IN 2014, A DRUG TO TREAT MORQUIO A SYNDROME, A RARE GENETIC DISEASE, WAS APPROVED BY THE FDA FOR PUBLIC USE. A KEY STEP IN PRODUCING THE DRUG USES BIOTECHNOLOGY ORIGINATING FROM BASIC RESEARCH PERFORMED AT THE UNIVERSITY OF TEXAS AT DALLAS BY DR. ROCKFORD DRAPER, PROFESSOR OF BIOLOGICAL SCIENCES, AND HIS RESEARCH GROUP.

BioMarin Pharmaceuticals, an American biotechnology company that specializes treatments for rare genetic disorders, created a breakthrough enzyme replacement therapy to treat Morquio A syndrome in 2001. BioMarin’s therapy infuses patients with the enzyme that their bodies cannot produce on their own. By restoring patients’ ability to break down excess carbohydrates, this treatment helps prevent further adverse accumulation and mitigates resulting developmental defects.

To develop its enzyme replacement therapy, BioMarin sought an efficient way to produce and isolate the necessary enzyme. The company found the key to doing so in work published by Draper, whose research in the 1980s centered around the ability of mammalian cells to target proteins to cellular locations where those proteins are needed.

During his research, Draper had isolated a mutant cell line that was defective in its targeting process for a class of proteins called lysosomal enzymes — including the enzyme missing in patients with Morquio A syndrome. Instead of moving enzymes to their intended subcellular location, a structure called the lysosome, the mutant cells secreted the enzymes outside of the cell into the growth medium.

BioMarin licensed the use of Draper’s mutant cell line, harvesting the enzyme secreted by these cells to use in its replacement therapy. After extensive clinical trials and testing, patients began to receive this novel treatment in 2014.

The treatment quickly became one of BioMarin’s top-selling products. Since production of the drug used in the therapy relied on intellectual property licensed from UT Dallas, the University receives royalties from the treatment’s sale. Given the treatment’s success and profitability, Draper worked with University leadership to direct royalties for the benefit of his current and future colleagues in chemistry, biochemistry and biological sciences.

The plan will create eight new endowments in the School of Natural Sciences and Mathematics as the University receives payments from BioMarin. To date, more than $2.75 million in royalties has been directed to endowments, fully funding the Rockford Draper Early Career Faculty Development Award in Biological Sciences, which was first given to Dr. Darshan Sapkota, assistant professor of biological sciences, in 2021. The Rockford Draper Distinguished University Chair in Biological Sciences will also soon be fully funded by the royalties. If the royalty income continues as expected, a total of almost $20 million will have been directed into the endowments.

For Draper, these endowments are a long-term way to support life-changing research and establish a pipeline of talented scientists while providing faculty with latitude to push boundaries in their disciplines.

"These funds will help faculty look at the unknowns in their fields and choose the direction they think will be most successful," Draper said. "Over time, this will generate new knowledge that can be applied to improve the human condition."
LEADERSHIP MESSAGE

Breaking Barriers, Improving Lives

AT THE HEART of every great university is a mission to shape a better future through education and research. Here at The University of Texas at Dallas, this mission begins with our students. It begins with the opportunities we provide to nurture their best ideas and support the formation of their best selves. But this mission extends far beyond the classroom. It’s sought in our laboratories, libraries and clinics, places where knowledge is created and applied to serve humanity through medical practice and technological development.

In this issue of Momentum, you’ll read stories of generosity and innovation. The donors featured here are helping push the boundaries of science, opening new vistas of exploration for students and faculty, while making UT Dallas a place where any individual — regardless of means — can transform their life.

Thank you for celebrating these efforts with me. I hope you will join UT Dallas as we discover new dimensions of excellence in the years to come.

Kyle Edgington PhD’13
Vice President for Development and Alumni Relations

LONGTIME DALLAS RESIDENT Kay Aylesworth recently documented a significant planned gift to support the Callier Center for Communication Disorders at The University of Texas at Dallas. The gift — the center’s largest planned gift to date — will help fund access to care at the Callier Center for children and families who otherwise could not afford it.

In 2021, the Callier Center provided over 20,000 clinical services to more than 3,400 patients, many of whom required significant financial assistance. Aylesworth was moved to support Callier after touring the center and learning about several of the families whose lives were transformed by their Callier experience.

