

Baylor
College of
Medicine



DIRECT

ANNUAL REPORT 2023

DIRECT

THE BAYLOR COLLEGE OF MEDICINE STRATEGIC PLAN

DISCOVER

INNOVATE

REACH

EDUCATE

CREATE

TREAT

Dear Baylor College of Medicine Friends and Colleagues,

This Annual Report focuses on both milestones and beginnings. In FY23, we marked three significant anniversaries, representing all of the College's mission areas.



In Research, we celebrated the 20th anniversary of the completion of the Human Genome Project, a global effort to generate the first sequence of the human genome. Baylor's Human Genome Sequencing Center was one of five major contributors. Since then new technologies have made sequencing of individual genomes possible. Our Center is now involved with the NIH's *All of Us* program, an effort to sequence the genomes and collect the health data of 1 million volunteers across the nation.

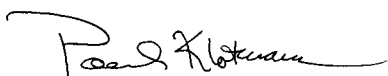
In Education, the Michael E. DeBakey High School for Health Professions celebrated 50 years. This first-of-its-kind program laid the groundwork for the extensive pathway program Baylor has developed for middle and high school students. The school continues to have phenomenal success.

In Clinical and Community, we celebrated the 20th anniversary of the Botswana-Baylor Children's Centre of Excellence. It was the first pediatric HIV clinic on the African continent when it opened as a partnership of the government of Botswana and the Baylor International Pediatric AIDS initiative at Texas Children's Hospital, with support from the Bristol Myers Squibb Foundation. The African country has now eliminated mother-to-child transmission of HIV, the first to do so on the continent.

We also kicked off two significant projects this year. The inaugural class of the School of Medicine Temple Campus began classes this summer and the official start of construction on the Lillie and Roy Cullen Tower was marked with a celebration. This innovative, state-of the art, educational space is the first phase of Baylor's planned Health Sciences Park on the McNair Campus.

Our Annual Report is called DIRECT, referencing the College's strategic plan. The name comes from the objectives that are most important to our success: Discover, Innovate, Reach, Educate, Create and Treat. You will see updates on each of these areas in the report.

I hope you enjoy reading just a sample of the College's activities in the last fiscal year.


Paul Klotman, M.D.



Blue Ridge Institute
for Medical Research

The Blue Ridge Institute provides annual rankings of NIH funding to academic institutions.

BAYLOR BY THE NUMBERS



IN TEXAS



NATIONALLY

MORE THAN
\$356M



IN FUNDING FROM NIH FOR FY '22

20%

SHARE OF NIH
FUNDING IN TEXAS

47%

SHARE OF NIH
FUNDING IN
TEXAS MEDICAL
CENTER

5

DEPARTMENTS
RANKED IN THE
TOP 10 NATIONALLY

9

DEPARTMENTS
RANKED IN THE
TOP 30 NATIONALLY

Celebrating the 20th Anniversary of the Human Genome Project and Beyond



This year marked the 20th anniversary of the completion of the Human Genome Project, a global effort to generate the first sequence of the human genome, and Baylor's Human Genome Sequencing Center, led by founding director Dr. Richard Gibbs, was among the five major contributors

to the project. This effort provided a human genetic blueprint, building a framework of knowledge for pursuing numerous new and exciting biological studies and eventually integrating them into diagnosis and therapies for human diseases.

Today, the HGSC is involved in another nationwide genome sequencing project, the National Institutes of Health's *All of Us* research program, which is an effort to sequence the genome and collect health data of 1 million volunteers from across the United States. The goal is to create a database with a diverse representation of demographics, geography and health status, which can be used as the basis for studies on all types of health conditions.

McNair Scholars named for fiscal year 2023



Dr. Barna Dudok, assistant professor of neurology

Dudok's research is focused on how inhibitory neurons control the activity of neural circuits by synchronizing and pacing the activity of excitatory neurons, the neurons responsible for the flow of information.



Dr. Benjamin Hayden, professor of neurosurgery

Hayden is an electrophysiologist who has been studying cognition for 20 years. His research focuses on self-control in natural situations— what goes wrong when self-control fails and what goes right when it succeeds.



