorees.

### Wukich honored for work on diabetic limb salvage

In recognition of his work advancing diabetic limb salvage, Chair of Orthopaedic Surgery **Dane Wukich, M.D.**, has received the MedStar Georgetown Distinguished Achievement Award in Diabetic Limb Salvage from MedStar Georgetown University Hospital.

Dr. Wukich, who is known globally for his ability to reconstruct dislocated foot and ankle bones that result from a serious diabetic complication referred to



Dane Wukich, M.D.

as Charcot arthropathy, thus avoiding amputation, received the award at the annual Diabetic Limb Salvage Conference in Washington, D.C.

Because few orthopedic surgeons are comfortable treating diabetic foot wounds, as many as one-third of Dr. Wukich's patients have diabetes.

“These are really difficult surgeries with high complication rates,” he said of diabetes-related reconstructive foot

and ankle bone operations. “Healing wounds, even from surgery, is a challenge for these patients, and they can't feel any chafing or blisters caused by the rigid dressings we use. We see them several times post-op and then annually for the rest of their lives.”

Blockage or narrowing of the arteries that perfuse the extremities, known as peripheral arterial disease, is a common manifestation of Type 1

and Type 2 diabetes. This limited blood flow disrupts immune system access to the lower legs and toes, predisposing ordinary cuts and blisters to dangerous infections. The limited blood flow can also cause neuropathy, which prevents the patient from feeling and treating their wounds.

At UT Southwestern, a multidisciplinary team of physicians is proving that many amputations are preventable through coordinated intervention and innovative treatments. Over the past decade, the percentage of patients who arrive with a diabetic foot infection and have an amputation has been cut in half, thanks to the coordinated care provided through the diabetic limb salvage program and

Wound Care Clinic. The services are provided at both William P. Clements Jr. University Hospital and Parkland Memorial Hospital.

Dr. Wukich said early intervention is needed to help more patients save their limbs.

“Primary care physicians have to start routinely examining the feet of every patient with diabetes,” he said. “The sooner we can intervene, the more limbs we can save, and that translates into lives.”

Dr. Wukich holds the Dr. Charles F. Gregory Distinguished Chair in Orthopaedic Surgery.

### NEWS

## MAKER

### CENTERTIMES

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# Health System Celebration of Excellence recognizes accomplishments amid challenges of past year

By Carol Marie Cropper

Since the start of the pandemic, UT Southwestern health care professionals have vaccinated at least 168,000 patients against COVID-19, administered 526,000 COVID-19 tests, and treated 8,000 COVID patients. While meeting those urgent needs, staff simultaneously worked to complete new outpatient cancer care and brain research towers and a regional outpatient medical center at RedBird to serve Southwestern Dallas County – all set to open this year.

On May 6, the fourth annual Health System Celebration of Excellence was held in-person and livestreamed for the benefit of the entire UT Southwestern community. The half-day event highlighted clinical innovations and quality improvements taking place at UTSW, despite the hardships of a pandemic.

Those who came to the Tom and Lula Gooch Auditorium or watched the livestreamed event were welcomed by Daniel K. Podolsky, M.D., President of UT Southwestern, and heard an overview of UTSW's recent accomplishments from John Warner, M.D., Executive Vice President for Health System Affairs and CEO of the UT Southwestern Health System. The keynote speaker, Marti Taylor, M.S.N., RN, President and CEO of

OneFifteen, an addiction treatment facility in Dayton, Ohio, talked of ways to improve trust and teamwork to build a safer, more reliable health care environment.

Also featured were 131 posters submitted by UTSW faculty and staff describing projects to improve care. A committee selected five top posters in each of four categories: People, Quality, Service, and Financial Stewardship. A winner and finalist in each category were recognized during the event – with projects ranging from a plan to help new nurses transition successfully to their new job to a program designed to prevent patient identification errors during transport.

## Excellence drives growth

The number of outpatient visits has bounced back since fiscal year 2020, when the pandemic spread to North Texas, according to Dr. Warner. Outpatient visits dipped to 1.5 million in 2020 from 1.6 million the year before. That number is projected to rise to almost 2.2 million in fiscal year 2022. Meanwhile, Dr. Warner said, patient telehealth visits have soared.

But such numbers tell only part of the story. "UT Southwestern leads with quality and service," Dr. Warner said.

And as Dr. Podolsky shared in his opening



John Warner, M.D., Executive Vice President for Health System Affairs and CEO of the UT Southwestern Health System, gave an update on clinical progress and initiatives of the past year.

remarks, "You've heard me say many times before that growth for growth's sake is not our objective when it comes to our clinical transformation strategies. The significant investments we continue to make in the people, programs, facilities, technologies, and services we offer at UT Southwestern enable us to perform our best work and provide the exemplary care our patients and their families have come to expect from us and deserve."

UTSW also ranks among the 10 best academic medical centers in the U.S. in terms of low patient mortality, according to Vizient Inc., a health care support company. Vizient ranks UT Southwestern No. 2 on patient-centeredness, he added.

While UT Southwestern has long had the goal of being North Texas' preferred specialty care provider, another aim is expanding its reach in primary care, Dr. Warner said. The Medical Center plans to add 15 to 17 new clinics around the metroplex in the next couple of years, he said.

## A speaker's humble advice

Keynote speaker Marti Taylor said she was impressed by UT Southwestern's continued focus on its mission despite the pandemic. She talked of the need to build a culture of both physical safety for patients and psychological safety for



Keynote speaker Marti Taylor, M.S.N., RN, President and CEO of OneFifteen, spoke about ways to improve trust and teamwork in order to build a safer, more reliable health care environment.

employees so that teams know they can rely on each other and speak up if there is a problem.

She also cited a 2021 survey from *The Washington Post* and Kaiser Family Foundation that found 55% of front-line health care workers reported burnout.

"Burnout is at an all-time high," she said. "We need to be kind to one another."

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.

**More online:** To watch videos of the program and read the full story, including a list of the top poster session winners, go to [Center Times Plus](https://www.centertimes.com/plus) at [utsouthwestern.edu/ctplus](https://utsouthwestern.edu/ctplus).



Health System executives participate in a fireside chat with keynote speaker Marti Taylor, right. The panel discussion was among events at the fourth annual Health System Celebration of Excellence event on May 6 that highlighted clinical innovations and quality improvements at UT Southwestern.

# Timing reduced-calorie meals dramatically extends life span in mice

By Christen Brownlee

A study led by Peter O'Donnell Jr. Brain Institute neuroscientists shows that at what time food is eaten is just as important as simply cutting calories to increase life span. Timing feedings to match the active period of the circadian cycle extended the life span of lab mice more than three times as much as caloric restriction alone, the researchers report in *Science*.

"If these findings hold true in people, we might want to rethink whether we really want that midnight snack," said Joseph Takahashi, Ph.D., Chair of Neuroscience and a Howard Hughes Medical Institute Investigator. Dr. Takahashi co-led the study with Carla Green, Ph.D., Professor of Neuroscience.

Dr. Takahashi explained that experiments dating back to the 1930s have shown that decreasing calorie counts by about a third extends life span as well as health span – the length of time before diseases associated with old age arise – in every species in which this phenomenon

has been studied. More recent research has shown that including periods of fasting and restricting eating to active hours also boosts health. However, most caloric restriction experiments to date have involved feeding lab mice – which are nocturnal – on a daytime schedule.