“My heart is really in this. I just want children and families who can’t afford treatment to be able to hear and talk and to receive communication services,” Aylesworth said. “Callier is considered world class in treatment, education and research. All you have to do is attend one of their luncheons to see what a difference you can make by supporting the center.”

Throughout her life, Aylesworth found purpose helping families who can’t afford treatment to be able to hear and talk and to receive communication services. In her speech, she recognized the vital role that communication played in the mechanisms by which certain drugs and treatments worked, and therefore had discontinued their use when volunteers left.

Aylesworth and other volunteers set about restoring healthy living conditions to the center: disinfecting common areas, creating a sanitary bathroom and providing medical attention to babies and children. After three months, Aylesworth returned home, but she would return to Nepal four years later to work at the same refugee camp.

This time, Aylesworth saw incredible progress in both the camp’s physical infrastructure and the health and well-being of its residents. The camp had been expanded with a safe brick play area for children, a modern bathroom, a sheltered area for cribs with clean blankets and a room for group activities.

In 1972, Aylesworth accepted the Splendid American Award in New York City as a representative of the Dooley Foundation airline volunteers. In her speech, she recognized the vital role that communication played in bettering the lives of Tibetan refugees.

“Something really made a difference was the connection made between cultures. In the beginning, the importance of daily health rituals — vitamins, washing,
etc.—was absent. Gradually over the years, a bond of friendship developed, and an understanding of the value of these practices was solidified,” Aylesworth said. “We worked side-by-side, humans with humans, toward goals vital to successful survival.”

In between her trips to Nepal, Aylesworth returned to school to continue the connective work she had begun during her first stint abroad. She enrolled at Texas Woman’s University to study deaf education. One of her professors planted the first seed of connection with the Callier Center by frequently mentioning the center in class.

Callier came back into focus for Aylesworth after her retirement from American Airlines, when she began a 20-year career teaching English as a second language at East Dallas Christian Church. One of her students, a mother from Mexico, had a son who received cochlear implants at the Callier Center.

Throughout all these experiences, Aylesworth committed herself to advancing human lives through communication and connection, whether they were businesspeople and travelers on her flights, women and children in Nepal, or immigrants to her home city. Extending her support to the Callier Center through her planned gift was a natural extension of her life’s work.

“I guess it has been a pattern in my life, somehow. All of these places—at the Dallas church, in Nepal and now at Callier—it’s all language, very much language,” Aylesworth said.

According to Dr. Angela Shoup, the Ludwig A. Michael MD Callier Center Executive Director, Aylesworth’s gift will make a substantial difference in the Callier Center’s ability to provide care for all patients.

“Kay Aylesworth is an incredible woman with fascinating life experiences,” Shoup said. “Her commitment to improving the lives of others, especially children with developmental challenges, has been evidenced in many ways, including her work with the children of Nepal. I am deeply grateful to Kay for her inspirational and immensely impactful support of the Callier Center, which will ensure access to life-changing care for so many children with speech, language and hearing difficulties.”

For Aylesworth, Callier’s achievements go beyond the care it provides to patients. The center’s real work is accomplished by forging connections, hope and love between individuals.

“I love what’s happening,” Aylesworth said. “I love the love that goes on at Callier and the hope that lives there.”

“What really made a difference was the connection made between cultures. We worked side-by-side, humans with humans, toward goals vital to successful survival.”

— Kay Aylesworth

UT Dallas Giving Societies

Philanthropic support is building a bright future for UT Dallas. Learn more about the generosity of alumni and friends at development.utdallas.edu/societies.
$1 Million Gift Establishes Ahmed Distinguished Chair in Sciences, Math

DRS. BASHEER AND Shakila Ahmed have created a $1 million endowment at The University of Texas at Dallas to establish the Drs. Basheer and Shakila Ahmed Distinguished Chair in Natural Sciences and Mathematics.

In recognition of their transformative gift, the Basheer and Shakila Ahmed Auditorium in the Sciences Building was named in their honor at a Sept. 23 event.

Basheer Ahmed is a retired psychiatrist who worked for more than 55 years in both private practice and on the faculty of various universities in Scotland and the U.S., including six years at UT Southwestern Medical School. His wife, Shakila, is a radiologist in Arlington, Texas.

