Looking to the Future

The sky is the limit. Or so it seems as UT Southwestern expands on all fronts to support its mission of promoting health and a healthy society. Unprecedented success and growth, made possible in part through philanthropic support, have led to several major capital projects, including construction of a third tower at William P. Clements Jr. University Hospital and expansion into Frisco – not to mention advances in educational programs to arm future caregivers with the skills and knowledge needed to effectively perform their jobs.

Medical School curriculum launched in 2015 graduates first class

In August 2015, UT Southwestern Medical School launched an innovative new curriculum – called the *Foundation for Excellence* – and now, four years later, the first class that studied under that curriculum has graduated.

"As the first group of students to experience the new curriculum, we all learned about how to advocate for our interests as learners, how to give feedback, and how to adapt," said Dr. Kylie Cullinan, a 2019 graduate and current UTSW resident in internal medicine-pediatrics. "The freedom of the new curriculum gave me the push to find personal interests outside of the standardized curriculum and provided time to actively pursue them. I was able to identify strong mentors, spend a month learning about nutrition, and work at a camp for children with diabetes – all experiences that I think will make me a stronger physician."

The curriculum condensed material traditionally taught in the first two years of medical school into an integrated 18-month pre-clerkship block, giving students earlier exposure to clinical activities and adding considerable flexibility and breadth to each student's educational experience. This reduction in course time in the pre-clerkship phase was facilitated by minimizing content redundancy through coordination of all respective disciplines teaching each topic.

Dr. Angela Orlino talks with UTSW residents Drs. Lindsey West (left) and Kylie Cullinan, both of whom she mentored as medical students educated under the new curriculum.

"During the pre-clerkship period, students gain important scientific knowledge, attitudes, and skills, along with a common vocabulary shared by the medical profession, all of which are vital elements in building a foundation of excellence," said Dr. Angela Mihalic, Dean of Medical Students, Associate Dean of Student Affairs, Distinguished Teaching Professor of Pediatrics, and a 1995 UTSW Medical School graduate herself. "All classes during the pre-clerkship period are measured on a pass/fail basis so that students can concentrate on learning the material in a team-oriented environment."

In addition to traditional lectures, this pre-clerkship block is focused on building knowledge in basic and clinical sciences through team-based learning experiences in the classroom, laboratories, simulation environments, and small-group settings.

"Initially, as a new student at a very large medical school, these team-based learning groups allowed for closer interactions and friendships with fellow students," added Dr. Cullinan, who received a Dr. Richard Mays Smith Award as a graduate last year. "I think this approach reflects the evolving practice of medicine – it truly is a team sport. I need to communicate clearly with the other residents on my team, attending specialty physicians, and my patients."

Clerkships start in the middle of the second academic year. By starting clerkships sooner, medical students can explore more clinical fields to help them choose their specialty. For those students who have already decided on a discipline, they can explore a selected topic in greater depth or broaden clinical experiences with other opportunities.

To prepare students for residency and beyond, the expansion of clinical training under the new curriculum provides more opportunities for unique and tailored experiences. Then as students embark on the final phase of their medical school experience, the post-clerkship period allows them to explore innovative science and medicine in subject areas related to their future careers as well as gain mastery of clinical skills through simulation.

"During the pre-clerkship period, students gain important scientific knowledge, attitudes, and skills, along with a common vocabulary shared by the medical profession."
– Dr. Angela Mihalic

Dr. Lindsey West, a resident in dermatology who also graduated last year, experienced both the new and earlier curriculum. She had taken a year off for a research fellowship after her third year of medical school.

"The new curriculum allowed students to gain exposure to all of the specialties earlier on with increased elective time and the scholarly activity, and also helped students gain skills in how to work and communicate as a team," Dr. West said. "Working with their class during my fourth year, I noticed how the students seemed to be very comfortable and proactive when working in group settings in the classroom and on clerkships."

Graduate School gains international stature as member of elite Amgen Scholars Program

Sixteen select college undergraduates spent this past summer in UT Southwestern labs, working on dynamic and leading-edge research projects, as part of the initial class of Amgen Scholars here.

Lauren Duan, a junior at Johns Hopkins University, benefited as one of those Scholars who worked alongside UTSW faculty members and postdoctoral researchers. Her focus was on cardiac regeneration and investigating how cardiomyocytes can be programmed to regenerate and resist cell death.

