

CENTER TIMES

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CAMPUS EDITION

Medical School Class of 2021 celebrates Match Day

Soon-to-graduate students learn where they will serve their residencies in virtual event

By Patrick Wascovich

Months of anticipation turned to instant excitement for 207 fourth-year medical students on Friday, March 19, as they joined together via computer on Match Day to learn where they will train as residents.

For a second consecutive year, Match Day for UT Southwestern medical students and many others nationwide became a virtual event due to the coronavirus pandemic. Instead of gathering together in person to open their envelopes in the Bryan Williams, M.D. Student Center, UT Southwestern academic leaders organized a virtual meeting where students could join 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. Charles Ginsburg, Vice Provost and Senior Associate Dean for Education, along with many other faculty, to cele-

brate the milestone as students neared graduation. Many joined to watch the countdown clock and hear the drumroll – both UT Southwestern traditions – before opening their long-awaited email notifications.

“The Medical School Class of 2021 marks a group of medical professionals who straddle two very different time periods in medicine – before COVID-19 and after COVID-19,” said Dr. Melanie S. Sulistio, Associate Dean for Student Affairs. “Not surprisingly, because of their unique experiences and perspective, these students are incredibly resilient, graceful under pressure, and have risen far beyond the call to serve others.”

This year’s seniors, as well as their faculty instructors, had to pivot at a key clinical phase of their medical education before continuing to operate in a new landscape throughout their final year, said Dr. Angela Mihalic, Dean of

Please see MATCH DAY on page 4



More than 200 UT Southwestern Medical School students celebrated simultaneously with medical students nationwide at 11 a.m. CDT on Friday, March 19, when they opened emails revealing where they matched for residencies. See pages 4-5 for additional coverage, including photos and Match Day list.

Class of 2021’s top destinations for residency

1. UT Southwestern (56)
2. Baylor College of Medicine (10)
3. Emory University School of Medicine (7)
4. UT Austin Dell Medical School and McGovern Medical School at UTHealth (tied-6)
5. UT Health Science Center at San Antonio and University of Washington Affiliated Hospitals (tied-5)

Howell-Stampley named Master of Cary College

By Lori Sundeen Soderbergh

Dr. Temple Howell-Stampley has been named Master of Cary College at UT Southwestern Medical School, succeeding Dr. Arthur Sagalowsky, who retired from that role after 10 years.

Dr. Howell-Stampley is a Professor of Internal Medicine and Department Chair and Program Director of the Physician Assistant Studies program in the School of Health Professions. She has served as a Cary College mentor for the past four years and will be the first African American female physician to hold the title of Master of an academic college at UT Southwestern.

“What a wonderful opportunity to play a role in developing future health care professionals,” said Dr. Howell-Stampley, a UTSW faculty member since 1997. “Mentorship of students and faculty is one of my passions.”

Cary College is one of six colleges at the Medical School, along with Estabrook, Fashena, Pritchard, Seldin, and Sprague. Students are assigned to a college at the beginning of their first year, helping them transition to Medical School life by fostering friendly competition, collaboration, common bonds, and camaraderie. Each academic college has 10 or more faculty mentors who oversee about six students each. In addition to individual and group

mentoring, the colleges provide a learning environment in which clinical and professional skills are taught and modeled by the mentors. The students also engage in team-based learning activities that further their knowledge of medical ethics and professionalism, both of utmost importance in the practice of medicine. The long-term goal is to develop excellent physicians who are caring, compassionate, and empathetic.

“Mentorship matters,” Dr. Howell-Stampley said. “It has played an important role in my own life and I believe it’s my duty to give back to others.” She oversees Cary College, both mentors and mentees, to ensure that the students develop strong professional and clinical skills while establishing solid support networks. The new role expands her own path of service.



Dr. Temple Howell-Stampley

“Throughout my formative years, I was naturally drawn to science and ultimately developed a passion for it. I also had a strong desire to be of service to others that was instilled in me by my mother. Medicine was my chosen path to unite both of those passions,” said Dr. Howell-Stampley.

During her time at UT Southwestern, she has seen the importance of diversity and inclusion expand in many ways. Of the six academic colleges, half are now led by women as college masters.

“Dr. Howell-Stampley is an accomplished clinician and educator,” said Dr. William Gary Reed, Associate Dean for Quality, Safety, and Outcomes Education and Headmaster of Academic Colleges. “We are excited and honored that Dr. Howell-Stampley has agreed to assume this important position.”

Dr. Howell-Stampley holds the P. Eugene Jones, Ph.D., PA-C Professorship in Physician Assistant Studies, and the Cissy and W. Plack Carr, Jr. Professorship in Medical Education.

Dr. Reed holds the S.T. Harris Family Distinguished Chair in Internal Medicine, in Honor of Gary Reed, M.D., and the Eva A. Rosenthal Professorship in Internal Medicine, in Honor of Gary Reed, M.D.

UTSW quality and safety improvements boost rankings – and save more than 500 lives

By Patrick McGee

Dr. Sterling Overstreet has noticed a tremendous change in the Emergency Department in recent years. It’s not the result of COVID-19 – or even because of any physical changes to the ER space. Rather, it reflects a cultural shift at UT Southwestern in which teams of doctors and nurses are working more efficiently, saving more lives.

For example, by reworking how patients are diagnosed and treated for sepsis, deaths related to the bloodstream infection have decreased by 40 percent

since January 2018 at UT Southwestern’s William P. Clements Jr. University Hospital.

“Antibiotics get in the patient over 100 minutes faster whenever we’re using the established order set for sepsis,” said Dr. Overstreet, Assistant Professor of Emergency Medicine and Quality Officer for Health System Affairs. “Overall, the patient receives treatment significantly faster, which we know reduces mortality.”

This and other changes have been implemented over a period of two and a half years at Clements University Hospital and

Please see QUALITY on page 7

Studies shed light on how, where the body can add beneficial fat cells

By Carol Marie Cropper

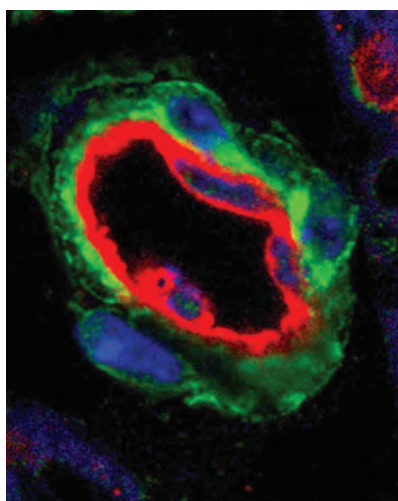
Gaining more fat cells could help in the fight against diabetes and other diseases. Two new studies from UT Southwestern provide insight into how and where the body adds those cells.

The studies, published recently in *Cell Stem Cell*, describe two processes that affect the generation of new fat cells. One reports how fat cell creation is impacted by the level of activity in tiny organelles inside cells called mitochondria. The other outlines a process that prevents new fat cells from developing in one fat storage area in mice – the area that correlates with the healthy

subcutaneous fat just under the skin in humans. This second study also found that a commonly used cancer drug could jump-start healthy fat cell creation in mice, raising the possibility of future drug treatments for humans.

While fat isn’t popular, as long as people overeat they will need a place to store the excess calories, explained Dr. Philipp Scherer, Director of the Touchstone Center for Diabetes Research and senior author of the first study focusing on mitochondria. There are two options, he said: squeezing more lipids (fat) into existing fat cells and ballooning their size, leading to problems such as inflam-

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This image shows a blood vessel in fat tissue, surrounded by fat progenitor cells (in green).

More inside on page 2: Study identifies trigger for the chronic inflammation leading to obesity and connections between the pandemic, mental health, and overeating.

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Visit our website at utsouthwestern.edu/ctplus

STATE OF THE CAMPUS

UT Southwestern President Dr. Daniel K. Podolsky and other executive leaders share accomplishments of the past year and priorities going forward.

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AUTISM RESEARCH ADVANCES

One study identifies a gene linked to autism while another uses songbirds to investigate speech development.

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FIGHTING COVID-19

Dr. Kizzmekia Corbett shares insights as a prominent NIH researcher at the forefront of COVID-19 vaccine development.

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OBESITY RESEARCH ADVANCES

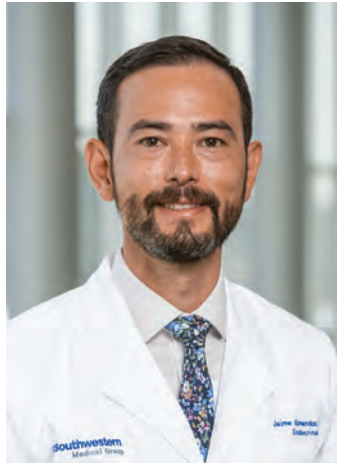
Pandemic increases substance abuse, mental health issues for those struggling with obesity

By Lori Sundeen Soderbergh

The COVID-19 pandemic is having a detrimental impact on substance use, mental health, and weight-related health behaviors among people with obesity, according to research findings from UT Southwestern and the UTHealth School of Public Health.

The study, published in *Clinical Obesity*, surveyed 589 patients with obesity (defined as a body mass index of 30.0 or higher) who are enrolled in the UT Southwestern Weight Wellness Program, a multidisciplinary weight management and post-bariatric care clinic. Nearly half of the group reported using recreational drugs and alcohol, and 10 percent reported increased use since the start of the pandemic. Seventeen of the patients have tested positive for COVID-19.