“Investments in research like this allow us to ask fundamental questions about the universe and to develop responsive tools that create powerful engines for important discoveries,” Dr. David Hyndman, dean of the School of Natural Sciences and Mathematics, said at the dedication of the Ahmed Auditorium. “The research itself also generates innovations in education, industry-leading experiential training, venture mentorship and advisory support for our students.”

Hyndman also holds the Francis S. and Maurine G. Johnson Distinguished University Chair.

The couple said their inspiration for the gift is their belief in the legacy we hope to leave at UT Dallas.”

The Ahmeds have lived this mission in their own lives. Both dedicated their careers to science and medicine and sought to spread a love of learning to their children and throughout their community. As devout Muslims, they also have a specific interest in probing the history of science and medicine in the Islamic world, an interest which eventually led to their connection with UT Dallas.

In 1995 Basheer Ahmed gave a public lecture on the contributions of Muslim scientists and scholars to the field of medicine. In preparation for this talk, he was surprised by the depth and richness of Islamic scholarship in these fields during an anti-intellectual period of Western history.

“Most people have heard about the Dark Ages of Europe. But the Dark Ages of Europe were not the Dark Ages of the world,” he said. “I was amazed by the amount of scholarly work done thousands of years ago in the Islamic world.”

Muslim philosophers, scientists and doctors were instrumental in preserving the intellectual tradition of the classical world while expanding human knowledge to previously unknown heights in fields as diverse as medicine, logic, mathematics and physics.

In 2001 Basheer Ahmed founded the Institute of Medieval and Post-Medieval Studies to advance the study of this intellectual history and to disseminate awareness of it throughout contemporary society. Soon after, the organization hosted a number of lectures and events in collaboration with faculty at UT Dallas.

Through these events, the Ahmeds learned about UTD, its mission and the diversity of its student body. When they began thinking about ways to promote scientific exploration in future generations, they recognized UT Dallas as an institution that combined scientific excellence with educational opportunity for students of all backgrounds.

“The diversity at UT Dallas is great. You have a lot of students from India, Pakistan, all over the Middle East and Asia, alongside students who are Black and Latino,” Shakila Ahmed said. “We’re very happy about that. We hope that this endowment inspires younger generations, that students see someone like themselves in this new position and that it gives them motivation.”

As UT Dallas students take up the mantle of scientific discovery, the Ahmeds hope they will uncover the beauty of nature and use their understanding to improve human living in the future.

“The Quran encourages us to investigate creation,” Basheer Ahmed said. “And science contributes to our civilization, advancing society and helping people, saving lives and making life more comfortable. This is the legacy we hope to leave at UT Dallas.”

Left: Basheer and Shakila Ahmed Auditorium
Above: Dr. Basheer Ahmed addressed the audience during a ceremony in which the auditorium in the Sciences Building was named for him and his wife, Shakila Ahmed.
Kuhn Foundation Drives Student Success at UT Dallas

SINCE 2014, THE Michael and Alice Kuhn Foundation has given over $200,000 in support of student success programs at The University of Texas at Dallas. Through the Academic Bridge Program and an internship fund for students in the School of Economic, Political and Policy Sciences (EPPS), the foundation is helping ensure that all UT Dallas students have the resources they need to develop academically and professionally.

Founded by Alice Kuhn BSt’78 and her husband, Michael, the Michael and Alice Kuhn Foundation focuses on promoting social justice through philanthropic programs in Texas and across the United States. Inspired by the core values of the family’s Jewish faith, the foundation’s mission focuses on eradicating poverty and offering equal opportunities for all.

“The key word is equality,” Alice Kuhn said. “In today’s world, you need an education to succeed; but not every student has access to the resources that will allow them to get a higher education. We want every student to have the ability to develop their full potential.”

Kuhn came to UT Dallas as the mother of three, enrolling in EPPS to complete her undergraduate degree in sociology. She had begun her college career years earlier at the University of Illinois Chicago but dropped out after only one year. Her experience returning to school as an adult shaped Kuhn’s awareness of the hardships that face many individuals seeking a college degree.

After graduating and moving to Austin, Kuhn read about UT Dallas’ Academic Bridge Program in a University publication. The program was similar to a program the family was already supporting at UT Austin, and she was inspired to direct some of the Kuhn Foundation’s annual support to UT Dallas students.