"I knew that I wanted to gain a research experience unlike any other, to make big strides in my science, but also to contribute to answering big questions," said Ms. Duan, who plans to eventually apply to an M.D./Ph.D. program.

Ms. Duan's experience was made possible by a four-year grant awarded to UT Southwestern in 2018 from the Amgen Foundation. The program provides laboratory experience for undergraduates who may not otherwise be able to engage in research at the world's top educational and research institutions.

Only 13 institutions across the U.S. were selected to host these budding biomedical scientists. Last year, UT Southwestern – along with Duke, Johns Hopkins, and Yale universities – joined the California Institute of Technology, Columbia, Harvard, the National Institutes of Health, Stanford, UC-Berkeley, UCLA, UC-San Francisco, and Washington University in St. Louis in the network. More than 4,200 Amgen Scholars – representing more than 700 colleges and universities worldwide – have participated in this undergraduate program since its inception 12 years ago.

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

Dr. Zinn, himself a graduate of UTSW's Medical School and Graduate School who holds the Rolf Haberecht and Ute Schwarz Haberecht Deanship of the UT Southwestern Graduate School of Biomedical Sciences, said the payoff for UT Southwestern has been just as high in terms of name recognition – one of the principal challenges in recruiting top U.S. undergraduates.

"I expect even Amgen Scholars who ultimately train elsewhere will come away impressed by UT Southwestern and tell others about us," Dr. Zinn said.

Dr. Jeffrey Zigman (center) discusses research data with Amgen Scholars Anna Patterson and Julian Maceren. The Scholars were among 16 who received hands-on laboratory experience at UT Southwestern this past summer.

School of Health Professions celebrates 50 years, grows to meet needs for health care professionals

The School of Health Professions, which marked its 50-year anniversary in 2018, continues to adapt and evolve in response to changes in higher education and the health care industry. Over the next half-century, that transformation will continue in efforts to optimally prepare tomorrow's health care professionals.

In 2019, the School of Health Professions started a new Ph.D. program in applied clinical research, which provides rigorous research training specifically for health professionals.

The School offers training in seven distinct areas: applied clinical research, physician assistant studies, clinical nutrition, prosthetics-orthotics, clinical rehabilitation counseling, radiation therapy, and physical therapy. Each year, more than 300 students enroll to pursue studies at master's and doctorate levels.

"Over the past 50 years, the School of Health Professions has successfully served its mission by training outstanding health care professionals, providing the highest quality patient care, and producing innovative health care research," said Dr. Jon Williamson, Dean of the School. "While we are proud of our accomplishments, we must continually strive for improvement to ensure we can continue to serve our mission, the institution, and our community."

The School has been recognized for the quality of its programs and a commitment to diversity and inclusion. The Physician Assistant Studies Program, for example, is ranked seventh in the nation by *U.S. News & World Report* in "America's Best Graduate Schools 2020," while *INSIGHT Into Diversity* magazine recognized the School in 2018 for demonstrating excellence in diversity and inclusion.

In response to demand for a wider variety of health care workers, the then-School of Allied Health Professions was established in 1968 and opened the next year. The first full academic year had 57 students. In 1983, the School moved to its current location on Harry Hines Boulevard, in the heart of the UTSW campus.

A distinguishing characteristic of the School is teaching and training by the outstanding faculty found only at an academic medical center, which provides students firsthand access to advanced clinical care and research. This is evident in the first-time licensure/certification student pass rates that top 97 percent. In addition, all programs report 100 percent employment of graduates within the first six months following graduation.

"The School of Health Professions has worked hard over the years to maintain high-caliber academic programs with quality faculty and integrated academic and clinical training," said Dr. Kim Hoggatt Krumwiede, Associate Dean for Academic Affairs.

In August, the School started a new Ph.D. program in applied clinical research that provides rigorous research training specifically for health professionals.

"The primary goal of the program is to develop and cultivate a new generation of health professionals pursuing careers as independent clinician-scientists," said Dr. Scott Smith, Associate Dean for Research. "Through participation in the program, individuals will acquire the skills and breadth of experience needed to contribute to the advancement of their respective fields through research in a substantive and impactful way."

Dr. Carolyn Bradley-Guidry instructs physician assistant students Chinonso Nnaji (left) and Aila Soomro in casting and splinting.