Almost a quarter (24.3 percent) of the patients reported using opioids in the 30 days preceding the survey and nearly 10 percent reported using sedatives or tranquilizers. Patients were surveyed from June 1, 2020, to Sept. 30, 2020, after COVID-19 stay-at-



Dr. Jaime Almandoz

home orders had been lifted in North Texas.

"Many patients with obesity are also challenged by mental health conditions. Those who reported anxiety, depression, and trouble sleeping were two to four times more likely to increase their use of substances. For those who reported stress eating, there was a sixfold increase in substance use," said study author Dr. Jaime Almandoz, Assistant Professor of Internal Medicine and Medical Director of the Weight

Wellness Program.

According to the Centers for Disease Control and Prevention, more than 42 percent of American adults have obesity. Obesity-related health conditions include heart disease, stroke, Type 2 diabetes, and certain types of cancer that are some of the leading causes of preventable, premature death.

Nearly 70 percent of the patients reported that it was more difficult to achieve their weight loss goals during the pandemic, with about half spending less time on exercise. These findings were similar to another paper authored by Dr. Almandoz last year, which was one of the first studies to show the impact of shelter-in-place orders on health behaviors in people with obesity.

"This study demonstrates that adults with obesity continued to engage in the same behaviors and struggled with mental health challenges, even after lockdown orders were lifted. We need to develop interventions targeting these vulnerable groups, such as telehealth options and outreach efforts," said senior author Dr.

Sarah Messiah, an Adjunct Professor of Population and Data Sciences who is now affiliated with the UTHealth School of Public Health.

The researchers noted that the patients surveyed were predominantly white, college-educated individuals with middle- to high-income levels. Thus, the survey results may not be generalizable to other populations and may not accurately assess the burden of the pandemic on obesity-related health behaviors in lower socioeconomic status and/or ethnic minority populations disproportionately affected more by obesity and COVID-19. The survey participants were established weight management patients with health insurance – not representative of the average American challenged with obesity, in which less than 2 percent receive anti-obesity medications and fewer than 1 percent undergo bariatric surgery.

More online: Read the full story on *Center Times Plus* at utsouthwestern.edu/ctplus.



Blood vessel cells implicated in chronic inflammation of obesity

By Sarah Williams

When fat cells in the body are stuffed with excess fat, the surrounding tissue can become chronically inflamed, which is one of the driving factors behind many of the diseases associated with obesity. UT Southwestern scientists recently discovered a type of cell responsible in mice for triggering this inflammation in fat tissue. Their findings, published in *Nature Metabolism*, could eventually lead to new ways to treat obesity.

"The inflammation of fat cells in individuals with obesity is linked to many of the comorbidities we associate with being overweight – cancer, diabetes, heart disease, and infection," said study leader Dr. Rana Gupta, Associate Professor of Internal Medicine. "By identifying these cells, we've taken a step toward understanding some of the initial events that contribute to that inflammation."

When a person consumes more calories than needed, the excess calories are stored in the form of triglycerides inside fat tissue, also known as white adipose tissue (WAT). Researchers know that in people with obesity, WAT becomes overworked, fat cells begin to die, and immune cells become activated. But the exact mechanism by which this inflammation occurs isn't fully understood.

While many studies have focused on the signaling molecules produced by the fat cells or immune cells in WAT that might contribute to inflammation, Dr. Gupta's team took a different approach. They focused instead on the vessels that carry blood – as well as immune cells and inflamma-

tory molecules – into WAT.

In 2018, Dr. Gupta and his colleagues identified a new type of cell lining these blood vessels in mice – an adipose progenitor cell (APC), or precursor cell that goes on to generate mature fat cells. But unlike most APCs, the new cells – dubbed fibro-inflammatory progenitors, or FIPs – produced signals that encouraged inflammation. In the new work, the researchers looked more closely at the role of the FIPs in mediating inflammation.

Within just one day of switching young male mice to a high-fat diet, Dr. Gupta and his colleagues discovered that the FIPs quickly increased the number of inflammatory molecules produced. After 28 days on a high-fat diet, they found a substantial increase in the proportion of FIPs compared with other APCs.

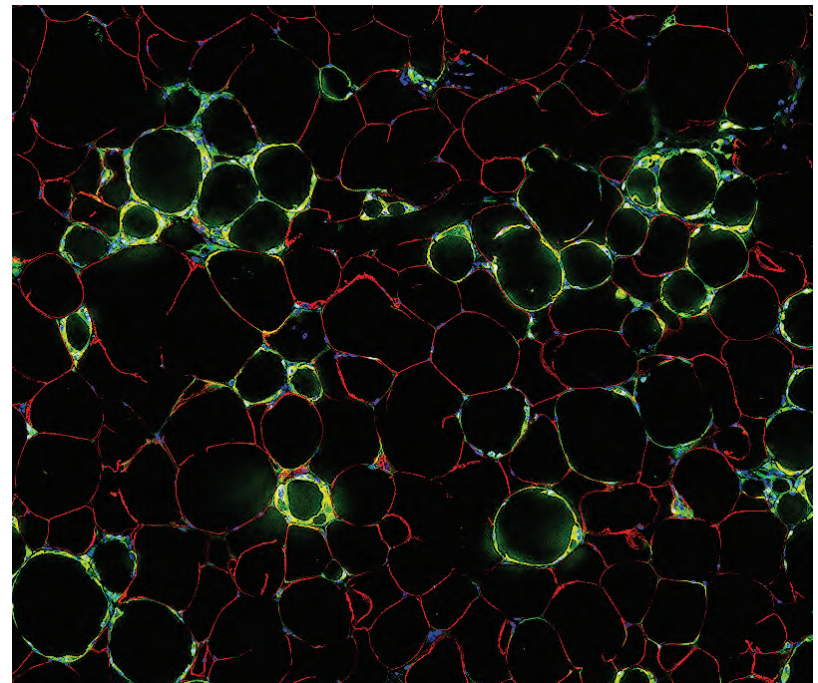
"This is the first study to demonstrate that these cells play a very active, early role in being gatekeepers of inflammation in fat tissue," said Dr. Gupta.

Dr. Gupta and his colleagues went on to show that increasing levels of a related signaling molecule, ZFP423, in FIPs can also ameliorate the inflammation in mouse fat cells.

"It looks like ZFP423 could be an important brake in terms of slowing the inflammatory signals in these cells," said Dr. Gupta. "Of course, it remains to be seen if that's true in humans as well as mice."



Dr. Rana Gupta



A UTSW study identified a type of blood vessel cell that triggers inflammation in fat tissue. Above, inflammatory immune cells (green) surround fat cells (red) in obesity and contribute to the development of metabolic disease.

More online: Read the full story in the newsroom at UTSouthwestern.edu/newsroom.

Fat Cells Continued from page 1

mation and, eventually, diabetes; or creating new fat cells to help spread the load. Fat stored properly – in fat cell layers under the skin (subcutaneous fat) that aren't overburdened instead of around organs (visceral fat) or even inside organs – is the healthy alternative, he said.

Problems follow if existing fat cells are left on their own to become engorged, added Dr. Rana Gupta, Associate Professor of Internal Medicine and senior author of the second study. "When these cells are so overwhelmed that they can't take it anymore, they eventually die or become dysfunctional, spilling lipids into places not intended to store fat," Dr. Gupta said.

Those lipids may move into the liver, leading to fatty liver disease; to the pancreas, resulting in diabetes; or even to the heart, causing cardiovascular disease. Visceral, or belly fat, may surround

the organs, creating inflammation. The healthiest place to store fat is in subcutaneous fat, Dr. Gupta said. Ironically, that is where mice in his study were least able to create new fat cells even though stem-cell-like progenitor cells primed to become fat cells were present there as well, he said.

Dr. Gupta's mouse study identified a process that prevents progenitor cells from developing into fat cells in mouse subcutaneous inguinal fat. The protein HIF-1a, central to the process, kicks off a series of cellular actions that ultimately inactivate a second protein called PPARgamma, the key driver of fat cell formation.

When researchers inhibited HIF-1a, progenitor cells could then make subcutaneous inguinal fat cells, and fewer were inflamed or fibrotic. Next, they tested the cancer drug imatinib and found it had the same effect. The drug was tried because it was known to have beneficial effects against diabetes in cancer patients with both diseases, Dr. Gupta said.



Dr. Philipp Scherer

In Dr. Scherer's study, researchers manipulated the protein MitoNEET in the outer membrane of the precursor cells' mitochondria. The resulting mitochondrial dysfunction and drop in cell metabolism caused precursor cells to lose the ability to become new fat cells and increased inflammation.

"This study shows we can manipulate the precursor cells' willingness to become fat cells," Dr. Scherer said. "The ability to recruit new fat cells by tickling these pre-fat cells to become fat cells is very important and has profound beneficial effects on health, particularly in the obesity-prone environment that we all live in."

Next, Dr. Scherer said his goal is to design a drug that could stimulate mitochondrial activity.

"Understanding the mechanism is an important first step," Dr. Scherer said, referring to the findings from the two studies. "We will have to learn in the future how to manipulate these processes pharmacologically."

First author of Dr. Scherer's study is post-doctoral researcher Dr. Nolwenn Joffin. In Dr. Gupta's study, the first author is Dr. Mengle Shao, Assistant Instructor of Internal Medicine.

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

More online: Read the full story on *Center Times Plus* at utsouthwestern.edu/ctplus.