The Academic Bridge Program targets high-performing students enrolling at UT Dallas from high schools that did not provide a university-track curriculum. The program is designed to help high-potential, first-generation college students complete their college educations. Beginning the summer before freshman year, the Academic Bridge Program provides advising, mentoring and tutoring to students with an emphasis on developing college-level math and writing skills.

Amazon Robotics Powers New Systems Engineering Coursework

A $100,000 GIFT from Amazon Robotics will support the development of new coursework in the Erik Jonsson School of Engineering and Computer Science.

Designed to promote a talent pipeline for engineers trained in functional safety, Amazon Robotics’ gift will benefit UT Dallas’ Department of Systems Engineering led by Dr. Steve Yurkovich, holder of the Louis Beecherl, Jr. Distinguished Chair. By expanding offerings in functional safety, the department is looking to train students with highly desirable professional skills.

“This gift means that our students will be on the cutting edge of something new,” Yurkovich said. “They’ll see that this work is different from what they’ve experienced in other classes, and that it’s something today’s engineers need to be prepared for.”

Automation is taking on an increasingly important role in the modern economy, with companies like Amazon investing heavily in the deployment of autonomous robots in warehouses and delivery services around the globe. When implemented at such a scale, ensuring the safe functioning of every machine becomes a critical concern for corporations like Amazon.

“When you have a control system in charge of a robot, you also need a separate system designed specifically to ensure that this robot can never cause harm to humans, buildings, machinery or anything else,” said Justin Croyce, principal functional safety engineer at Amazon Robotics. “Functional safety engineers are unique in that they must have a holistic understanding of the entire robotic system, they need to know elements of hardware design, software design, development and systems engineering.”

While opportunities for functional safety engineers grow, most engineering programs do not yet offer courses that provide students with the necessary combination of skills needed to succeed in the field. This shortfall of talent is a problem that Amazon Robotics hopes to begin solving through its partnership with UT Dallas.

“Amazon has a passion for trying to be forward thinking, and what we see is that we do not have a supply of engineers experienced in functional safety and that this severe deficit will continue for years to come,” Croyce said. “Connecting with a university in a way that creates a pipeline of engineers who have this exposure is going to help fulfill our needs.”

Amazon’s gift will help expand existing courses like those offered in the Jonsson School by Erik Reynolds, a lecturer in systems engineering. After integrating functional safety elements into its current offerings, department leaders envision the creation of a new certificate program that will provide students with the depth of experience necessary to support the advancement of innovative technologies across the industry.

“We were excited to see the work already taking place at UT Dallas,” Croyce said. “But there was also this agility and an eagerness to collaborate and learn. We really feel like we are aligned with UT Dallas in our focus for the future.”

From left: Jonsson School Dean Dr. Stephanie Adams, Amazon Robotics employees Justin Croyce and Kobe Boateng, Dr. Steve Yurkovich and Andrew Sherwood of the Jonsson School celebrated the new partnership.
Family Honors Barbara Rabin Legacy

According to friends and family, Barbara Rabin was an amazing woman, leader and volunteer in the Dallas Jewish community and throughout the city. To honor her legacy, her husband, Stan Rabin, made a gift of $350,000 to The University of Texas at Dallas to name the reference library at the Ackerman Center for Holocaust Studies and continue to support a distinguished professorship within the center.

A ribbon-cutting for the Barbara Rabin Library in the Erik Jonsson Academic Center was held in late 2022.

“Barbara was an extraordinary woman who grew up in Borger, Texas, a town of about 12,000 people and 10 Jewish families,” Rabin said. “For her growing up in a small town like that and with her family being so involved there since the 1930s, engagement in the general community as well as the Jewish community was so important.”

Stan and Barbara Rabin married in 1965 in California where she was attending the University of California, Berkeley. In 1970, the couple moved to Dallas where Stan Rabin, an engineer, joined Commercial Metals Co. He was later appointed CEO and positioned the firm as an international leader in scrap metal processing. Barbara Rabin actively supported the company, as well as many organizations in her community, including the Ackerman Center, Dallas Holocaust and Human Rights Museum, Dallas Symphony Association, Jewish Federation of Greater Dallas and United Way. She died in 2020 after battling pancreatic cancer.

“The concept that you have to teach the past to change the future was so important to Barbara,” Rabin said. “Unfortunately, we’re seeing the rise of antisemitism and other human rights issues, so more than ever the Ackerman Center needs to flourish and keep growing.”