The labs of Dr. Takahashi and Dr. Green, which focus on investigating circadian rhythms, sought to disentangle the effects of caloric restriction, fasting, and timing of meals on life span and health span. To do this, they studied six groups of lab mice: one that was allowed to eat as much chow as they wanted whenever they were hungry; another that had food delivered around the clock with about 30-40% fewer daily calories; a third and fourth in which the same lower calorie count was either delivered up front or spread over the span of 12 daytime hours; and a fifth and six in which the lower calorie count was delivered up front or spread over the span of 12 nighttime hours.

Over four years, the researchers tracked the life span and health of



Joseph Takahashi, Ph.D.

these groups. Although the mice that ate as much and whenever they wanted lived a median of nearly 800 days, reducing calories in food available around the clock extended their lives about 10% to 875 days. Restricting this reduced-calorie diet to just daytime hours boosted this number to an average of 959 days. However, offering the low-calorie diet only during nighttime hours extended their median life span to about 1,068 days, an increase of a whopping 35% over the unrestricted eaters.

An important and counterintuitive aspect of these studies is that



Carla Green, Ph.D.

body weight was not affected by the pattern or time of eating – there were no differences in body weight among the five low-calorie groups despite the substantial differences in life span. Dr. Green added, "This shows that at low body weight, this popular yardstick of health (body weight) is not a predictor of life span."

Further investigation showed that the mice that lived the longest had significantly better metabolic health and tended to get diseases at far more advanced ages.

Victoria Acosta-Rodriguez, Ph.D., Instructor of Neuroscience and lead

author of the study, added, "Our findings serve as a proof-of-principle for investigating circadian clocks as potential targets to delay aging."

Although similar experiments have not yet been performed in humans, Dr. Takahashi suggested that restricting eating to a 12-hour daytime window could offer life- and health-extending benefits for people as well – a change he has already adopted for himself.

This study was funded by the Howard Hughes Medical Institute, the National Institute on Aging, the National Institute of General Medical Sciences, and the Milky Way Research Foundation.

Dr. Takahashi holds the Loyd B. Sands Distinguished Chair in Neuroscience.

Dr. Green is a Distinguished Scholar in Neuroscience.

**More online:** Read the full story in the newsroom at [utsouthwestern.edu/newsroom](https://utsouthwestern.edu/newsroom).

## Rankings Continued from page 1

dics, placing that specialty among the top 10% of all rated hospitals, and was nationally rated for its expertise in 17 procedures and conditions – abdominal aortic aneurysm repair, aortic valve surgery, back surgery (spinal fusion), COPD, colon cancer surgery, diabetes, heart attack, heart bypass surgery, heart failure, hip fracture, kidney failure, lung cancer surgery, ovarian cancer surgery, pneumonia, prostate cancer surgery, stroke, and uterine cancer surgery. UTSW also received ratings of "excellent" for its patient experience among three types of cancer surgeries, three types of orthopedic surgeries, and four types of cardiology surgeries and treatments.

Clements University Hospital previously received national distinction for high patient satisfaction scores, quality and safety efforts, and innovative design. UTSW is listed among the top 5% of hospitals nationally for consistent delivery of clinical quality, and among top hospitals for patient experience and routine specialty care in areas including cardiovascular, gastroenterology, orthopedic, and neurosurgical care. Organiza-

tions also rate UTSW high for patient satisfaction efforts such as physician and nurse communications, medication and hospital discharge instructions, and hospital cleanliness and quietness.

"The recognition reflects a commitment to service excellence that resonates across our Health System and is shared by our physicians, nurses, advanced practice providers, trainees, and vital supporting staff," said John Warner, M.D., Executive Vice President for Health System Affairs and Health System CEO. "By working together, our multidisciplinary teams advance the quality of care and outcomes we are able to achieve for our patients and their families."

Children's Medical Center Dallas, where UT Southwestern Pediatric Group faculty practice, earlier was rated among the nation's best pediatric hospitals by *U.S. News* for 2022-2023 and is the only pediatric hospital in North Texas ranked in all 10 specialties.

The 12-story, three-tower Clements University Hospital, along with expansions of brain, cancer, radiation oncology, and outpatient clinical space,

means the Health System is ideally positioned to continue to meet Texas' burgeoning health care needs. The hospital expansion prepared UTSW for referrals from continued growth of the Southwestern Health Resources network, a partnership with Texas Health Resources to better integrate delivery of care across North Texas. The network encompasses four of the top eight-rated hospitals in the Dallas-Fort Worth metroplex.

In addition to the No. 1 ranked Clements University Hospital, the Southwestern Health Resources network includes Texas Health Presbyterian Hospital Dallas, which tied for No. 3, Texas Health Harris Methodist Hospital Southwest Fort Worth, which tied for No. 5, and Texas Health Harris Methodist Hospital Fort Worth, which placed No. 8.

In other institutional measures, UT Southwestern rates No. 1 among global health care institutions in the 2022 Nature Index for published research, UT Southwestern Medical School rates nationally among the top 25 Best Graduate Schools, and the Medical Center has nationally rated programs in its UT Southwestern Graduate School of Biomedical Sciences.

UTSW's Simmons Cancer Center is the only NCI-designated comprehensive cancer center in the region – one of 53 in the nation, placing it among the top 4% of the approximately 1,500 cancer centers in the U.S. UT Southwestern is designated an Advanced Comprehensive Stroke Center by the Joint Commission and the American Heart Association/American Stroke Association, and has one of the nation's leading epilepsy clinics – a Level 4 center, the highest possible level by the National Association of Epilepsy Centers – part of the O'Donnell Brain Institute.

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.

# UTSW scientists identify protein key to inhibiting flu virus

By Christen Brownlee

A collaborative study from UT Southwestern scientists has identified a new function for the protein TAO2 that appears to be key to inhibiting replication of the influenza virus. The findings were published in *PNAS*.

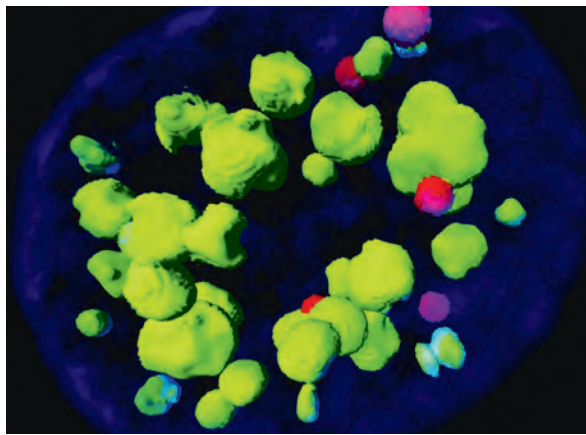
"These results uncover new strategies for interfering with influenza virus replication, providing a potential avenue for the development of new antivirals against influenza," said Beatriz Fontoura, Ph.D., Professor of Cell Biology, whose lab studies the interplay between RNA viruses, such as influenza A virus, with their hosts.