CENTERTIMES

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Southwestern Health Resources ACO listed No. 1 in U.S. for Medicare savings

From Staff Reports

The Southwestern Health Resources (SWHR) Accountable Care Network saved Medicare more than \$52 million in 2019, placing it at the top of organizations participating in the Centers for Medicare & Medicaid Services (CMS) Next Generation Accountable Care Organization (ACO) Model. Since joining the Next Generation program in 2017, SWHR has saved the program nearly \$120 million.

Southwestern Health Resources, a clinically integrated health care network, was formed in 2015 by UT Southwestern and Texas Health Resources to broaden and simplify North Texans' access to leading medical care by blending the strengths of the state's largest health care providers.

SWHR is one of the 41 ACOs partic-

ipating in the Next Generation ACO Model, which is Medicare's highest-risk ACO model. SWHR's results represent more than 20 percent of total savings generated by all Next Generation ACOs. These savings are in addition to other discounts and other built-in reductions established by CMS. SWHR also saved more than any of the nation's approximately 550 regular Medicare ACOs.

SWHR coordinates care for nearly 100,000 Medicare beneficiaries in North Texas aligned through the Next Generation ACO Model – more than any other ACO in North Texas and the fourth largest in the nation. With this model, CMS sets predictable financial targets, enables providers and beneficiaries greater opportunities to coordinate care, and aims to attain the highest-quality standards of care. In accordance

with the Department of Health and Human Services, this accountable care model is evaluated on its ability to deliver better care for individuals, better health for populations, and lower growth in expenditures.

"These successful results reaffirm the effectiveness of our clinically integrated network of academic and community doctors and hospitals," said Dr. Andrew Ziskind, Senior Executive Officer of Southwestern Health Resources. "Being ranked No. 1 in the nation for the third year in a row further demonstrates the success of the physician-driven strategies SWHR has designed to build a stronger system of care. While we've achieved significant savings, we also have significantly improved the quality of care delivered to patients."

SWHR has been among the country's top-performing programs since

2015. It was approved in 2017 to participate in the Next Generation ACO Model.

Prior to this, SWHR achieved successful performance results as part of the CMS Medicare Shared Savings Program (MSSP), the national initiative to reduce costs by coordinating and delivering better health care for Medicare patients. This included delivering cumulative savings of \$73 million during a three-year period (for 2014, 2015, and 2016), combined with maintaining a top-decile quality score in the 95th percentile nationally. SWHR's quality scores improved 5 percent among established measures and 13 percent on preventive measures.

SWHR's network includes UT Southwestern faculty, Texas Health Physicians Group members, and independent community physicians. Formerly called the UT South-

western Accountable Care Network, the organization was among the first accountable care organizations to participate in the CMS Medicare Shared Savings Programs.

Southwestern Health Resources includes 29 hospital locations and more than 5,000 physicians and other providers. With more than 500 points of access to care, this provides for higher value and allows patients to access services across a full continuum of medical needs. The network coordinates care for approximately 700,000 people in 17 counties in North Texas. SWHR operates the nation's highest rated Next Generation Accountable Care Organization for savings.

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

MATCH DAY | 2021

A 'match' made virtually

UT Southwestern medical students share excitement of residency match reveals

By Nyshicka Jordan and Lori Sundeen Soderbergh

Medical school presents a four-year challenge, but those who cross the finish line and find their perfect match understand that the struggle is worthwhile. Several medical students from the Class of 2021 reflected on their unprecedented time at UT Southwestern, described what a residency match means to them, and shared their reactions upon learning where they are headed next.

Samantha Black



Match: UT Southwestern
Specialty: Dermatology
Reaction: "This is amazing news for my professional career and my family! I am beyond grateful to continue training at this fantastic institution."

Petra Constable



Match: McLennan County Family Medicine
Specialty: Family Medicine
Reaction: "I am so happy! God has been so gracious, and my family has been so incredibly supportive. I'm ready for you, Waco!"

Gray Umbach



Match: UC San Francisco
Specialty: Neurosurgery
Reaction: "I am just excited to know where I will be training and want to walk in Day One and focus on being the best resident I can be going forward."

Lucio Zapata Jr.



Match: University of Utah Health
Specialty: Dermatology
Reaction: "I was excited to see I matched at Utah because I feel like they expressed that they wanted me to be part of their team. I'm thankful to my mom, dad, siblings, and mentors. I could not have done this journey without them."

Tyler Huffaker



Match: UT Health San Antonio
Specialty: Internal Medicine
Reaction: "It's a whirlwind to experience life-changing events in different ways, with the birth of my twins and Match Day happening so close together, so I am looking forward to my future and all the possibilities that come with growing both my family and career."

Hai-Uyen Nguyen



Match: University of Washington Affiliated Hospitals
Specialty: Psychiatry
Reaction: "I'm ecstatic to continue my training next year at the University of Washington in Seattle. I'm so grateful to all of my mentors who have guided me through this application process, and I'm happy to be at a place where I'll receive great training."



Match Day went entirely virtual for the second straight year due to the pandemic. Medical students joined the group celebration from private gatherings and shared their announcements via the Zoom event and social media.

For 2021, the top five residency specialties selected by UTSW graduates were:

Internal Medicine	Psychiatry	Family Medicine
Pediatrics		Emergency Medicine

More online:

For more Match Day coverage, including videos, additional stories, and the full student spotlights, go to [Center Times Plus](https://www.centertimes.com/plus) at [utsouthwestern.edu/ctplus](https://www.utsouthwestern.edu/ctplus).

Match Day

Continued from page 1

Medical Students and Associate Dean for Student Affairs.

"These students were in the midst of their core clerkship rotations when the pandemic hit," Dr. Mihalic noted. "As we transitioned from virtual course offerings back into clerkships during the summer, their courage and determination to return to the hospitals and clinics to serve in a much-needed time and obtain the skills required to progress in their ability to care for patients was impressive."

The MS4s and their faculty mentors then had to adjust to a completely new set of rules, timelines, and processes during the residency application season, she added. Over the past year, visiting rotations at other hospitals were canceled, interviews transitioned to a virtual format, and application and selection dates were delayed.

"This is a historic year that will likely not be repeated. The faculty who serve as specialty advisers for the departments sprang into action to ensure that every student had the rotations, letters of recommendation, and guidance and practice with virtual interviews to succeed in the match," Dr. Mihalic said. "It was a pleasure working with the Class through the various challenges that we have faced together over the past year. I anticipate that the grit and determination they have demonstrated will benefit them in their residency training and future careers in medicine – and ultimately countless patients."

Each year, fourth-year medical students across the U.S. complete applications and deep-dive interviews for residency programs in the medical specialties of their choosing. The National Resident Matching Program (NRMP) then uses an algorithm to determine the highest match based off rankings given by both students and programs. The 2021 Main Residency Match was the largest in NRMP

history. There were 38,106 total positions offered, the most ever, and 36,179 filled.

"I could not be prouder of the Class of 2021. They have faced the circumstances of the past year with esprit de corps, determination, and grace," said Dr. Blake Barker, Associate Dean for Student Affairs. "They have taken advantage of every opportunity to develop their craft and respond to the needs of patients and our community. They are true leaders in the making, and I am genuinely honored to call them colleagues."

While Match Day 2021 at UT Southwestern and around the nation appeared much different than in recent years, it still reflected both the spirit of the Medical School community and medicine itself by honoring hard work and achievement

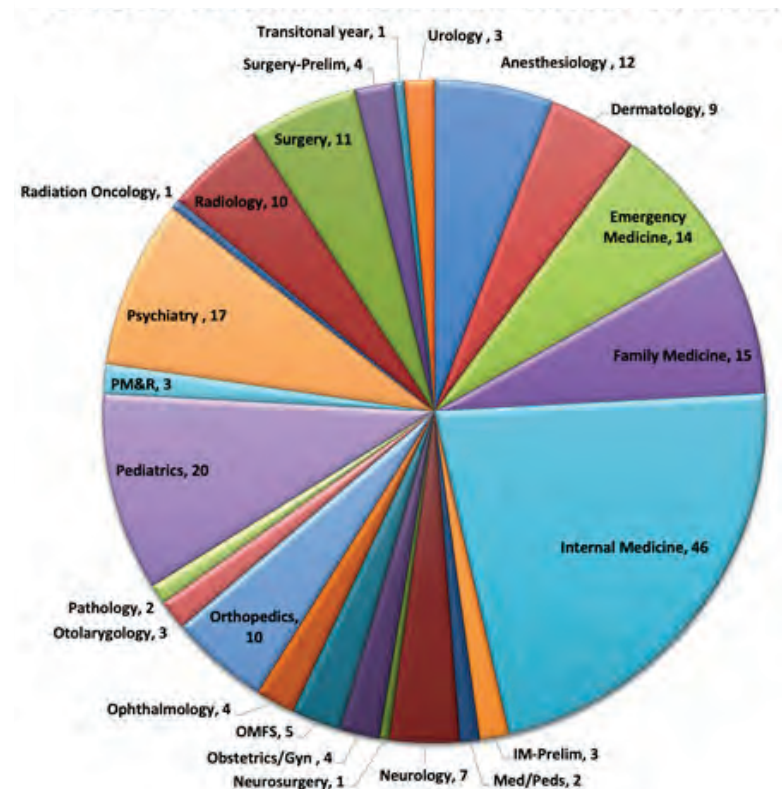
while bringing individuals together in a unique way that reflected the selflessness of medical professionals in this era of COVID-19. Of the 207 students who matched, 56 will serve their residencies at UT Southwestern and another 50 will train at other Texas medical institutions.