Simulation Center becomes national leader in quality and effectiveness of medical training

UT Southwestern's $40 million Simulation Center, one of the largest in the country, has quickly evolved since its opening in late 2018 into a national leader in simulation training as well as an integral factor in the quality of education and training provided to UTSW health care students and professionals.

"Patients should know that we embrace the most rigorous standards of training available today, and we're actually setting those standards. We are a dedicated campus for medical education, patient care, and research, and we're enhancing all three within the Simulation Center," said Dr. Daniel Scott, Assistant Dean of Simulation and Student Integration.

In September 2018, the institution opened the 49,000-square-foot facility on West Campus that includes specialized training laboratories for all specialties on campus. It also features high-tech instruments such as virtual reality equipment. Simulators in the Center closely replicate diseases, conditions, and other real-life patient scenarios, such as childbirth, orthopedic operations, trauma resuscitations, and more. The realistic medical settings allow learners to become familiar with the diagnostic and treatment processes and equipment, work in medical teams, and learn proper communication and bedside skills.

Health care educators are trying to achieve better patient care – and simulation is part of the solution. Over the past 20 years, a growing body of literature has linked simulation-based training to improved patient safety and clinical outcomes.

"Students are getting hands-on clinical exposure in the simulation environment where there are no untoward effects to actual patients," said Dr. Scott, who holds the Frank H. Kidd, Jr., M.D. Distinguished Professorship in Surgery. "There's also the aspect of psychological safety. Students are not afraid of making mistakes and can explore different decision-making options without having any real-life repercussions."

UT Southwestern medical students start training at the Center their first year. By the time they graduate, the goal is for students to have developed a "learner portfolio" of competencies verified through simulation training. The Center also trains students from UT Southwestern's Graduate School of Biomedical Sciences and School of Health Professions.

The Sim Center averages up to 2,500 learner visits per month. Moving forward, development priorities include further integrating simulation training into the Medical School curriculum, emphasizing advanced techniques for practicing providers, increasing the number of scholarly projects, and connecting simulation training data to actual clinical outcomes.

Faculty, residents, and fellows are among the other learners utilizing the Center for continuing education activities that allow them to fulfill certification requirements or potentially develop new treatment methods.

"What I hope to achieve, both within and outside the program, is institutionalizing simulation throughout health care education, including residency and medical education and also within interprofessional education," said Krystle Campbell, Director of Simulation Center Operations. "I would love to see a lot more interprofessional education events happen, along with instilling competency-based testing using simulation for both pre- and post-licensure students."

"We view the Simulation Center as a fantastic resource that not many places in the country have anything close to," Dr. Scott said. "This will allow our faculty to continue pioneering new educational methods, publish their innovative work, and bring excellence and recognition to UT Southwestern as a major leader in simulation."

Students and other UT Southwestern learners now benefit from practicing medical techniques on high-tech, lifelike manikins in the Simulation Center, which opened in late 2018.

UT Southwestern reaches into Frisco to offer specialized care

One of the most striking features of the new UT Southwestern Medical Center at Frisco – which opened in December – is the pedestrian bridge that connects it to Texas Health Hospital Frisco. It's a fitting metaphor for the remarkable relationship between UT Southwestern and Texas Health Resources, partners in the Southwestern Health Resources network.

The new facility represents a unique opportunity to grow UT Southwestern's clinical operations. The four-story structure offers on-site medical care for adults and children in a dozen specialty areas, along with a retail pharmacy and imaging and lab services.

Inpatient and surgical services take place right next door at UT Southwestern's partner site – the new 73-bed Texas Health Hospital in Frisco. Together, the two facilities comprise a 20-acre collaborative medical campus dedicated to providing a seamless patient experience.

"Our faculty physicians, together with Texas Health's community physician colleagues, serve the needs of the Frisco community through a coordinated network, ranging from primary care to the most specialized expertise," said Dr. Daniel K. Podolsky, President of UT Southwestern and holder of 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. "In addition, patients have the opportunity to go beyond even leading-edge treatments through access to participation in innovative clinical trials. This facility brings to Collin County some of the best that UT Southwestern Medical Center has to offer."