The study was led by Dr. Fontoura, together with first author and postdoctoral fellow Shengyan Gao, Ph.D., and Melanie H. Cobb, Ph.D., Professor of Pharmacology and a member of the National Academy of Sciences.

To replicate, influenza virus takes over parts of the host cell nucleus known as nuclear speckles, which then provide the virus an envi-



Beatriz Fontoura, Ph.D.



Nuclear speckles (green) shown inside a host cell nucleus. Protein complexes (red/pink) regulate its assembly and function.

ronment to express its genes. Dr. Fontoura and her colleagues, including experts in cell biology, molecular biology, and pharmacology, identified a novel role in regulating nuclear speckle

assembly and function for the TAO2 kinase – a protein involved in transferring phosphate groups to other proteins.

"We found that TAO2 is needed to maintain

the physical integrity and function of nuclear speckles. Among the functions of nuclear speckles is regulation of key steps in gene expression, which are usurped by influenza virus at these compartments to support viral replication. Consequently, by downregulating TAO2 levels – or its kinase activity – we were able to inhibit influenza virus replication without causing major toxic effects to the host cell," Dr. Fontoura said.

This work was supported by grants from the National Institutes of Health, The Welch Foundation, the Center for Research of Influenza Pathogenesis and Transmission, National Institute of Allergy and Infectious Diseases, National Cancer Institute, and a Mary Kay Foundation International Postdoctoral Scholar Fellowship.

Dr. Cobb holds the Jane and Bill Browning, Jr. Chair in Medical Science.

# Genetic study confirms sarin nerve gas as cause of Gulf War illness

By Sarah Williams

For three decades, scientists have debated the underlying cause of Gulf War illness (GWI), a collection of symptoms affecting Persian Gulf War veterans. Now a research team led by Robert Haley, M.D., Professor of Internal Medicine, has shown that the nerve gas sarin was largely responsible for the syndrome.

The findings were published recently in *Environmental Health Perspectives*, a peer-reviewed journal supported by the National Institute of Environmental Health Sciences.

Dr. Haley's research group discovered that veterans with exposure to sarin were more likely to develop GWI and that the risk was modulated by a gene that normally allows some people's bodies to better break down the nerve gas. Gulf War veterans with a weak variant of the gene who were exposed to sarin were more likely to develop symptoms of GWI than other exposed veterans.

"Quite simply, our findings prove that Gulf War illness was caused by sarin," said Dr. Haley, a medical epidemiologist who has been investigating GWI for 28 years.

More than a quarter of the U.S. and coalition veterans who served in the war have reported a range of chronic symptoms, including fatigue, fever, night sweats, memory and concentration problems, difficulty finding words, diarrhea, sexual dysfunction, and chronic body pain. Both academic researchers and those within the military and Department of Veterans Affairs have studied a list of possible causes of GWI ranging



The U.S. military confirmed that chemical agents, including sarin, were detected in Iraq during the Gulf War. The UTSW study linked exposure to sarin as the cause of Gulf War illness.

from stress, vaccinations, and burning oil wells to exposure to pesticides, nerve gas, anti-nerve-gas medication, and depleted uranium.

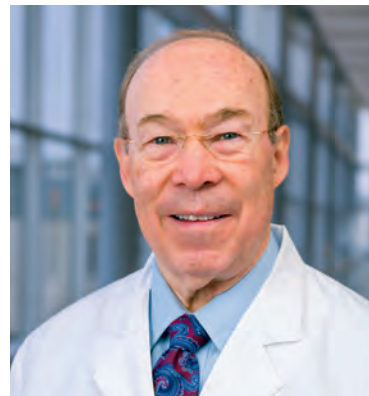
Over the years, these studies have identified statistical associations with several of these, but no cause has been widely accepted. Most recently, Dr. Haley and a colleague reported a large study testing veterans' urine for depleted uranium that would still be present if it had caused GWI, and found none.

"As far back as 1995, when we first defined Gulf War illness, the evidence was pointing toward nerve agent exposure, but it has taken many years to build an irrefutable case," Dr. Haley said.

Sarin is a toxic nerve agent that has been used in chemical warfare. When people are exposed to either the liquid or gas form, sarin enters the body through the skin or breathing and attacks the nervous system. High-

level sarin exposure often results in death, but studies on survivors have revealed that lower-level sarin exposure can lead to long-term impairment of brain function. The U.S. military has confirmed that chemical agents, including sarin, were detected in Iraq during the Gulf War. In particular, satellite imagery documented a large debris cloud rising from an Iraqi chemical weapons storage site bombed by U.S. and coalition aircraft and transiting over U.S. ground troop positions where it set off thousands of nerve gas alarms and was confirmed to contain sarin.

Previous studies have found an association between Gulf War veterans who reported exposure to sarin and GWI, symptoms. However, critics have raised questions of recall bias, including whether veterans with GWI are simply more likely to remember and report exposure due to their assumption that it may be linked



Robert Haley, M.D.

to their illness.

In the new paper, Dr. Haley and his colleagues studied 508 deployed veterans with GWI and 508 deployed veterans who did not develop any GWI symptoms, all randomly selected from more than 8,000 Gulf War-era veterans who completed the U.S. Military Health Survey. They not only gauged sarin exposure – by asking whether the veterans had heard chemical nerve gas alarms sound during their deployment – but also collected blood and DNA samples from each veteran.

The researchers tested the samples for variants of a gene called *PONI*. There are two versions of *PONI*: the Q variant generates a blood enzyme that efficiently breaks down sarin while the R variant helps the body break down other chemicals but is not efficient at destroying sarin. Everyone carries two copies of *PONI*, giving them either a QQ, RR or QR genotype.

For Gulf War veterans with the QQ genotype, hearing nerve agent alarms – a proxy for chemical exposure – raised their chance of developing

GWI by 3.75 times. For those with the QR genotype, the alarms raised their chance of GWI by 4.43 times. And for those with two copies of the R gene, inefficient at breaking down sarin, the chance of GWI increased by 8.91 times. This kind of strong gene-environment interaction is considered a gold standard for showing that an illness like GWI was caused by a particular environmental toxic exposure, Dr. Haley said.

The team is continuing research on how GWI impacts the body, particularly the immune system, whether any of its effects are reversible, and whether there are biomarkers to detect prior sarin exposure or GWI.

The U.S. Military Health Survey was a collaborative effort of UTSW and a large survey research team at RTI International including Jill Dever, Ph.D., who also contributed to this paper. The study was funded by the U.S. Departments of Defense and Veterans Affairs. Opinions, interpretations, conclusions, and recommendations are those of the authors and are not necessarily endorsed by the U.S. Departments of Defense or Veterans Affairs.

Dr. Haley holds the U.S. Armed Forces Veterans Distinguished Chair for Medical Research, Honoring Robert Haley, M.D., and America's Gulf War Veterans.

**More online:** Read the full story in the newsroom at [utsouthwestern.edu/newsroom](https://utsouthwestern.edu/newsroom).

## Nominata Continued from page 1

million people in developing countries and leads to up to 200,000 deaths each year, according to the World Health Organization (WHO).

Ms. Chen and her fellow researchers named the pheromone BATT, for b-alanyl-tryptamine. They also reported that an enzyme that is found in insects as well, called NRPS (for nonribosomal peptide synthetase), is responsible for the production of BATT in the male worms.