Dr. Sarah Heilbronner, assistant professor of neurosurgery

Heilbronner's research aims to understand the pattern of connections made by neurons to determine how behavior, cognition and emotion arises. Her work is focused on mapping the wiring of the brain.



Dr. Shelly Buffington, assistant professor of neuroscience

Buffington's research focuses on understanding how maternal environmental exposures leading up to and throughout the female reproductive lifespan impact neurodevelopmental health outcomes and risk factors for neurodevelopmental disorders in descendant generations.

Improving patient care begins with basic research

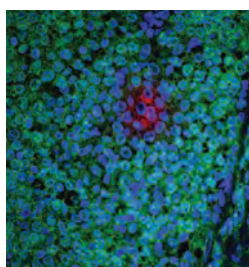
GlyNAC supplementation improves cognitive decline, brain health



Researchers discovered that GlyNAC improved or reversed age-associated cognitive decline and improved multiple associated biological defects in the brains of naturally aging mice,

including mitochondrial dysfunction, oxidative stress, inflammation and genomic damage. A clinical trial is in the works to study the effect of GlyNAC on cognitive decline and brain health in aging people.

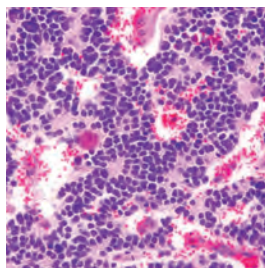
Personalized breast cancer therapy



Scientists developed and independently validated a multiparameter molecular test that helps predict at the time of diagnosis the most likely response of a breast tumor to anti-HER2 therapy without chemotherapy. Therefore this

will help in identifying patients who may benefit from chemo-sparing dual HER2-targeted therapy alone.

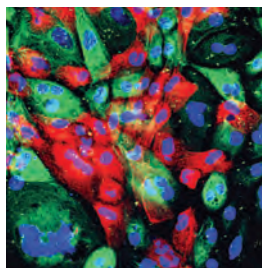
CAR-NKT cell therapy shows promising results against neuroblastoma



A report of interim results from a first-in-human phase 1 clinical trial of a genetically engineered natural killer T cell immunotherapy for neuroblastoma, a childhood tumor that most commonly arises in the adrenal gland,

shows the treatment was well tolerated and evidence of strong antitumor activity.

Eliminating gene triggers effective anti-cancer response



Working with animal models of breast and prostate cancer, researchers discovered that eliminating the gene SRC-3, specifically in a type of immune cells called regulatory T cells, triggered a lifelong anti-cancer response that

eradicated the tumor without the typical side effects observed with other therapies.

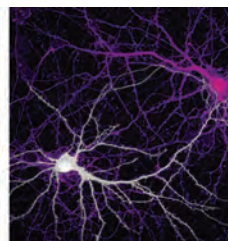
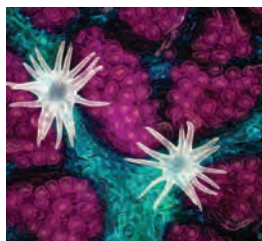
Biotech venture PHIOGEN, a spinoff of TAILOR Labs, to tackle antimicrobial resistance



Supported by TAILOR Labs' decades' worth

of revolutionary research, PHIOGEN has developed a world-first technology platform that mobilizes the natural power of bacteriophages, viruses that infect and destroy bacteria. This marks a significant medical breakthrough for countering the global, life-threatening threat of antimicrobial-resistant infections.

Science is art



Two images produced by Jason Kirk, director of the Optical Imaging & Vital Microscopy Core,

were chosen by the United States Postal Service for new stamp designs. The images are part of the Life Magnified category. One shows an oak leaf surface, the other, the detailed neurons of a mouse brain.