The city of Frisco, located 25 miles north of UT Southwestern, is undergoing significant growth. It is among the fastest growing cities in the country, with 37 new residents every day, according to U.S Census Bureau statistics. The city is also a key bridge between UT Southwestern's main campus in Dallas to more rural areas such as Prosper, Celina, and Little Elm.

Our Frisco physicians at the UT Southwestern Medical Center at Frisco are members of the UT Southwestern Medical Group, one of the largest, most comprehensive physician practices in Texas.

The Frisco project marks the fifth UT Southwestern regional medical center, joining others in Las Colinas, Park Cities, Richardson/Plano, and Fort Worth.

President Dr. Daniel K. Podolsky (left) and Dr. Mack Mitchell discuss plans for the new UT Southwestern Medical Center at Frisco at a topping-off event for the project in late 2018.

Celebrating a Clements University Hospital expansion milestone

After 19 months of construction, the first major expansion of William P. Clements Jr. University Hospital marked a significant milestone last year with the top-floor exterior framework completion. The project, necessitated by increasing patient demand and population growth that exceeded initial forecasts, is on schedule to be completed by September 2020.

The $480 million, 12-story tower will add operating rooms and an expanded Emergency Department to the existing 460-bed Clements University Hospital and become the inpatient home to the Peter O'Donnell Jr. Brain Institute. It will also increase the number of inpatient rooms, allowing consolidation of patients now treated at Zale Lipshy Pavilion to all be treated under one roof at Clements University Hospital.

Dr. John Warner, EVP for Health System Affairs and CEO of UT Southwestern University Hospital, signs a painted metal beam kept as a memento of the "topping-off" event.

In March 2019, less than five years after opening the hospital, UT Southwestern officials, physicians, nurses, and clinical staff gathered with architects, construction executives, and descendants of the hospital's namesake, the late Texas Gov. Clements, to celebrate the "topping off" of the third tower.

"This new 12-story tower will allow us to bring together all of our University inpatient services in one location on the UT Southwestern campus," said UTSW President Dr. Daniel K. Podolsky, who 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. "It will allow health professionals to work more closely together as they care for patients."

The construction milestone came just a few months before UT Southwestern was named the No. 1 hospital in Dallas-Fort Worth and the No. 2 hospital in Texas for the third consecutive year by *U.S. News & World Report.* In 2018, Clements University Hospital received a national Rising Star Award for improved quality and safety efforts, ranking it within the country's top 25 academic medical center hospitals.

Zale Lipshy began UT Southwestern's legacy of service to patients when it opened in 1989, said Dr. John Warner, Executive Vice President for Health System Affairs and holder of the Jim and Norma Smith Distinguished Chair for Interventional Cardiology, and the Nancy and Jeremy Halbreich, Susan and Theodore Strauss Professorship in Cardiology.

Architectual rendering of the completed William P. Clements Jr. University Hospital

The additional space in the new Clements University Hospital tower will allow for "the coming together of these two excellent clinical care communities," Dr. Warner said.

Event attendees Nancy Seay and her granddaughter, Nancy Neuhoff – both members of the UTSW art selection committee – have been searching to find the hundreds of pieces needed for public areas and patient rooms.

Ms. Seay is the daughter of Gov. Clements, who donated $100 million to UT Southwestern in 2009. As one of many who added their signatures to the construction beam at the topping-off ceremony, she included a special note: "Hey Dad, the hospital is wonderful. Nancy."

> "This new 12-story tower will allow us to bring together all of our University inpatient services in one location on the UT Southwestern campus." – *Dr. Daniel K. Podolsky*

North Campus expansion plan kicks off

Growth of brain research, cancer treatment programs drives new building project

A new building with two towers designed to serve UT Southwestern's ongoing growth in the high-priority areas of brain research and cancer patient care – the Outpatient Cancer Care Tower of the Harold C. Simmons Comprehensive Cancer Center and the Research Tower of the Peter O'Donnell Jr. Brain Institute – is expected to open in the fall of 2022.

The nine-story towers – approximately 300,000 square feet each – will stand adjacent to the C. Kern Wildenthal Research Building on North Campus.

At a June 2019 groundbreaking ceremony, UT Southwestern President Dr. Daniel K. Podolsky, who 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, spoke to donors, administrators, clinicians, researchers, and supporters.

"We're here to begin the next great project on the UT Southwestern campus – a building that will expand our ability to respond to those in need of cancer care. Our researchers, working with learners, will also be able to make discoveries to improve the treatment, cure, and prevention of all the forms of brain disease that affect 50 million Americans," Dr. Podolsky said.