"Rui is not only a gifted experimentalist, but also a scholar with an uncanny sense of what the next experiment needs to be," said Dr. Collins, Associate Professor of Pharmacology. "In the course of a single Ph.D., Rui has solved a problem I assumed I would struggle with my entire career."

Ms. Chen was one of 10 nominees for the Nominata, established in 1980 by the Graduate Student Organization to promote academic excellence and research achievement at UT Southwestern. The winner receives a monetary award and presents their research to the UT Southwestern community, which Ms. Chen did on May 11.

Two finalists received Dean's Discretionary Awards: Abigail Watterson, a fourth-year Ph.D. student in Genetics, Development, and Disease who works in the lab of Peter Douglas, Ph.D., Assistant Professor of Molecular Biology; and Mahmoud Elguindy, Ph.D., a student in the Medical Scientist Training Program who works in the lab of Joshua Mendell, M.D., Ph.D.,

Professor of Molecular Biology, Howard Hughes Medical Institute Investigator, and member of the Harold C. Simmons Comprehensive Cancer Center. Dr. Elguindy expects to receive his medical degree in May 2023.

Ms. Chen was born and reared in Wuhan, China, one of the countries in Asia and sub-Saharan Africa with a history of the chronic and sometimes fatal disease caused by schistosomes. She had heard of the parasitic disease growing up, she said, but it had become less of a problem by then due to the country's efforts to eradicate it.

She earned a Bachelor of Science in basic biology from Wuhan University and completed an eight-month laboratory internship at UT Southwestern during her senior year of college before deciding to seek a Ph.D. in cell and molecular biology here. Ms. Chen expects to complete her Ph.D. this year.

She was drawn to Dr. Collins' research into the biology of schistosomes because learning more about their sexual processes could help in the development of treatments for a disease that leads to disability and death in so many of the world's poorest inhabitants – as well as because she was fascinated by the worm's unusual reproductive process. They are the only type of flatworms that come in both male and female sexes rather than being hermaphrodites, and the male must hold the female next to him constantly within a long



Ms. Chen's work, published in *Cell*, identified a pheromone made by male schistosome worms that stimulates sexual maturation and egg-laying in females.

pouch on his body for her to become and remain sexually mature and lay eggs.

Schistosome infection occurs when people come into contact with the worm's tiny, grain-of-sand-sized larvae in contaminated water. Once the larvae pass through the skin, they enter blood vessels, where they feed and grow over a few weeks into half-inch-long worms, Ms. Chen said.

But it is the females' huge number of eggs – not the worms themselves – that creates the biggest problem, she said.

"They lay eggs constantly after they reach sexual maturation," Ms. Chen said.

These masses of worm eggs get stuck in the organs of those infected, such as the spleen and liver, and lead to an immune response that can

cause sickness. Abdominal pain and diarrhea are early symptoms, with enlargement of the liver and spleen in advanced cases, according to WHO.

Treatment involves killing the adult worms with the drug praziquantel, Ms. Chen said, but that doesn't remove eggs stuck in organs and treatment must be repeated as more larvae reach adulthood or reinfection occurs.

Preventing the females from reaching sexual maturity and laying eggs – which they do only after pairing with a male – could provide a better solution, Ms. Chen said.

Understanding how schistosomes' male-induced sexual maturity works could lead to drugs that prevent the release of BATT from the males or its effect on females, she said. Ms. Chen said another graduate student in the Collins lab is trying to locate the BATT receptor that takes up the chemical in females, while Ms. Chen tests BATT-like chemicals that might block BATT or the receptors for it.

Dr. Collins holds the Jane and Bud Smith Distinguished Chair in Medicine and is a Rita C. and William P. Clements, Jr. Scholar in Biomedical Research.

Dr. Douglas is a Southwestern Medical Foundation Scholar in Biomedical Research.

Dr. Mendell holds the Charles Cameron Sprague, M.D. Chair in Medical Science.

# Medical School Class of 2022 graduates at Meyerson

On May 12, the Medical School Class of 2022 celebrated its graduation with an in-person ceremony at the Morton H. Meyerson Symphony Center. U.S. Rep. Eddie Bernice Johnson delivered the commencement address to the 211 graduates. See photo highlights from the celebration below.



Family and friends take selfies in celebration, including graduate Dr. Anishka Kappalayil (center).

Samuel J. Chantilis, M.D., Dallas County Medical Society President, administers the Physician's Oath to new Medical School graduates.



Dr. Anthony Han waves to family and friends upon receiving his degree.



A group of UT Southwestern Medical School graduates gather for a celebratory photo.



Keynote speaker U.S. Rep. Eddie Bernice Johnson gave the graduates inspiring words for beginning their careers.



Ho Din Award winner Dr. Cayenne Price speaks to fellow graduates at commencement.



Class co-President Dr. Rudy Fernandez-Criado (front) is joined in celebration by other graduates, including Dr. Farzam Farahani (left).

**More online:** To see more photos from the commencement ceremony and stories on student award winners, go to *Center Times Plus* at [utsouthwestern.edu/ctplus](https://utsouthwestern.edu/ctplus).

## UT Southwestern honored for Fulbright student involvement

From Staff Reports

UT Southwestern is among the Top Producing Institutions of 2021-2022 Fulbright Students in the U.S. and one of the top producers of U.S. Fulbright students among four-year, special-focus institutions.

The Fulbright U.S. Scholar and Fulbright U.S. Student Programs, sponsored by the U.S. Department of State's Bureau of Educational and Cultural Affairs, provide grants to students, faculty members, scientists, and others to support academic exchanges between the United States and more than 150 countries based on academic merit and leadership potential.

"This achievement is a testament to your institution's deep commitment to international exchange and to building lasting connections between the people of the United States and the



UT Southwestern's Office of Global Health has supported global health activities for more than 833 students in 35 countries since 2010.

people of other countries," wrote U.S. Secretary of State Antony J. Blinken in a congratulatory letter to Daniel K. Podolsky, M.D., President of UT Southwestern. "The University of Texas Southwestern Medical Center's place among the Fulbright Program's 2021-2022 Top Producing Institutions

clearly demonstrates your dedication to preparing Americans to thrive in the global economy and serve as engaged citizens."

"The number of Fulbright Scholars and Students over the years – along with other prestigious scholarships and honors earned by our learners,

trainees, and faculty – reflects the high quality of UT Southwestern's education mission, as well as on the physicians and scientists who matriculate from our programs," said W. P. Andrew Lee, M.D., Executive Vice President for Academic Affairs, Provost, and Dean, UT Southwestern Medical School.

UT Southwestern's involvement in the Fulbright program launched with Adolph Giesecke Jr., M.D., an Associate Professor of Anesthesiology, working at the Universitat Mainz in Germany for the 1970-71 academic year. Over the decades, UT Southwestern's Fulbright students and scholars have spanned nearly a dozen countries – ranging from New Zealand to Germany. The University's most recent Fulbright Students are medical students Kaley Desher, who recently matched in pediatrics to Emory, and Angela Wang, who continues her

investigations on campus.