Dr. Ginsburg holds the Marilyn R. Corrigan Distinguished Chair in Pediatric Research.

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.

UTSW Match Results Class of 2021



MATCH DAY | 2021



HERE, GROUPED BY SPECIALTY, ARE THE MATCHES ACHIEVED BY MEMBERS OF THE UT SOUTHWESTERN MEDICAL SCHOOL CLASS OF 2021

ANESTHESIOLOGY

Jacqueline Chavez, U North Carolina Hosps; Sandra Chavez-Carmona, UT Southwestern; Rodney Chen, U Rochester/Strong Memorial, N.Y.; Anthony Dao, UT Southwestern; Jessica Fults, U Alabama Med Ctr-Birmingham; Kyle Gashler, Baylor COM, Houston; Kathryn Jan, UT Southwestern; Sadia Karani, Barnes-Jewish Hosp-Mo.; Sandy Kim, NYP Hosp-Columbia U Med Ctr, N.Y.; Brendan Swain, UT Southwestern; Kevin Truong, UT Med School, Houston; Judy Yang, NYP Hosp-Columbia U Med Ctr, N.Y.

DERMATOLOGY

Samantha Black, UT Southwestern (Transitional Year, John Peter Smith Hosp, Fort Worth); Christian Carr, UT Southwestern (Preliminary-Internal Medicine, UT Southwestern); Connor Hughes, UT Austin Dell Med School (Preliminary-Internal Medicine, Virginia Mason Med Ctr, Wash.); Stacy Kasitnon, UT Southwestern (Preliminary-Internal Medicine, Presbyterian Hosp, Dallas); Jeffrey Li, U Miami/Jackson Health System, Fla. (Transitional Year, Providence Sacred Heart Med Ctr, Wash.); Stephen Li, Northwestern McGaw/NMH/Va.-Ill. (Preliminary-Internal Medicine, Kaiser Permanente-San Francisco); Edgar Martinez, UT Austin Dell Med School (Transitional Year, Virginia Mason Med Ctr, Wash.); Lucio Zapata, U Utah Health (Preliminary-Internal Medicine, Amita St. Joseph Hosp, Ill.); Jane Zhu, UT Southwestern (Transitional Year, John Peter Smith Hosp, Fort Worth).

EMERGENCY MEDICINE

Jackson Agraz, U Virginia; Christian Brewer, U Oklahoma COM, Tulsa; Christian Davidson, NYP Hosp-Columbia & Cornell, N.Y.; Bryant Dixon, UT Southwestern; Cooper Hale, Northwestern McGaw/NMH/Va.-Ill.; Asher Horowitz, HCA Healthcare/USF Morsani GME-Oak Hill, Fla.; Ryan Itoh, UHS S Calif. Med Ed Consortium; Kathryn Krause, UT Southwestern; Kendra Maple, U Florida COM-Shands Hosp; Nikola Milanko, UT Southwestern; Stephen Rodriguez, Palm Beach Consortium for GME, Fla.; Carolyn Shanks, UT Southwestern; Bradley Upchurch, Indiana U SOM; Tyler Yates, Zucker, SOM-Northwell Staten Island U, N.Y.

FAMILY MEDICINE

Amber Allen, John Peter Smith Hosp, Fort Worth; Katherine Cantu, John Peter Smith Hosp, Fort Worth; Petra Constable, McLennan County Fam Med; Micah Gamble, Ventura County Med Ctr, Calif.; Leon Gu, HCA Houston Healthcare/U Houston; Sara Hassan Youssef, UT Med Branch, Galveston; Kevin Ma, PeaceHealth Southwest Med Ctr, Wash.; Emily Magallanes, John Peter Smith Hosp, Fort Worth; Jack McDaniel, UT Austin Dell Med School; Logan Mills, John Peter Smith Hosp, Fort Worth; Albert Mo, Memorial Hermann Hosp, Texas; Olivia Nguyen, Ventura County Med Ctr, Calif.; Akinjide Onifade, HCA Medical City Healthcare, Texas; Rigo Palomarez, CHRISTUS Health, Texas; Ashley Young, UT Med School, Houston.

INTERNAL MEDICINE

Khaled Al-hreish, Baylor U Med Ctr, Dallas; Hasan Ali, Baylor COM, Houston; Naveen Balakrishnan,



UT Southwestern; Neeraja Balachandar, UT Southwestern; Peter Butler, Emory U SOM, Ga.; Alvin Chung, Temple U Hosp, Pa.; Max Cruz, UT Rio Grande Valley; Christine Dang, U Miami/Jackson Health System, Fla.; Edward Daniel, Barnes-Jewish Hosp-Mo.; Pallavi Dev, UT Southwestern; Aseel Dweik, UT Southwestern; Calvin Geng, U Virginia; Jaskeerat Gulati, UT Southwestern; Sabhi Gull, UT Rio Grande Valley; Stephen Haff, Emory U SOM, Ga.; Waqas Haque, NYU Grossman SOM, N.Y.; Tyler Huffaker, UTHSC, San Antonio; Angelina Iylnbor, Yale-New Haven Hosp, Conn.; Anya Kalsbeek, U Utah Health; Keith Liu, Baylor COM, Houston; Jason Lu, Baylor COM, Houston; Nikhil Madhusudhan, UT Southwestern; Harris Majeed, U New Mexico SOM; Courtney McNeely, UT Med School, Houston; John Menchaca, Emory U SOM, Ga.; Leah Mikesky, Baylor U Med Ctr, Dallas; Navina Mohan, NYU Grossman SOM, N.Y.; Anika Morgado, Vanderbilt U Med Ctr, Tenn.; Reshma Narain, UT Southwestern; Danh Nguyen, UT Southwestern; Katherine Panettiere Kennedy, Johns Hopkins Hosp, Md.; Christine Park, Baylor COM, Houston; Colton Pence, NYP Hosp-Weill Cornell Med Ctr, N.Y.; Syed Rizvi, UT Southwestern; Ramiro Rodriguez, UT Rio Grande Valley; Kyle Saysana, Massachusetts General Hosp; Lauren Shaffer, Hosp of the U of Pa.; Sidrah Shah, Baylor COM, Houston; Anjanya Singh, Presbyterian Hosp, Dallas; Aaron Smith, UT Southwestern; Katelynn Smith, Duke U Med Ctr, N.C.; Catherine Sobieski, U Utah Health; Naveen Subramanian, UT Med School, Houston; Adrienne Walker, Baylor COM, Houston; Justin Wong, UC San Diego Med Ctr; Calif.; May Xac, UT Southwestern.

INTERNAL MEDICINE/PEDIATRICS

Zachary Blair, UT Southwestern; Samarth Shrivastava, UT Southwestern.

INTERNAL MEDICINE-PRELIMINARY

Neha Mulpuri, UT Southwestern; Kinnari Ruikar, UT Southwestern; Aemen Zamir, UT Southwestern.

NEUROLOGICAL SURGERY

Gray Umbach, UC San Francisco.

NEUROLOGY

Sonal Gagrani, UT Austin Dell Med School; Ramya Krothapally, UT Southwestern; Kayla Maaroufi, UT Southwestern; Trung Nguyen, UT Southwestern; Landon Simpkins, Tulane U SOM, La.; Michelle Tsai, Ochsner Clinic Foundation, La.; Ailing Yang, Beth Israel Deaconess Med Ctr., Mass. (Preliminary-Internal Medicine, Mt. Auburn Hosp, Mass.)

OBSTETRICS AND GYNECOLOGY

Laura Kenyon, UT Southwestern; Taylore King, Emory U SOM, Ga.; Sarah Manning, Wright State U-Wright State Air Force Base; Priyanka Mehta, Emory U SOM, Ga.

OPHTHALMOLOGY

Hamza Bhallii, LSUHSC, Shreveport, La.; Matthew Gregory, U Florida COM, Jacksonville (Preliminary-Surgery, U Florida COM, Jacksonville); Aishwarya Ramamurthi, UT Southwestern; Betty Tong, UT Southwestern.

ORAL AND MAXILLOFACIAL SURGERY

Scott Bueno, UT Southwestern; Michael Gross, UT Southwestern; Robert Hermann, UT Southwestern; Casey Lee, UT Southwestern; Andrew Naden, UT Southwestern.

ORTHOPEDIC SURGERY

Isabel Alvarez, Harbor-UCLA Med Ctr.; Alejandro Diaz de Leon, UC San Francisco-Fresno; Dang-Huy Do, UT Southwestern; Daniel Gelvez, LSU SOM, New Orleans; Jennifer Liu, Methodist Hosp, Houston; Terrul Ratcliff, UT Southwestern; Easton Ryan, Massachusetts General Hospital; Joshua Sun, UT Southwestern; Brian Wahlig, Mayo Clinic School of Graduate Med Educ, Minn.; William Young, UTHSC, San Antonio.

OTOLARYNGOLOGY

Nicholas George-Jones, U Iowa Hosps and Clinics; Connie Ma, Vanderbilt U Med Ctr, Tenn.; Flora Yan, Temple Univ Hosp, Pa.

PATHOLOGY

Blaine Berger, Baylor Scott & White Med Ctr, Texas; Joshua Pierce, UCLA Med Ctr.