BCM Ventures brings collaboration and innovation together

Innovation thrives at Baylor College of Medicine through collaboration, integration and data analytics. BCM Ventures brings it all together by structuring and coordinating interaction between faculty and industry collaborators. Led by Dr. Joseph Petrosino, chair of Molecular Virology and Microbiology and the College's chief innovation officer, BCM Ventures engages Baylor innovators, entrepreneurs and industry partners to develop and translate new discoveries to the marketplace. From drug discovery to cell and gene therapy, a pipeline is established to create the dialogue between creators and technology seekers, providing one interface and a single point of contact to make it easier to engage.

RESEARCH TOOLS: 7

(mouse models, genomics, etc.)

DIAGNOSTICS: 9

(oncology biomarkers, sequencing)

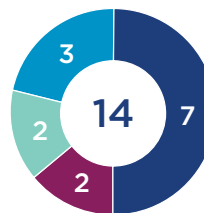
Faculty intellectual property disclosures

THERAPEUTICS



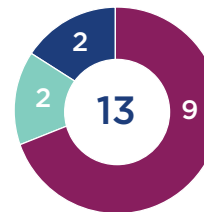
- Nanoparticle
- Drug target
- Small molecule
- Biologic
- Cell therapy
- Gene therapy

MEDICAL DEVICES



- Adult
- Women's health
- Pediatrics
- Laboratory

SOFTWARE



- Research
- Copyright
- Clinical

The commercialization process at BCM



Knowledge transfer is an intensive process and requires proactive, long-term commitment



On average, selected disclosures can take up to six months to a year to reach a viable commercial path

Resources, mentorship & business development strategy provided along the full path

Education and outreach begins prior to Step 1 (ongoing activity)

Financial activities & support are ongoing, based on mgmt. structure

Datathon 2022

Baylor continues to develop into a Learning Health System to support science, informatics, incentives and culture as it create continuous improvement and innovation in the delivery and creation of new knowledge.

Why a Datathon?

- Support the Learning Health System by gaining understanding of available data across the College
- Leverage this data and self-service tools to address questions that arise
- Identify weaknesses in datasets that need to be overcome
- Engage faculty, trainees, students and others across BCM and affiliates

The event calls for proposals for new projects to address issues in one of the four focus areas:

- Quality improvement
- Population health
- Research projects
- Education projects

36 proposals submitted

19 proposals selected for further discussion and potential application

THINC - Bridging innovation, RNA biology and drug discovery



The Therapeutic Innovation Center (THINC), a strategic research center led by Dr. Trey Westbrook, professor of biochemistry and molecular biology, was elevated to an academic

center. Established in 2017, THINC integrates multidisciplinary academic innovators in the science of RNA with biotech-inspired teams that collaborate to unveil new mechanisms of RNA regulation, develop new technologic platforms and discover early-stage therapeutics. Westbrook also holds the Robert A. Welch Chair in Chemistry and is a McNair Scholar.



Center for Space Medicine Signs Agreement with South Korea

A new agreement with the Korea National Institute of Health will enable international collaboration for scientific research and discovery in the field of space health. This partnership has paved the way for an inaugural Korea-U.S. Space Health Symposium organized by the Inha Research Institute for Aerospace Medicine in South Korea. At this symposium, a cooperative framework for international space medicine research will be established.



Botswana and Baylor begin vaccine development training program

Through an agreement signed between the Texas Children's Hospital Center for Vaccine Development in collaboration with Baylor College of Medicine and the government of Botswana, the first cohort of scientists from the African country began their training under the mentorship of Drs. Maria Elena Bottazzi and Peter Hotez. Fellows will learn all aspects of early to mid-stage vaccine development and develop a vaccine pilot project in Botswana. Baylor will oversee nine fellows in total.



Milestone for HIV care in Africa

The Botswana-Baylor Children's Clinical Centre of Excellence (Botswana-Baylor Trust) held a 20th anniversary celebration this year. When it opened as a partnership between the government of Botswana and the Baylor College of Medicine International Pediatric AIDS Initiative at Texas Children's Hospital (BIPAI), it was the first pediatric HIV clinic on the African continent. Today, nearly 40,000 children and family members have benefited from HIV/AIDS care and treatment, contributing



significantly to Botswana's near elimination of mother-to-child transmission of human immunodeficiency virus (HIV). The program was established with significant support from the Bristol Myers Squibb Foundation and has grown to outreach services across the country and now also provides pediatric cancer care.