He thanked event attendee Annette Simmons and her late husband, Dallas businessman Harold C. Simmons, for longtime, generous support that has furthered cancer research and care at UT Southwestern. He also thanked Edith and Peter O'Donnell Jr. for their decades of giving and generosity to help launch the O'Donnell Brain Institute to advance brain science.

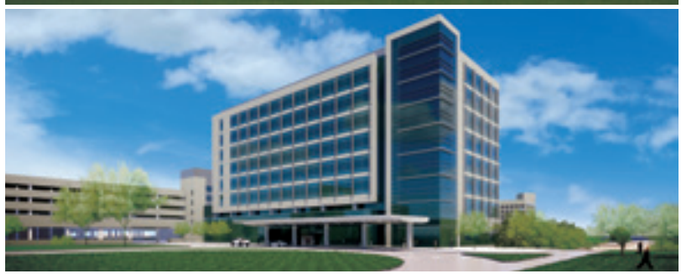
The Research Tower will help UT Southwestern attract the best and the brightest research talent, top-flight faculty, and the most outstanding Ph.D. students in the country, said Dr. Joseph Takahashi, Chair of Neuroscience and holder of the Loyd B. Sands Distinguished Chair in Neuroscience.

Dr. William T. Dauer, Director of the O'Donnell Brain Institute, said that the Research Tower will be the home of signature scientific initiatives of the Institute.

"Teams of scientists will pursue studies aimed at discovering the fundamental mechanisms of brain disease and repair and developing advanced technologies to therapeutically modulate brain function. We will target areas that hold great potential for clinical translation," said Dr. Dauer, who holds the Lois C.A. and Darwin E. Smith Distinguished Chair in Neurological Mobility Research.

Great strides are being made in treating and curing cancer, added Dr. Carlos Arteaga, Director of the Simmons Cancer Center, which will be expanding from the clinical buildings nearby. Dr. Arteaga, also Associate Dean of Oncology Programs, holds The Lisa K. Simmons Distinguished Chair in Comprehensive Oncology.

Dr. Arteaga said the new facility would triple current cancer care capabilities on campus.



Under construction on North Campus is a building with two towers to support UT Southwestern's growth in the high-priority areas of brain research (top) and cancer patient care (bottom).

Grateful families give back to advance breast cancer research

Three generations of Aaron women: (from left) Dawn, Morgan, and Carol

At the June 2019 groundbreaking of the Outpatient Cancer Care Tower of the Harold C. Simmons Comprehensive Cancer Center and the Research Tower of the Peter O'Donnell Jr. Brain Institute, Morgan Aaron and her mother, Dawn, shared how far UT Southwestern's cancer and brain treatments have already come.

Morgan was 28 years old in 2016 when she was diagnosed with stage 4 breast cancer that had spread to her brain, resulting in five brain tumors. Because triple-negative breast cancer is not fueled by hormones, it does not respond to hormonal therapy medicines, making treatment options limited.

Within days of her diagnosis, Morgan's UT Southwestern care team – Dr. Barbara Haley, Professor of Internal Medicine, who holds the Charles Cameron Sprague, M.D. Chair in Clinical Oncology; Dr. Toral Patel, Assistant Professor of Neurological Surgery, Neurology & Neurotherapeutics, and Radiation Oncology; and Dr. Robert Timmerman, Professor of Radiation Oncology and Neurological Surgery, who holds the Effie Marie Cain Distinguished Chair in Cancer Therapy Research – had performed the treatment that saved her daughter's life, Dawn said. "Today Morgan is healthy. She is cancer-free."

The families of Todd and Dawn Aaron and Steven L. and Carol Aaron made a combined gift of $250,000 to support triple-negative breast cancer research at the Simmons Cancer Center.

"Reason and logic say I should not be standing here before you all today," Morgan said at the groundbreaking. "You brought me back to life."

The Aaron families are passionate about supporting the research to develop new, more effective treatments that will change the future for others diagnosed with the disease.

"How do you thank someone for saving your daughter's life?" Dawn asked. "We are thankful to UT Southwestern and for the incredible work of her medical team. We were in such fine hands – such capable, compassionate, brilliant hands. It was with a human touch the entire way."