PEDIATRICS

Jennifer Bachand, Children's Hosp, Boston; Zoe Brown, U Chicago Med Ctr, Ill.; Morayah Ciprien, UT Austin Dell Med School; Aya Embabi, UT Southwestern; Joseph Formella, UT Southwestern; Rohit George, UTHSC, San Antonio; Alexandra Ghaben, UC San Diego Med Ctr; Samuel Glick, UCLA Med Ctr; Allyson Liu, Baylor COM, Houston; Priya Mathew, UT Austin Dell Med School; Lakshmi Menon, U Oklahoma COM, Oklahoma City; Vi Pham, UT Southwestern; Meredith Rae, Baylor COM, Houston; Maya Rao, U Wash Affil Hosps; Leah Rushin, Morehouse School of Medicine, Ga.; Layla Samandi, Children's Hosp, Boston; Micah Tatum, U Wash Affil Hosps; Kyle Willett, U Virginia; Amy Xia, U Wash Affil Hosps; Kaili Yang, UT Southwestern.

PHYSICAL MEDICINE AND REHABILITATION

Kristin Bristow, UT Southwestern; Brandon Fletcher, UTHSC, San Antonio; Jasmina Solankee, UT Southwestern.

PSYCHIATRY

Darara Borodje, Vanderbilt U Med Ctr, Tenn.; Anna Davis, U Virginia; Esteban Garcia, HealthONE, Colo.; George Han, U Hosps, Jackson, Miss.; Christine Hernandez, UTHSC, San Antonio; Daniel Howard, UTHSC, Tyler; Michael Ji, Texas Tech U Affil, Lubbock; Min Hyung Lee, Zucker SOM-

Northwell Zucker Hillside, N.Y.; Hai-Uyen Nguyen, U Wash Affil Hosps; Justin O'Brien, UT Southwestern; Swetha Ramamurthy, UT Southwestern; Tiana Raphael, UCLA Semel Inst for Neuroscience; Kayla Robinson, U Colorado SOM, Denver; Sydney Singletery, U Illinois COM, Chicago; Tiffany Son, Barnes-Jewish Hosp-Mo.; Harini Suresh, Beth Israel Deaconess Med Ctr, Mass.

PSYCHIATRY/FAMILY MEDICINE

Thanos Rossopoulos, UC San Diego Med Ctr.

RADIATION ONCOLOGY

Jonathan Schoenhals, Ohio State U Med Ctr. (Preliminary-Internal Medicine, Med Coll Wisconsin Affil Hosps).

RADIOLOGY-DIAGNOSTIC

Alexander Bass, UT Southwestern (Preliminary-Internal Medicine, Presbyterian Hosp, Dallas); Bryan Bishop, U Utah Health (Transitional Year, Intermountain Med Ctr, Utah); Akilan Gopal, UT Med School, Houston (Transitional Year, Broward Health Med Ctr, Fla.); Diana Hoang, UT Med School, Houston (Transitional Year, HCA Houston Healthcare/U Houston); Darren Imphean, UT Southwestern (Preliminary-Internal Medicine, Presbyterian Hosp, Dallas); Aladdin Khalaf, Brookwood Baptist Health, Ala.; William Ou, Barnes-Jewish Hosp-Mo. (Preliminary-Internal Medicine, Presbyterian Hosp, Dallas); Nishitha Reddy, Emory U SOM, Ga. (Transitional Year, Riverside Community Hosp, Calif.); Lelia Williams, Baylor Scott & White Med Ctr, Texas (Transitional Year, John Peter Smith Hosp, Fort Worth); Chong Zhou, Yale-New Haven Hosp, Conn. (Preliminary-Internal Medicine, UTHSC, San Antonio).

SURGERY

Chukwubinyelum Amaechi, UT Southwestern; Joseph Balaban, U Tenn. Grad SOM, Knoxville; Sanjana Balachandra, SUNY HSC Brooklyn, N.Y.; Ricardo Garza, Texas Tech U Affil, El Paso; Omar Harirah, UT Southwestern; Eduardo Hernandez, HCA Medical City Healthcare, Texas; Natasha Houshmand, Johns Hopkins Hosp, Md.; Maya Hunt, Indiana U SOM, Ga.; Bernadette Peltier, Emory U SOM, Ga.; Priscilla Tanamal, LSU SOM, New Orleans; Zoe Tao, Oregon Health & Science U.

SURGERY-PRELIMINARY

Zachary Christian, Baylor COM, Houston; Daniel Mohammadi, U Wash Affil Hosps; Khanh Nguyen, UT Southwestern; Clementine Young, UT Southwestern.

TRANSITIONAL YEAR

Zachary Farni, Naval Med Ctr, Portsmouth, Va.

UROLOGY

Jorge Fuentes, Houston Methodist Hosp; Inkkaruch Kuprasertkul, Wash U; Jacob Stevens, U Wisconsin Clinical Science Ctr.

This list does not include matches for 2021 students who asked for no publicity, students pursuing alternative careers, or students who are taking a year off before starting their residency training.

ADVANCES IN AUTISM RESEARCH

Gene involved in autism spectrum disorder identified

By Erica Boehm

UT Southwestern scientists utilized forward genetics, a classic research technique, to identify genes involved in autism spectrum disorder (ASD). In a study in *eLife*, the researchers used this approach in mice to find one such gene called *KDMS5A*.

Approximately 1 in 54 children in the U.S. are diagnosed with ASD, a neurodevelopmental disorder that causes disrupted communication, difficulties with social skills, and repetitive behaviors. It is hypothesized that thousands of genetic mutations may contribute to ASD. But to date, only about 30 percent of cases can be explained by known genetic mutations.

For decades, forward genetics has been used to find mutations associated with various diseases. It involves inducing genetic mutations in mice, screening for certain phenotypes, and then identifying the causative mutation through sequencing of all genetic material of an organism, or its genome.

"The difficult part in the beginning was finding the mutations. It



had to be done by laborious cloning," said Nobel Laureate Dr. Bruce Beutler, Director of the Center for the Genetics of Host Defense at UTSW and study co-author. "We developed a platform wherein when you see a phenotype you know the mutational cause at the same time."

So, when a mouse displays a certain phenotype or trait of interest, the researchers would know almost instantly what genetic mutation was causing it. This technique, combined

with a screen developed to ascertain ASD-like behaviors in mice, made it possible to use forward genetics for the first time to identify new genetic mutations in ASD.

In this study, the research team documented the quality and number of vocalizations in young mice carrying induced genetic mutations. Given that one of the common characteristics seen in autism is disrupted communication, the researchers were on the lookout for mice that

had changes in these vocalizations.

"Initially we found that the quality of these vocalizations was different in mice with *KDMS5A* mutations. Looking more closely, we found that mice completely lacking *KDMS5A* have a severe deficit in the number of these vocalizations," said Dr. Maria Chahrouh, who led the study. Dr. Chahrouh is Assistant Professor of Neuroscience, Psychiatry, and in both the Eugene McDermott Center for Human Growth and Development and Center for the Genetics of Host Defense.

In addition to loss of vocalizations, mice lacking *KDMS5A* also displayed repetitive behaviors and deficits in social interaction, learning, and memory – all hallmarks of ASD.

Because this was the first time that *KDMS5A* had been implicated in ASD, the researchers looked into whether *KDMS5A* mutations could be found in patients with autism as well. Through international collaborative efforts, the group was able to identify nine patients with ASD and causative *KDMS5A* mutations. Strik-

ingly, eight out of nine patients also had a complete lack of speech.

This work will expand beyond *KDMS5A* as researchers search for more genes involved in ASD, a subject of research for which the simplicity and efficiency of forward genetics come in handy.

"The wonderful thing about forward genetics is that we can grind away at the genome. We know progressively how much of the genome we've saturated," said Dr. Beutler, who estimates that his group has already mutated about half of the mouse genome with this approach.

Dr. Beutler, also a Professor of Immunology and a Regental Professor, holds the Raymond and Ellen Willie Distinguished Chair in Cancer Research, in Honor of Laverne and Raymond Willie, Sr.

More online: Read the full story in the newsroom at UTSouthwestern.edu/newsroom.

Forming sound memories: Birdsong helps identify role of autism-associated gene

Inactivating gene prevents birds from learning fathers' songs, could shed light on speech development in humans

By Christen Brownlee

Inactivating a gene in young songbirds that's closely linked with autism spectrum disorder (ASD) prevents the birds from forming memories necessary to accurately reproduce their fathers' songs, UT Southwestern research suggests. The findings, published in *Science Advances*, may help explain the deficits in speech and language that often accompany ASD.

Mutations of this gene, *FoxP1*, are known to cause a specific subtype of autism associated with severe language impairment and intellectual disability.

Dr. Todd Roberts, Associate Professor of Neuroscience, said learning vocalizations for both songbirds and humans consists of two different stages: First, birds and humans must form a memory of sounds. Next, they practice the sounds through imitation.

To understand *FoxP1*'s role in this process, young zebra finches were split into two groups: Half the birds spent their early lives with their singing fathers; the other half were kept with their songless mothers and later joined their fathers. Either before the birds formed memories of the songs or before they began



Dr. Genevieve Konopka



Dr. Todd Roberts

practicing, Roberts and his colleagues used a technique called RNA interference to "knock down" *FoxP1* in the birds' high vocal center region of their brains. This technique used constructs created in the lab of study co-author Dr. Genevieve Konopka, Associate Professor of Neuroscience.

When the researchers analyzed the birds' songs in adulthood, they found that only those with active *FoxP1* during the song memorization phase were able to accurately reproduce their fathers' songs. If this gene was knocked down during the practice phase, these birds could still correctly mimic



the songs. However, birds in which *FoxP1* was inactivated before memorization sang haphazard songs that bore no resemblance to the ones their fathers sang.