"These are stellar students who are going to make an impact in whatever they do," said Mary Chang, M.D., M.P.H., Assistant Professor of Emergency Medicine, who leads Global Health Education in UT Southwestern's Office of Global Health, which has supported global health activities for more than 833 students in 35 countries since 2010.

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.

# Graduate student studying pediatric tumors receives the Ida M. Green Award

By Jan Jarvis

Senior graduate student Akansha Shah has been awarded the 2022 Ida M. Green Award for leadership achievements along with her research work to understand development of the childhood muscle tumor rhabdomyosarcoma and the basis of heart regeneration in newborn mice.

This honor is presented annually by Southwestern Medical Foundation to one female student in the UT Southwestern Graduate School of Biomedical Sciences to recognize the student's scientific endeavors and commitment to the UTSW community.

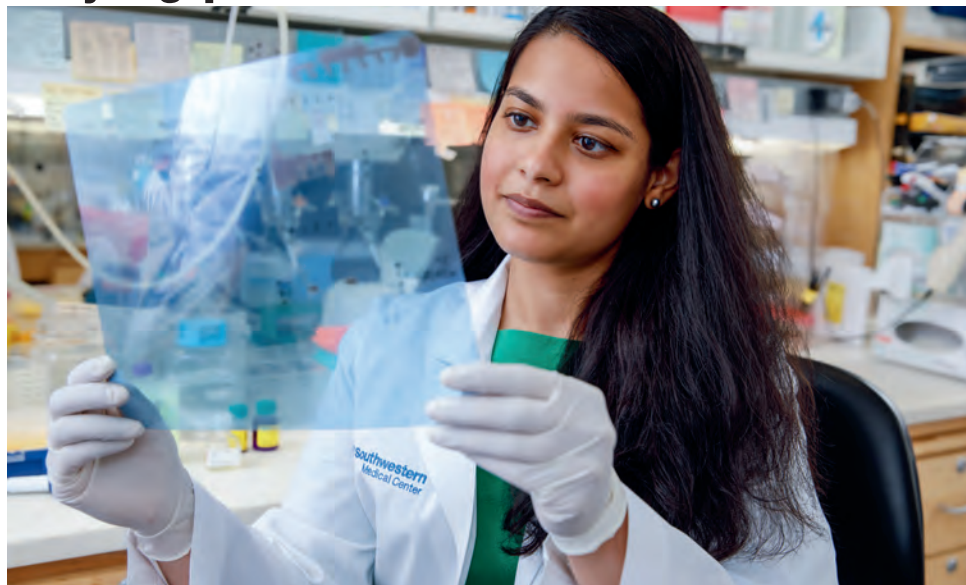
Ms. Shah's impact extends to serving as a role model for fellow graduate students, said her mentor, Eric Olson, Ph.D., Chair of Molecular Biology, in whose lab she works as a researcher.

"Akansha is an extremely dedicated experimentalist who always has a smile on her face. Beyond her exceptional work ethic, scientific insights, and enthusiasm, she is a leader among her peers," Dr. Olson said.

A Ph.D. candidate in the Genetics, Development, and Disease (GDD) Graduate Program, Ms. Shah spent two years working with Miao Cui, Ph.D., and Zhaoning Wang, Ph.D., to understand why newborn mice fully repair their hearts after a heart attack but lose this capacity within a week after birth. She established several cell-based assays that made it possible to identify potent regenerative factors that promote cardiac muscle cell proliferation and blood vessel formation. These findings were published in the high-impact journals *PNAS*, *Developmental Cell*, and *Cell Reports*.

Enthusiastic to take the lead of a project that diversified the scope of the Olson lab, Ms. Shah subsequently channeled her focus to understand rhabdomyosarcoma tumor growth, Dr. Olson said.

Through her research, Ms. Shah demonstrated that a transcription factor called Twist2 interacts



Graduate student Akansha Shah has received the 2022 Ida M. Green Award in recognition of her pediatric tumor research and leadership achievements.

with other regulators of gene expression to maintain growth of rhabdomyosarcoma tumors and showed that the depletion of Twist2 shifts the tumor toward differentiation in muscle tissue.

Although her passion is research, Ms. Shah is equally dedicated to making a difference in the community.

"I have had the privilege to be supported by exceptional mentors who provided me with space and guidance for academic and personal growth," she said. "I am motivated by that to contribute to the scientific community and encourage younger generations of women in science to follow their ambitions as I was able to pursue mine."

Ms. Shah is also mentored by Ning Liu, Ph.D., Associate Professor of Molecular Biology, and Rhonda Bassel-Duby, Ph.D., Professor of Molec-

ular Biology, and has worked closely with both of them to expand the study of rhabdomyosarcoma in the Olson lab.

At UT Southwestern, Ms. Shah is committed to supporting her fellow students by establishing new opportunities for career development and academic growth. As President of the Biotechnology Club, she has invited professionals from various life sciences industries to offer their insights and career advice.

Ms. Shah led an effort to bring the Three Minute Thesis (3MT) competition to UT Southwestern. 3MT allows graduate students to present their thesis work to a broad audience, improving their public speaking and communication skills.

In addition, Ms. Shah has been actively involved in community outreach. As a member of the Graduate Student Organization (GSO) Lead-

ership Board, she has organized volunteering opportunities such as the Habitat for Humanity Build Day. She also has served as a mentor and judge at the International Genetically Engineered Machine (iGEM) competition for undergraduate students interested in synthetic biology.

Born in India and raised in Thailand, Ms. Shah completed her undergraduate studies in biochemistry and biotechnology and then a Master of Philosophy in biomedical sciences, both at the University of Hong Kong. In Hong Kong, she also served as a tutor and graduate teaching assistant. When she traveled to the United States for two scientific conferences, Ms. Shah was captivated by the cutting-edge science and research opportunities available here. She came to UT Southwestern in hopes of contributing to its history of groundbreaking research and collaborative science.

The Ida M. Green Award, which was established in 1987, comes with a monetary award provided by the Women in Science and Medicine Advisory Committee and Southwestern Medical Foundation.

Ms. Shah said she is deeply honored to be recognized by the award that she sees as an inspiration for her continued commitment toward collaboration, mentorship, and service in the research community and beyond.

"I've learned that if you listen, keep an open mind, and motivate people who will help you to execute your vision, there are always ways to give back to the community," she said.

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

## Breakthroughs Continued from page 1

atics. She, along with Helen Yin, Ph.D., Associate Dean, Office of Women's Careers, came up with the idea for the project. Dr. Yin is also a Professor of Physiology and a Distinguished Teaching Professor.

"This is truly a celebration of their breakthroughs," Dr. Mirpuri said of the women featured in the project.

The project was partially funded by the UTSW Office of the President as well as a grant from the American Association for the Advancement of Science and its IF/THEN Ambassadors program, supported by Lyda Hill Philanthropies. The goal of the IF/THEN Ambassadors program is to highlight contemporary women in STEM fields who will inspire young girls to pursue careers in those specialties. The premise is "IF" they see it, they will "THEN" be it.