THOMAS B. SPENCER BA’02, MBA’08, PHD’16 and Jay Scott MA’09, MS’10, MS’12, PhD’15 have been friends since their doctoral orientation in the School of Economic, Political and Policy Sciences (EPPS). Their recent gifts to UT Dallas will provide professional development resources for future EPPS students.

Spencer and his wife, Lily, created the Thomas and Lily Spencer Student Support Fund to offset costs related to student memberships in professional organizations. Motivated by the impact of Thomas’ own networking experience in professional societies, the Spencers’ gift aims to help EPPS students prepare for life after graduation.

“Professional societies serve important roles helping students move from academic learning to being professionals who are successful in their careers and in life on a broader scale,” Spencer said. “Societies give a leg up in terms of accessibility to professions while welcoming people from a diversity of backgrounds into a successful and impactful life.”

A first-generation college student and current associate vice president for research operations at UT Rio Grande Valley, Spencer is grateful for the many individuals who provided direction and support during his formative years at UT Dallas. In recognition of his gift and the contributions of those important supporters, a room in Green Hall was named the Thomas Spencer and Friends Conference Room.

Among the friends referenced in the room’s name is Dr. James “Jay” Scott, a clinical professor in the Naveen Jindal School of Management. Spencer and Scott grew close during their time in EPPS’ doctoral program in public affairs. They have remained friends since graduation, even working together for a time at UT Southwestern Medical Center in academic and administrative IT.

Scott made a complementary gift to EPPS to create the James Scott International Experiences Fund, which is also designed to provide students with critical professional development opportunities.

“This fund is meant to help students travel to conferences and present papers,” Scott said. “These are activities which will help students along in their career but which not all students can afford.”

At the Thomas Spencer and Friends Conference Room dedication, Dr. Jennifer S. Holmes, dean of EPPS and Lloyd V. Berkner Professor, spoke about the impact that gifts can have on students.

“Many of our students have serious need and real financial pressures,” Holmes said. “Gifts like these really help students keep on track and get the kinds of experiences they need to be successful. I hope that all our students can have transformative educational experiences and build lasting friendships like Drs. Spencer and Scott.”
The Crow Museum of Asian Art debuted Cast: Molding a New Museum for UT Dallas, an exhibition illustrating how the forthcoming Edith and Peter O’Donnell Jr. Athenaeum will come to life.

Madan Goyal (left) and Morphosis Architects partner Arne Emerson viewed a scale model of the Athenaeum’s first phase at the opening of the exhibition.

A bronze statue of Jack Kilby, Nobel laureate and inventor of the integrated circuit – also known as the microchip – was commissioned and gifted to UT Dallas by Harlan Crow and now stands in Texas Instruments Plaza in the heart of campus.

A Celebration of Comets

UT Dallas supporters and alumni attended the 2022 Celebration of Support including (from left) Ruth Hemmig, Ray Hemmig, Diane McNulty MS’78, PhD’84, Susan Nash, Kevin Ryan MBA’95 and Ron Nash MS’79.

UT Dallas graduates: family and friends pose for pictures with Temoc at the post-commencement Grads on the Green celebration at the Davidson-Gundy Alumni Center.

Dr. Michael Hinojosa (center), former Dallas Independent School District superintendent, posed with Jindal Young Scholars after headlining the 2022 Scholarship Breakfast. The event raised more than $92,000 to support student scholarships in the Naveen Jindal School of Management.

UT Dallas students celebrated North Texas Giving Day 2022 by writing thank-you notes to donors outside the Davidson-Gundy Alumni Center.
Students are excited to be at UT Dallas. It would be amazing if we could give all Comets the resources to succeed, whether that’s improved common space on campus, more staffing, more advising or more opportunities and majors for all the unique individuals who come here.

— Kruthi Kanduri
President, UT Dallas Student Government

Coming to UTD was the chance of a lifetime in terms of getting a great scholarship offer that worked for my budget. I love attending a school where the student life is really distinct and where students have a passion for learning about things they haven’t experienced before.

— Margaret Moore
Vice President, UT Dallas Student Government

A UT Dallas education changes students’ lives. By funding scholarships, fellowships and student support, our donors make UT Dallas a top choice for talented students ready to make a difference for the future.

Top 10 Destination for National Merit Scholars

66% of graduating seniors have no student debt

65% of undergraduates receive financial aid