"Our results suggest that *FoxP1* is key for forming the song memories in these birds that are critical for imitation later in life," said Dr. Roberts, a member of the Peter O'Donnell Jr. Brain Institute. "A similar deficit in humans could play a parallel role in speech develop-

ment, blocking babies from forming memories of adult speech they hear around them and hindering their own communication as they grow."

If this finding is reinforced in future studies, he added, it could lead to new types of therapy for children with autism. Current ASD therapies centered on speech development often focus on helping children learn the motor skills necessary to produce sounds. However, Dr. Roberts said, helping children form speech memories may be more important. In the future, he said, it may be possible to avoid speech deficits by replacing the missing *FoxP1* protein using gene editing or altering *FoxP1*-regulated signaling using pharmaceuticals.

Dr. Konopka is a Jon Heighten Scholar in Autism Research.

Dr. Roberts is a Thomas O. Hicks Scholar in Medical Research.

More online: Read the full story in the newsroom at UTSouthwestern.edu/newsroom.

CLASS NOTES

IN MEMORIAM

MEDICAL SCHOOL

Royce Laycock, M.D. ('54)
Thomas Preston Wood Jr., M.D. ('55)
John L. Gough, M.D. ('56)
George T. Devaney, M.D. ('57)
John "Frank" Stokes M.D. ('57)
Robert W. Noble, M.D. ('60)
Samuel "Ainslie" Shelburne Jr., M.D. ('60)
Minah Molly Hanson, M.D. ('61)
Van Q. Telford, M.D. ('65)
John B. Barnett, M.D. ('69)
Klaus O. Rees, M.D. ('70)
Andrea S. Granzotti, M.D. ('89)

GRADUATE SCHOOL

Clinton H. Howard ('54)

HOUSESTAFF

Loren V. Baker Jr., M.D.
James B. Cotner, M.D.
Col. Brian M. Davis, M.D.

SCHOOL OF HEALTH PROFESSIONS

David M. Lammers ('75)
Herbert P. Ozment ('89)
Linda Robbins Conlee ('92)

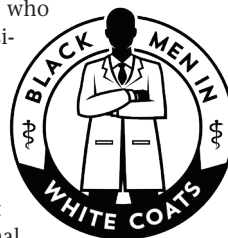
For the latest updates on alumni events and news, visit engage.utsouthwestern.edu/alumni and follow @utswalumni on Facebook.

Please send your Class Notes contributions or address changes to the Office of Development and Alumni Relations, UT Southwestern Medical Center, 5323 Harry Hines Blvd., Dallas, TX 75390-9009, email alumni@utsouthwestern.edu, or call 214-648-4539.

Experts discuss need for more Black male doctors amid release of 'Black Men in White Coats' documentary

In February, UT Southwestern held a virtual panel discussion to address the low number of Black men who pursue careers as physicians and the release of the documentary "Black Men in White Coats." The film was produced by Dr. Dale Okorodudu, Assistant Professor of Internal Medicine. Dr. Okorodudu

founded the organization Black Men in White Coats, also the film's namesake, to inspire young Black men to pursue medicine. UTSW panelists included Dr. Okorodudu; Dr. Quinn Capers IV, Associate Dean for Faculty Diversity; and Cameron Holmes, a third-year UTSW medical student; plus Dr. Barry-Lewis Harris II, Medical Director of Correctional Health Services at Parkland Memorial Hospital. Dr. Marc Nivet, Executive Vice President for Institutional Advancement, served as moderator for the event. Drs. Capers and Nivet both appear in the documentary. To learn more, go to blackmeninwhitecoats.org.



Clockwise from top left: Panelists included Dr. Dale Okorodudu, Dr. Quinn Capers IV, Cameron Holmes, and Dr. Barry-Lewis Harris II.

Scientist at forefront of COVID-19 vaccine development shares insights

By Patrick Wascovich

Celebrated viral immunologist Dr. Kizzmekia S. Corbett, who helped develop what became the Moderna COVID-19 vaccine, provided insight into its creation and rapid deployment during a virtual presentation at the 2021 Ida M. Green Lecture Honoring Women in Science and Medicine. Currently one of the nation's most in-demand speakers, Dr. Corbett described how the candidate vaccine, in just a few months, went from scientific concept at the National Institutes of Health (NIH) to national distribution of a two-dose regimen that has shown to be more than 90 percent effective.

"We're in the third wave of coronavirus infections, and if we wait for herd immunity to bring us back to normalcy, 40 million people will have to succumb to the disease," said Dr. Corbett. "A vaccine can reduce transmission and make it safer to return to normal life. I call it vaccine community service. Immune people are essentially roadblocks to transmission of the virus."

Dr. Corbett's Feb. 10 virtual presentation, "My Journey to COVID-19 Vaccine Development: From Basic Biology To Prevention," generated more than 1,800 advance registrations from students, postdoctoral trainees, residents, faculty, and staff, as well as numerous groups in the North Texas community, including high

school and college students. All wanted to hear from an NIH research fellow who initially made national headlines by personally briefing then-President Donald Trump on March 3, 2020, about the emerging global COVID-19 threat.

"She is presenting up to eight lectures a month, so we were so fortunate in being able to invite Dr. Corbett to give this lecture at such an opportune time," said Dr. Carole Mendelson, Professor of Biochemistry and Obstetrics and Gynecology, who co-chairs UT Southwestern's Women in Science and Medicine Advisory Committee (WISMAC) with Dr. Sharon Reimold, Professor of Internal Medicine. "One of the committee's major goals is to encourage young women to pursue careers in STEM by example, and Dr. Corbett serves as a spectacular role model for young women in general, as well as for young women of color in particular," Dr. Mendelson added.

Dr. Corbett is a senior research fellow and the scientific lead for the coronavirus vaccines and immunopathogenesis team at the National Institute of Allergy and Infectious Diseases (NIAID),

a component of the NIH. Since 2014, when she was appointed to the NIAID's Vaccine Research Center, Dr. Corbett's efforts have focused on developing novel coronavirus vaccines.

After studying pathogens such as respiratory syncytial, dengue, and influenza viruses, Dr. Corbett became a recognized expert with deep knowledge and understanding of human antibody responses and how genetics can impact the severity of a disease. She proved to be the right person in the right spot when she began getting emails in January 2020 from NIH colleagues including Drs. Anthony Fauci and Barney Graham concerning a respiratory outbreak in Wuhan, China, and the need for her team "to buckle up." And Dr. Corbett didn't flinch early in the pandemic when Dr. Fauci predicted the world might see an effective vaccine in about a year.

In response to the ongoing pandemic, the concept incorporated in candidate vaccine mRNA-1273 was designed by Dr. Corbett's team from viral sequence data. It was then rapidly deployed to industry partner Moderna for a Food and Drug Administration-approved phase 1 clinical trial, which began only 66 days from the viral sequence release, an unprecedented time frame. What followed was a whirlwind series of ever-larger successful trials that ultimately resulted in Moderna's vaccine receiving emergency use authorization from the FDA on Dec. 18, 2020.

"All of the data to date show these vaccines to be effective," Dr. Corbett said. "We're seeing that the antibodies that are induced are hanging out and are remaining strong. Moderna and Pfizer vaccines are both about 95 percent effective, AstraZeneca is showing 90 percent, and the Johnson & Johnson vaccine is up to 85 percent."

Dr. Corbett said that the success of the current variety of messenger RNA vaccine formulas bodes well for scientists to be best prepared for the next inevitable threat to global health.

The Ida Green Lecture, now in its 28th year, is sponsored and funded by the Southwestern Medical Foundation. The late Mrs. Green, the wife of Texas Instruments co-founder Cecil H. Green, always championed careers for women in science. WISMAC is a standing committee of UT Southwestern whose goals are to raise the international visibility and recognition of women in science and medicine at UTSW and to provide inspiration and career guidance for female trainees, faculty, and senior administrators.



Dr. Kizzmekia S. Corbett

Dr. Reimold holds the Gail Griffiths Hill Chair in Cardiology.

More online: Read the full story on *Center Times Plus* at utsouthwestern.edu/ctplus.

Quality

Continued from page 1

UT Southwestern's clinics to increase patient quality and safety outcomes. By bringing a new level of scrutiny to each step of the clinical process, continuous improvements have saved an estimated 563 lives from January 2018 to August 2020, said Dr. William Daniel, Vice President and Chief Quality Officer.

After joining UT Southwestern in November 2016, Dr. Daniel made reduction of sepsis – a problem faced by hospitals nationwide – his first priority.

Dr. Sonja Bartolome, Professor of Internal Medicine and Associate Vice President of Ambulatory Quality Outcomes, said the key was taking a holistic approach to the issue.

"Quality and safety are mostly about making the system around the patient, doctor, and nurse work optimally," Dr. Bartolome said. "This lets the doctors and the nurses do their part, and lets everything else run smoothly and without errors in the background. That's what the core of quality and safety is about."

Targeting sepsis

Dr. Daniel and his team identified sepsis reduction as the main target for improvement because it was the greatest threat to patients. According to the Centers for Disease Control and Prevention, 1.7 million adults get sepsis, and it kills nearly 270,000 people nationwide every year. Three-quarters of patients who get sepsis come to a hospital's Emergency Department, so the focus there was intense.

Analysis showed Clements University Hospital staff were doing everything right to address sepsis, but that taking steps more quickly could save more lives.

"For sepsis, we realized that the earlier you recognize someone has the infection, the better. Every hour delay brings about a 4 percent increase in mortality," Dr. Daniel said.