UT Southwestern has three IF/THEN Ambassadors, including Dr. Mirpuri, Nina Sanford, M.D., and Danielle Robertson, O.D., Ph.D. Dr. Sanford is an Assistant Professor of Radiation Oncology and Dr. Robertson is an Associate Professor of Ophthalmology. They were among 125 women selected nationwide in 2019 as Ambassadors based on contributions in their fields. UTSW's Ambassadors also obtained a grant from IF/THEN to further increase the visibility of female STEM pioneers.

The wall highlights 60 women with a mix of senior, midcareer, and junior faculty members. The women featured – selected by a committee based on objective criteria – are from multiple departments and specialties who have made an impact in advancing the science, education, and clinical care missions at UT Southwestern. Senior honorees include Larissa Velez, M.D., Professor of Emergency Medicine, Associate Dean for Graduate Medical Education, and a Distinguished Teaching Professor; Helen Hobbs, M.D., Director of the Eugene McDermott Center for Human Growth and Development, a Howard Hughes Medical Institute Investigator, and member of the National Academy of Sciences (NAS); and Joan Conaway, Ph.D., Vice Provost and Dean of Basic Research, Professor of Molecular Biology, and a member of the NAS.

While UTSW has several walls of honor, Dr. Mirpuri said the project honoring female trailblazers is the first of its kind here and "will have a tremendous impact at so many levels."

Featuring a striking architectural lenticular design, the contemporary wall will be refreshed every three to five years to reflect additional women who contribute to the mission and success of UTSW.

When UTSW was originally founded as Southwestern Medical College in 1943, women faced significant barriers to entering the medical profession. Those who persisted became fundamental to the success of this institution. Celebrating Breakthroughs Together honors the resilience of these women while showcasing the increasing

gender and ethnic diversity at UT Southwestern, Dr. Mirpuri noted.

The wall is accompanied by a streaming video of the history of trailblazing women at UTSW and a website that highlights 100 of them who have made breakthroughs. Features of the website include quotes, stories, and advice from the women on their STEM journeys.

The website will be updated regularly to display the accomplishments of more women on campus. The streaming video next to the wall features a timeline component that traces the contributions of women throughout UTSW's history, including, among others, Gladys J. Fashena, M.D., one of the first female faculty members of Southwestern Medical College.

Drs. Mirpuri and Yin's plans for the project extend into the future and will include an annual fireside chat between students and female faculty honorees. The first fireside chat was held July 19 after the official unveiling of the wall with invited students, including those from the STARS (Science Teacher Access to Resources at Southwestern) and SURF (Summer Undergraduate Research Fellowship) programs. They hope the project also resonates with UTSW's early career female faculty members, making them "even more passionate about achieving their career goals," Dr. Mirpuri said.

The project is a collaboration among multiple UTSW components, including the Office of the President, the Office of Faculty Affairs/Office of Women's Careers, and the Office of Communications, Marketing, and Public Affairs. Faculty, staff, and students on campus were also involved in vetting the design, goals, and guidelines for those chosen to be included on the wall through multiple focus groups.

"After over two years of planning, all those involved are truly celebrating the realization of this installation and are hopeful it will have a significant impact for all that experience it," Dr. Yin said.

*Dr. Conaway holds the Cecil H. Green Distinguished Chair in Cellular and Molecular Biology.*

*Dr. Hobbs holds the 1995 Dallas Heart Ball Chair in Cardiology Research, the Philip O'Bryan Montgomery, Jr., M.D. Distinguished Chair in Developmental Biology, and the Eugene McDermott Distinguished Chair for the Study of Human Growth and Development.*

*Dr. Sanford is a Dedman Family Scholar in Clinical Care.*

*Dr. Velez holds the Michael P. Waincott, M.D. Professorship in Emergency Medicine.*

*Dr. Yin holds the Peter and Jean D. Dehlinger Professorship in Biomedical Science and the Margaret Yin Chair for the Advancement of Women Faculty.*



The wall features photos and profiles of 60 UTSW female faculty members selected by a committee.



Five UTSW faculty members including those featured on the wall or website answer questions during a July 19 fireside chat at the display's official launch.



Workers with Mecca, subcontractors to designing agency Johnson & Sekin, complete the installation.

# Graduate School Class of 2022 celebrates commencement

On May 19, the UT Southwestern Graduate School of Biomedical Sciences held its graduation in the Tom and Lula Gooch Auditorium on South Campus. Eighty-nine students earned doctorate or master's degrees in commencement exercises that recognized 2021 and 2022 graduates. David Russell, Ph.D., Professor Emeritus of Molecular Genetics and former Dean of Research, delivered the commencement address.

See photo highlights from the celebration below.

**More online:** To see more photos from the commencement ceremony, go to *Center Times Plus* at [utsouthwestern.edu/ctplus](https://utsouthwestern.edu/ctplus).



Eighty-nine students earned doctorate or master's degrees in the ceremony that recognized 2021 and 2022 graduates.



Graduate Aarin Jones is hooded by her mentor, W. Lee Kraus, Ph.D., Professor of Obstetrics and Gynecology and Pharmacology and Director of the Cecil H. and Ida Green Center for Reproductive Biology Sciences.



Graduates begin their procession to the auditorium.



Displaying proud graduate attitude (from left) are Yuqing Zhang, Junqiu Zhang, and Junjie Ma.



UTSW leaders attending the prestigious occasion include (from left) President Daniel K. Podolsky, M.D.; W. P. Andrew Lee, M.D., Executive Vice President for Academic Affairs, Provost, and Dean of UT Southwestern Medical School; and Joan Conaway, Ph.D., Vice Provost and Dean of Basic Research.



Carlos Paz is hooded by James Collins, Ph.D., Associate Professor of Pharmacology.



Keynote speaker David Russell, Ph.D., Professor Emeritus of Molecular Genetics and former Dean of Research, shared words of encouragement and advice with the graduates.

## UT Southwestern Graduate School of Biomedical Sciences Candidates for Degrees

Congratulations to the Graduate School Classes of 2021 and 2022. Eighty-nine students celebrated earning doctorate and master's degrees at a May 19 commencement ceremony in the Tom and Lula Gooch Auditorium on South Campus.

### DOCTOR OF PHILOSOPHY

#### Biological Chemistry

Alberto Bremauntz Enriquez  
Wen Chuan Hsieh  
Zane Miller Johnson  
William Peeples  
Anna Maurine Scarborough  
DaNae Rochelle Woodard

#### Biomedical Engineering

Anjali Balagopal  
Lukas J. Farbiak  
Tianshi Lu  
Junjie Ma  
Lin Ma  
David Hamilton Saucier  
Qi Wang  
Yiming Wang  
Ze Zhang (posthumous)

#### Cancer Biology

Emily Nicole Arner  
Huiyu Li  
Austin Bradley Moore

Le Qi

Tracy Ibarra Rosales  
Josiah Malachi Voth Park  
Junqiu Zhang  
Yuqing Zhang

#### Cell and Molecular Biology

Amanda Goldner  
Xuexia Jiang  
Isara Laothamatas  
Victor Antonio Lopez  
Brenden Chul Park  
Carlos Alberto Paz  
Aracely Alicia Romero  
Whitney Leigh Stuard

#### Clinical Psychology

Tahnae Tarkenton Allen  
Carolyn Kuniko Cassill  
Marielle Heather Collins  
Laura Alexandra Frazee  
Jessica Anne Harper  
Saba Saleem Masood  
Ashlyn Alyce Parides  
Allison Nicol Parker  
Kylie Sligar