Following activation of new quality and safety improvements, patients were screened for sepsis. If certain criteria were met, nurses did not wait for a doctor's orders to start antibiotics. Rather, they were empowered, starting in January 2018, with standing delegated orders to start treatment.

This approach was so new that some nurses checked with the Texas Board of Nursing to see if this could be done, according to Chief Nurse Executive Dr. Susan Hernandez, who said she and other leaders welcomed the skepticism because teamwork and honest scrutiny were needed to ensure success.

Dr. Hernandez said nurses then embraced the changes – and saw results.



Various quality improvement practices put in place over a period of two and a half years at William P. Clements Jr. University Hospital have helped advance patient quality and safety outcomes.

"Once the numbers tell a story, there's no arguing. They can see it, they can see that they're making a difference," she said.

Changes lead to improvement

Critical steps had to be taken and performed in the correct order to increase efficiency. Sophisticated software was implemented to replace manual processes. As a result, commitment to teamwork increased due to the greater emphasis placed on attention to the process – resulting in lives saved in every hospital service line.

"This is a credit to the real change in work culture," Dr. Daniel said. "Teamwork is the reason we were able to get to these super-elite levels of patient survival."

Among 2,800 hospitals ranked by their 30-day mortality rates by the Centers for Medicaid and Medicare Services, UT Southwestern skyrocketed from No. 700 to as high as No. 12 in just three years. The hospitals were ranked for their 30-day mortality in five areas: acute myocardial infarction, coronary artery bypass graft, chronic obstructive pulmonary disease, heart failure, pneumonia and stroke. CMS gives Clements University Hospital five stars, its highest rating.

The improvements in quality outcomes, in turn, have boosted patient satisfaction, which rises when patients perceive their health care providers are working together as a team. In 2019, UT Southwestern ranked fourth among academic medical centers in patient experience as measured by Vizient Inc., a company that tracks health care indicators.

A 'Magnet' for success

Dr. Hernandez led UT Southwestern's effort to achieve Magnet designation in 2016, an elite status granted by the American Nurses Credentialing Center for excellence in aligning the goals of nurses with the organization's overall improvement in patient outcomes.

Dr. Daniel said this designation, held by only 8 percent of hospitals in the United States, was one of the major drivers of UT Southwestern's quality and safety efforts.

Ashley Holroyd, Associate Vice President of Quality Operations, came to UT Southwestern in 2018 to find areas to improve and speed up care. She leads a team of 70, including 12 industrial engineers and process optimization experts who work with health care providers to analyze each step of the operational process, seeking areas to improve.

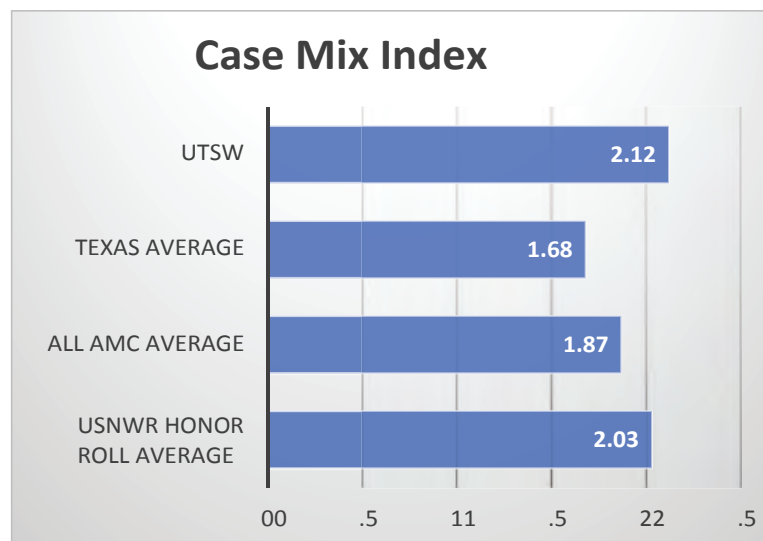
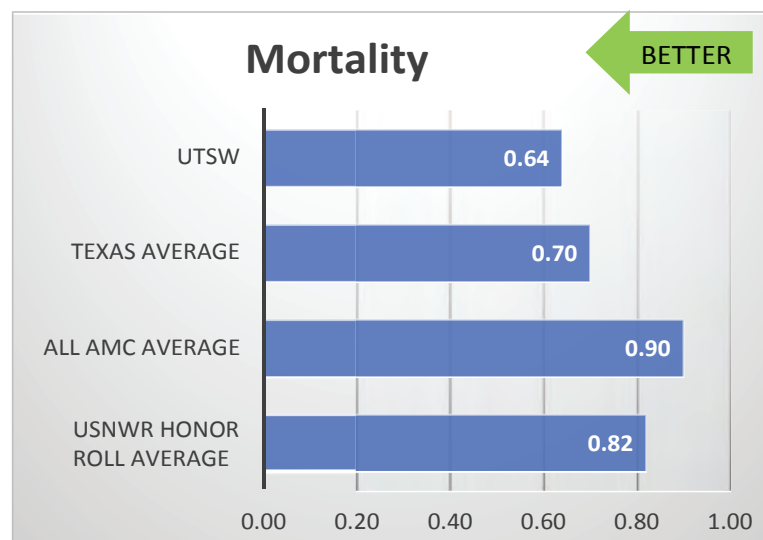
"It's about creating value for our patients, as well as creating the optimal environment for our caregivers to be able to provide the highest level of care. We want to empower the staff, through resources and training, to become problem solvers," Ms. Holroyd said.

Her data analytics team builds scorecards and dashboards to track performance and identify opportunities throughout the organization, while project management and transformation teams provide additional resources to facilitate change.

Quality improvement as a philosophy

This new look-for-something-to-improve philosophy has spread throughout UTSW's clinical culture. So when the pandemic hit this year,

Mortality Improvement University Hospitals



Over 500 lives saved since Jan 2018

UT Southwestern outperformed peers on driving down mortality rates no matter how it is measured, on the state level, in comparison to other academic medical centers, or in comparison to other institutions that rank in *U.S. News & World Report*. UT Southwestern achieved this despite having a high-case mix index, meaning a high number of diverse patients with clinical complexity and medical resource needs.

health care workers used quality and safety principles to improve care for COVID-19 patients.

Dr. Daniel, a 1990 graduate of UT Southwestern Medical School, said health care providers rethought procedures for resuscitating COVID-19 patients and found ways to put fewer providers at risk for exposure to the virus. Equipment was placed outside patient rooms and configured to deliver the same level of support for the patient. Exposure was reduced while still maintaining high levels of patient resuscitation.

Members of the UTSW liver transplant team also embraced the new philosophy and found ways to get patients off breathing machines before they leave operating rooms. This

advance, once thought to be unattainable, reduces complication risks and increases patient comfort.

And in several operating rooms, new "black box" technology has been installed to record all aspects of a surgery so physicians and nurses can review data and find ways to improve.

"Quality and safety improvements are not an administrative or bureaucratic structure," Dr. Daniel said. "It's really about engagement and empowerment at the very front lines."

Dr. Daniel holds the William T. Solomon Professorship in Clinical Quality Improvement at UT Southwestern Medical Center.

Reviving exhausted immune cells to fight cancer

Removing a key gene could help T cells effectively attack solid tumors

By Christen Brownlee

Eliminating a single gene can turn exhausted cancer-fighting immune cells known as CD8⁺ T cells back into refreshed soldiers that can continue to battle malignant tumors, UT Southwestern research suggests. The findings, published in the *Journal for Immunotherapy of Cancer*, could offer a new way to harness the body's immune system to attack cancers.

In 2017, the Food and Drug Administration approved treatments involving chimeric antigen receptor T (CAR-T) cells, which consist of immune cells known as T cells that have been engineered to recognize specific proteins on the surface of cancer cells. When these cells are delivered by infusion, they mount a targeted immune response against cancer cells.

CAR-T cells have been successfully used to treat blood cancers such as leukemia and lymphoma, often with dramatic results, said Dr. Venuprasad Poojary, Associate Professor of Internal Medicine and Immunology. However, these treatments have had little success against solid tumors, such as those that develop in the colon, breast, and lung.

When CAR-T cells enter these solid tumors, Dr. Poojary explained, they quickly become dysfunctional and lose their cancer-fighting abilities. This

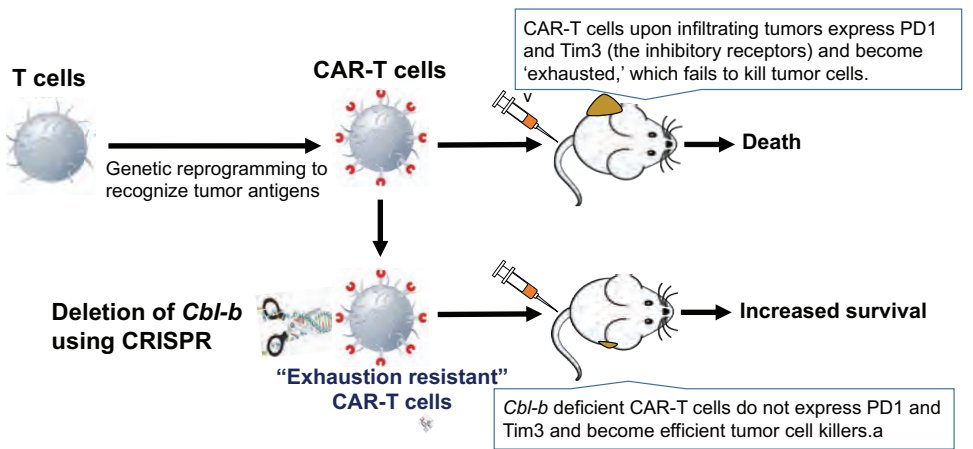
state, referred to as "exhaustion," is accompanied by the addition of proteins, including PD1 and Tim3 on their surfaces and an inability to produce their usual immune-boosting molecules, such as Interferon-gamma and tumor necrosis factor. Finding a way to prevent CAR-T cells from becoming exhausted has become a significant goal in cancer research, Dr. Poojary added.