#### Genetics, Development, and Disease

Ningyan Cheng  
Andrew Seungjae Chung  
Mingjian Du

Mahmoud Mohamed Elguindy  
Robert Charles Harris  
Jeremiah David Herbert  
Samantha Tori Johnson  
Aarin Jones  
Sojeong Jun  
Boxun Li  
Chase Hunter Melick  
Marco Antonio Monroy  
Andres Ramirez Martinez  
Anne Regina Ryan  
Anu Thomas  
Michael Nguyen Trinh  
Qianbin Zhang

#### Immunology

Ian Nicholas Boys  
Fatma Sevde Coskun  
Eric Jonathan Hsu  
Margaret Mae McDaniel  
Benjamin Ik Moon  
Casey Elizabeth Moore  
Garrett Ray Overcast  
Mihir Vidyadhar Pendse  
Vanessa Torres  
Xintao Tu

#### Molecular Biophysics

Paul Joseph Blazek  
Whitney Nicole Costello  
Nicholas Paul Lesner

Thuy Ngoc Thi Nguyen  
Sean Whitney Rogers  
Karolina Paulina Stepien

#### Molecular Microbiology

Rachael Chanin  
Justin Mark Hansen  
Matthew Robert Lanahan  
Animesh Anand Mishra  
Nora-Guadalupe Piña Ramirez

#### Neuroscience

Yuh Tarng Chen  
Jun Guo  
Patricia Mary Horvath  
Mark Landy  
Anushka Christobel Wickramaratne  
Zhe Zhang

#### Organic Chemistry

Vaishnavi Narayanan Nair

#### MASTER OF SCIENCE

**Biological Chemistry**  
Elisa Lin

**Biomedical Engineering**  
Joel Liou

**Cell and Molecular Biology**  
Katerina Lynn Dague

# Radiofrequency ablation offers a nonsurgical treatment for thyroid nodules



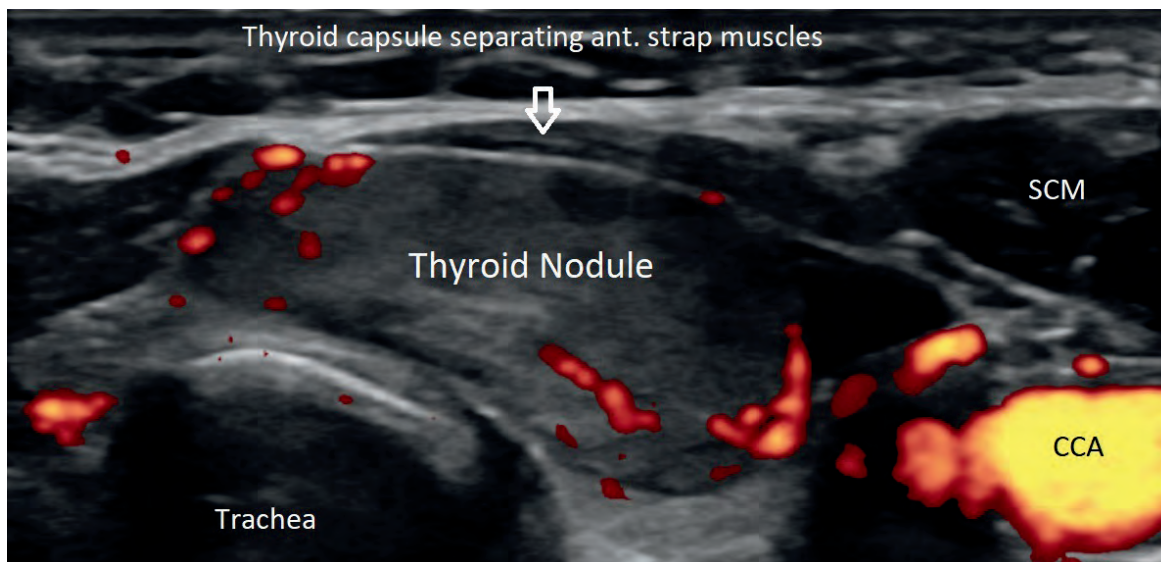
Iram Hussain, M.D.

By Cathy Frisinger

When Vickie Bell-Percival was offered the chance to have a nodule on her thyroid treated with a nonsurgical technique called radiofrequency ablation (RFA), she didn't hesitate.

"The options were surgery or RFA. My concerns were how invasive the treatment would be and how much time it would take to heal. I also wanted it done quickly. My doctor said she could schedule the ablation for Friday and – boom shakalaka! – it was done," Mrs. Bell-Percival said.

Earlier this year, Mrs. Bell-Percival became the first UT Southwestern patient to undergo RFA for her thyroid nodule. Although being the first made her experience special, Mrs. Bell-Percival, 68, a busy IT worker and matriarch of a large family, is typical of patients who will opt for this treatment over surgery.



An ultrasound picture of the thyroid nodule, seen as an oval gray mass, sitting on top of the trachea (windpipe). It is surrounded by the anterior strap muscles, sternocleidomastoid muscle, and common carotid artery.

Thyroid nodules – lumps that occur in the butterfly-shaped gland at the base of the neck – are so common that nearly half the population will develop one by age 60. They are more common in women than men and more likely to occur as people age. Although most thyroid nodules are noncancerous, even benign nodules can cause health problems, including persistent coughing, hoarseness, and difficulty breathing or swallowing. Large nodules can be disfiguring as well.

RFA uses an electrode with high-frequency current to generate heat to burn the tissue, leading to cell death and shrinking of the treated part over time, explained endocrinologist Iram Hussain, M.D., Assistant Professor of

Internal Medicine. Dr. Hussain, who was Mrs. Bell-Percival's treating physician, is a member of the Harold C. Simmons Comprehensive Cancer Center and specializes in treating thyroid nodules.

"We use ultrasound guidance with a parallel approach throughout the procedure so we can see the entire needle in real time, reducing the risk of complications," Dr. Hussain said. "RFA has several advantages over surgery. The patient won't need general anesthesia, won't have an incision or scarring, won't need thyroid medicine, and will be able to resume their normal routines in a shorter time."

RFA has long been used to treat liver tumors, varicose veins, and

other conditions. Since it received FDA approval in 2018, a handful of medical centers, including UT Southwestern, have begun using the technique to treat benign thyroid nodules as well.

Mrs. Bell-Percival's nodule, which was without symptoms at first, was discovered by another UT Southwestern physician, G. Sunny Sharma, M.D., Assistant Professor of Physical Medicine and Rehabilitation, who was treating her for back and neck pain.

"Dr. Sharma did some X-rays and discovered the nodule. I'm so grateful to him for finding the nodule and for then referring me to Dr. Hussain. I love the way UT Southwestern doctors work together," Mrs. Bell-Percival said.



Vickie Bell-Percival

Dr. Hussain immediately did a fine needle aspiration biopsy and reassured Mrs. Bell-Percival that the nodule was noncancerous. Since she had no symptoms, no treatment was needed at the time.

But the nodule continued to grow, and six months later, Mrs. Bell-Percival was having trouble swallowing. By March, she was ready for something to be done, and that's when Dr. Hussain told her about RFA.

On the day of the procedure, Mrs. Bell-Percival said, everything went smoothly.

"There wasn't any pain associated with it, just a little discomfort very briefly. The whole thing took less than 30 minutes. Easy-breezy," Mrs. Bell-Percival recalled.

**More online:** Read the full story in the newsroom at [utsouthwestern.edu/newsroom](https://utsouthwestern.edu/newsroom).

## Lehmann appointed inaugural Associate Dean of Clinical Informatics

By Patrick Wascovich

Christoph Lehmann, M.D., Professor of Pediatrics and Population and Data Sciences, has been appointed inaugural Associate Dean of Clinical Informatics, charged with leading UT Southwestern's expansion in this field that harnesses the power of big data to improve patient care.

UTSW's Clinical Informatics Center (CIC) was established in 2019 to develop, implement, and evaluate clinical informatics solutions for health care providers and train practitioners in the field. Led by Dr. Lehmann, the CIC has grown to include seven members and about two dozen affiliated faculty, launched a monthly colloquium that provides health information technology updates, and welcomed the first students to a new Master of Science in Health Informatics program. The CIC is also a founding member of the Texas Health Informatics Alliance.

"As a health care system, we generate data as a byproduct of patient care. These data can be leveraged to develop innovations for the health care system, which can be applied in

the clinical setting and measured. That is what clinical informatics does," said Dr. Lehmann, who also holds an appointment in the Lyda Hill Department of Bioinformatics. "We are starting to go beyond just the development of machine-learning models and actively working on implementing these models using the appropriate care, ethical considerations, and human oversight. We want our clinicians to benefit from our insights and enable them to better take care of their patients."

Eric Peterson, M.D., M.P.H., Vice Provost and Senior Associate Dean for Clinical Research, said UT Southwestern has made significant strides in clinical informatics in a short time frame across the institution.

"Under Dr. Lehmann's leadership, the Clinical Informatics Center quickly became known for innovative research in clinical informatics and related domains, the Master of Science in Health Informatics was developed and launched, and a new fellowship program is starting this summer," said Dr. Peterson, also Professor of



Christoph Lehmann, M.D.

Internal Medicine. "In his new role, Dr. Lehmann supports investigators who leverage the electronic health record and other data sources for research, and he helps propel UT Southwestern to become a national model for data democratization and innovative interventions."

Faculty and staff of the Center collaboratively focus their efforts across a wide spectrum of

efforts and research, including general clinical informatics; consumer informatics; knowledge architecture; clinical decision support; people, organizations, and technology research; and analytics and modeling.

Clinical informatics will be integrated into research and educational programs at UT Southwestern's newest school, the Peter O'Donnell Jr. School of Public Health, which plans to welcome its first students next year.

Previously, the CIC helped to establish the two-year Master of Science in Health Informatics (MSHI) program at UTSW administered through the Graduate School of Biomedical Sciences, as well as a two-position Fellowship Program in Clinical Informatics that will start in July.

*Dr. Lehmann holds the Willis C. Maddrey, M.D. Distinguished Professorship in Clinical Science.*

*Dr. Peterson holds the Adelyn and Edmund M. Hoffman Distinguished Chair in Medical Science.*

## Raynor Continued from page 1

with many neurodevelopmental disorders, including autism, and is considered a contributor to motor, cognitive, and behavioral challenges.

The Raynor Cerebellum Project was established through the support of Geoffrey Raynor, founder of the Once Upon a Time Foundation. The project intends to bring together the world's top experts in cerebellar research and care to launch a broad range of scientific investigations – from basic understanding of related neural circuitry to translational studies with patients aimed at identifying and evaluating potential therapeutic targets.

"Mounting evidence over the past decade has pointed to a role for the cerebellum in cognition and social skills," said Daniel K. Podolsky, M.D., President of UT Southwestern. "The bold vision of the Foundation's Raynor Cerebellum Project will allow UT Southwestern to bring together the needed expertise, collaboration, and technological prowess to advance scientific understanding and clinical insight with the goal of developing effective therapies for cerebellar disease and ultimately preventing

cerebellar dysfunction in both children and adults."

The Raynor Cerebellum Project will leverage investments made in UT Southwestern's Peter O'Donnell Jr. Brain Institute through its Campaign for the Brain, with key infrastructure now in place to accelerate progress in understanding and developing novel treatments for cerebellar disorders.

"Rapid advances in several technologies – including brain imaging, genetics, and laboratory techniques enabling precise mapping and manipulation of connected brain regions – are powering this new understanding of the cerebellum and its functions and hold great promise for future discoveries critical for better therapeutics," said William Dauer, M.D., Director of the O'Donnell Brain Institute. "There has never been a more promising time for this kind of ambitious effort."

The Fort Worth-based Once Upon a Time Foundation has been a philanthropic partner to UTSW for nearly 20 years, investing in some of the most important work underway at the Medical Center, ranging from emergency medicine to neurology research

to precision cancer treatments. Previously, the Foundation has given more than \$14.1 million to UT Southwestern. The addition of this \$25 million grant will bring the Foundation's total giving to UT Southwestern to almost \$40 million.



"My father was a neurosurgeon, and I was a philosophy major in college. I have always been fascinated with unraveling the mysteries of the brain. We are thrilled to substantially increase our giving to create the Raynor Cerebellum Project – an effort with the magnitude to change the landscape of neurological medicine forever," Mr. Raynor said. "Existing cerebellum research has suffered from a piecemeal approach, which has necessitated a need for focus and a streamlined path to treatments for those suffering from cerebellar dysfunction. The Raynor Cerebellum Project will be a collaboration of the best minds with a Manhattan

Project-like focused, results-oriented approach. Our goal is to find the shortest path to improving the lives of patients suffering from cerebellar disorders. Timing is critical as these patients cannot wait."

To accomplish this, the RCP-UTSW will:

- Recruit a major leader in cerebellar research to serve as the Scientific Director of the RCP-UTSW and to build an expert team at UT Southwestern.
- Seek out leading experts in cerebellar function and dysfunction from around the world.
- Convene a Cerebellum Summit at UT Southwestern and subsequently host annual follow-up summits and symposia on cerebellar research to critically evaluate progress and update research goals to reflect experimental results.
- Prepare a comprehensive plan for solving cerebellar dysfunction, including major goals, key experts, and technologies required to carry out the vision.
- Launch research efforts at UT Southwestern and external sites with \$8 million of the \$25 million earmarked for research grants, to be directed by a committee comprised

of Foundation, UTSW, and outside experts all in support of the RCP-UTSW primary mission.

"UT Southwestern is well positioned to deliver on this complex priority – aligning internal strengths in medication-based methods, experiential programs, neuromodulation, genetics, bioinformatics, and biomedical engineering with external collaborations to extend the reach of these investigations," Dr. Podolsky said. "Improving our understanding of cerebellar function, and importantly, our ability to repair and prevent dysfunction, represents a pioneering effort in this understudied arena that holds great promise for improving the lives of patients and families affected by cerebellar dysfunction."

*Dr. Dauer holds the Lois C.A. and Darwin E. Smith Distinguished Chair in Neurological Mobility Research.*

*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.*