Toward this end, he and his colleagues scoured published research comparing gene activity in working and exhausted T cells. The researchers quickly zeroed in on a gene called *Cbl-b*, which is more active, or upregulated, in exhausted cells.

Dr. Poojary and his colleagues confirmed that *Cbl-b* was activated in T cells that infiltrated tumors in a mouse model of colon cancer. Not only did these cells lose their tumor-fighting abilities, but they also developed a characteristic set of cell surface proteins and inability to produce, or express, immune molecules characteristic of exhaustion. However, when the scientists used the gene editing tool CRISPR to delete *Cbl-b* in these cells, they regained their cancer-fighting capacity and lost other exhaustion features.

Further experiments showed that removing *Cbl-b* also prevented exhaustion specifically in CAR-T cells, Dr. Poojary added. When he

Exhaustion resistant CAR-T cells for solid tumors



and his team deleted this gene from CAR-T cells engineered to recognize carcinoembryonic antigen, a cell surface protein commonly overexpressed in colon cancer, the cells effectively fought cancer in mice bearing these tumors – significantly extending their survival. However, CAR-T cells with functioning *Cbl-b* quickly became useless, providing little anti-tumor effect in animal models.

"Our study is a major step forward in developing CAR-T cells to fight solid tumors," Dr. Poojary said. "This could overcome the limitations of some current immunotherapy strategies for cancer."

More online: Read the full story in the newsroom at UTSouthwestern.edu/newsroom.

Simulation helps refine pediatric care guidelines for COVID-19

By Christen Brownlee

Simulation exercises helped to refine pediatric care guidelines and educate staff in new procedures, a recent study from UT Southwestern's Department of Pediatrics shows. The findings, published in *Pediatric Quality and Safety* and originally shaped around new COVID-19-related pediatric resuscitation protocols at UTSW and Children's Health, could eventually be used to help implement other types of guidelines at medical centers nationwide.

For decades, U.S. hospitals have used the same standard procedures for CPR and intubation. But when the COVID-19 pandemic began early last year, some details of these procedures needed to change, explained Dr. Blake E. Nichols, Assistant Professor of Pediatrics at UTSW and a critical care physician at Children's Health.

CPR and intubation are among procedures with the highest risk of spreading SARS-CoV-2, the virus

that causes COVID-19, to health care workers. To help protect hospital staff, the American Heart Association (AHA) and the Society of Critical Care Medicine (SCCM) published recommendations in April 2020 for performing these procedures on patients who are either positive for COVID-19 or suspected of having the virus.

Because children who are critically ill with COVID-19 make up just a fraction of the patient population, resuscitation is thankfully a rare event, said Dr. Nichols. But this rarity also makes it more difficult to create practical guidelines around these scenarios.

To evaluate best practices, Dr. Nichols and his colleagues performed a simulation using protocols that differ from the typical simulation events used for CPR or intubation training. The researchers started with new guidelines written by a UTSW/Children's Health committee based on AHA and SCCM recommendations. These guidelines had distinct



Dr. Blake Nichols

differences from the usual resuscitation procedures, including involving a medical team with significantly fewer members, making sure each member is fully secured in personal protective equipment (PPE) before entering a patient's room, and ensuring the patient is enclosed in as much protective gear as possible to block the spray of infectious droplets.

Dr. Nichols assembled a team of pediatric intensive care physicians, nurses, respiratory therapists, and a writer from the guidelines committee to participate

"The COVID-19 pandemic required us to find new ways to provide the best care for our patients while protecting health care workers and educating these workers quickly on new procedures."

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in a mock resuscitation event.

The team tested two scenarios: In one, a mock patient posed under a plastic equipment drape that had been repurposed as a protective shield, confirming its utility for protecting health care workers during intubation and CPR and determining how to secure the shield around the patient for best results. In another, the team performed simulated intubation and CPR on a mannequin in a negative pressure room, with some team members outside the room passing off

equipment and medications and others actively treating the simulated patient.

Dr. Nichols said the team identified several problems with the proposed guidelines written for UTSW/Children's Health. For example, the team found that two nurses rather than one were needed at the patient's bedside during resuscitation to prevent task overload. Additionally, communication needed to be refined since the PPE prevented team members from clearly seeing facial expressions or hearing commands as they normally would.

"The COVID-19 pandemic required us to find new ways to provide the best care for our patients while protecting health care workers and educating these workers quickly on new procedures," Dr. Nichols said. "We've shown that simulation provides a great opportunity to accomplish this goal."

More online: Read the full story in the newsroom at UTSouthwestern.edu/newsroom.

NEWS MAKERS

Atkins receives award for EMS contributions

For almost 50 years, Dr. James Atkins, Professor of Internal Medicine and a cardiologist, has played an integral role in Dallas emergency medicine. He has been a leader in advancing emergency medicine services at UTSW, served the Dallas Fire Department EMS program for four decades, and chaired the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions.

A member of the Texas EMS Hall of Fame, Dr. Atkins has received awards from the American Heart Association, the Food and Drug Administration, and the National Heart, Lung, and Blood Institute. Most recently, the American College of Emergency Physicians honored him with its Outstanding Contribution in EMS Award.

A 1967 graduate of UTSW Medical School, Dr. Atkins joined the UTSW faculty in the Division of Cardiology in 1972. Six months later, he was approached by Dr. Donald Seldin, then-Chair of Internal Medicine, and Dr. Jay Sanford, Vice Chair of Medicine at the time.



Dr. James Atkins

"They said the ER was not working well and asked me to supervise the ER in addition to being a cardiologist," Dr. Atkins said. "I did this for five years."

During that time, Dr. Seldin also asked Dr. Atkins and Dr. Erwin Thal, who would go on to become Professor of Surgery, to work with the Dallas Fire Department to develop a paramedic program. (Dr. Thal died in 2014.) In all, starting in 1973, Dr. Atkins served as a co-Medical Director of the Dallas Fire Department EMS program for a decade and Medical Director for about 30 years.

Looking back over his career, Dr. Atkins said he has enjoyed the variety of his roles. "I became involved in many state and national organizations and helped develop programs around Texas and the nation as well as abroad. The many friendships with leaders were especially rewarding for a small town Texas boy."

Dystonia work earns Dauer Bachmann-Strauss Prize

As an acclaimed physician-investigator in dystonia and Parkinson's disease, Dr. William T. Dauer never loses sight of the inspiration for his research – his patients.

Dr. Dauer, Director of the Peter O'Donnell, Jr. Brain Institute at UT Southwestern, is the recipient of the sixth annual Bachmann-Strauss Prize for Excellence in Dystonia Research. Given in partnership with the Michael J. Fox Foundation for Parkinson's Research (MJFF), the prize honors dystonia researchers for key scientific discoveries and provides incentive for the next generation of investigators to continue

forging paths toward cures.

"It is a tremendous honor to have my work and that of my trainees recognized by this award," said Dr. Dauer, who is also Professor of Neurology and Neuroscience at UTSW. "Two things make the award particularly special. First, it was presented to me by one of my long-term and most beloved patients. Nothing helps keep in focus the real-life importance of science like interacting with people suffering from the disease. Second, the co-sponsors of the award, the Michael J. Fox Foundation and the Bachmann-Strauss Dystonia Foundation, are special organizations that have done so much for the field of movement disorders."

Dr. Dauer came to UT Southwestern in July 2019 from the University of Michigan, where he had served as Director of the Movement Disorders Group and Director of the Morris K. Udall Center of Excellence for Parkinson's Disease Research.

"Dr. Dauer has spearheaded groundbreaking research that explores the underlying causes, development, and treatment of dystonia. We created the research prize for this purpose – to speed discoveries and testing of new therapies to help people living with this condition," Dr. William T. Dauer said Bonnie Strauss, who was diagnosed with dystonia in 1984 and founded The Bachmann-Strauss Dystonia & Parkinson Foundation in 1995. The Foundation launched a collaborative



Dr. William T. Dauer

research alliance with MJFF a decade later.

In 2014, a group of researchers led by Dr. Dauer developed a preclinical model that mimics dystonia, a movement disorder and symptom of Parkinson's characterized by painful, prolonged muscle contractions that result in abnormal movements and postures.

In some cases of dystonia, a mutation in the *DYT1* gene causes brain cells to make a less active form of a protein called torsinA. Dr. Dauer created the dystonia model by weakening the torsinA function, which led to the death of certain brain cells that control movement. This important tool has allowed scientists to better explore the biology of dystonia's onset and progression and test the impact of therapies.

The Bachmann-Strauss Prize includes a \$100,000 research grant.

"These funds will be used to advance our work defining the molecular and connectivity abnormalities of a specific neuronal cell type (striatal cholinergic interneurons) that produces the abnormal twisting movements that characterize dystonia," Dr. Dauer said. "A particularly exciting direction of the work is our plan to explore in patients with the illness the same cell type that we are focused on in our animal model work. Recent advances in PET imaging enable these cholinergic interneurons to be visualized."

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