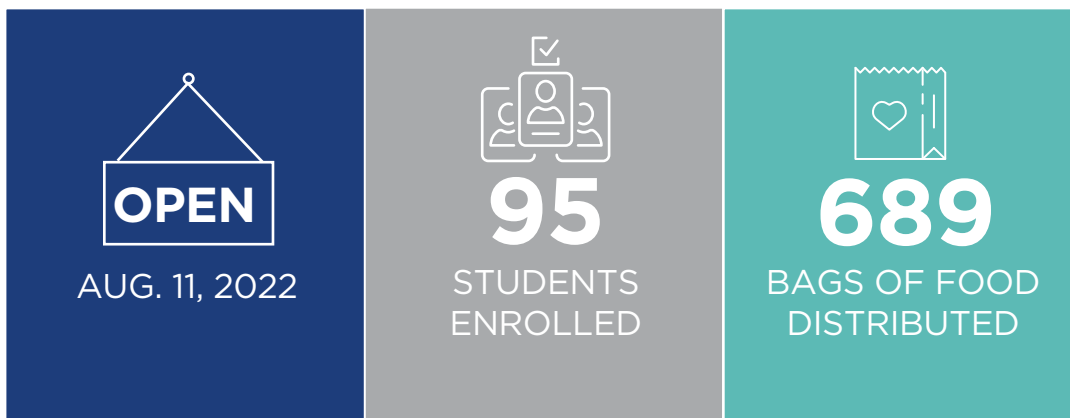
Rodeo Houston

Baylor College of Medicine was again a sponsor of the Houston Livestock Show & Rodeo. Baylor faculty and staff shared healthcare information with attendees and volunteered for Rodeo Acts of Kindness and other activities during the three-week event.



The GRAB

The Grocery Resource at Baylor College of Medicine (GRAB) was established in 2022 to meet the needs of Baylor students who are facing food insecurity. It is run by the Office of Communications and Community Outreach, staffed in part by Baylor volunteers and supported through monetary donations.



Volunteer Time Off

Baylor employees continue to support the Houston community by taking part in the Volunteer Time Off program. Employees take the equivalent of one paid workday per fiscal year to volunteer at the organization of their choice or take part in a College hosted event.



Hermann Park clean up



BARC animal shelter



BEAR toy drive

Michael E. DeBakey High School for Health Professions celebrates 50 years

For half a century, the Michael E. DeBakey High School for Health Professions has prepared students across the Houston area for careers in science and healthcare. In honor of this milestone, alumni gathered to celebrate with a gala at the Houston Health Museum and with a science symposium, which featured more than 50 alumni speaking to current students about their education and roles in the healthcare industry. The high school also laid the foundation for Baylor pathway programs, which promote education leading toward careers in medicine, scientific research and the health sciences beginning at the middle school level.



Lillie and Roy Cullen Tower

In May, construction began on the new Lillie and Roy Cullen Tower, an innovative, collaborative space for medical education and research scheduled to open in 2026. The 503,000 square-foot building is the first phase of Baylor's planned Health Sciences Park and will include research space focused on data analytics, active learning educational spaces, high-tech theater-style event space and state-of-the-art anatomy, teaching and simulation labs that provide hands-on learning. The Cullen Foundation, The Cullen Trust for Health Care and The Cullen Trust for Higher Education donated a combined total of \$30 million to build the new Cullen Tower, contributing significantly to the \$100 million that has been raised for the project to date.

Inaugural class at the School of Medicine Temple Campus begins

Baylor College of Medicine’s first regional campus opened in Temple, Texas in June. The inaugural class of 40 students received their white coats to signify the start of their education. The students began classes July 31 at the state-of-the-art Baylor Scott & White Medical Center in Temple. The new class of 186 students at Baylor’s Houston Campus also received their white coats on August 11. Both ceremonies were held concurrently and streamed virtually.



GRADUATES

School of Medicine	172
Dual Degrees	
• M.D. / Ph.D.	8
• M.D. / M.B.A.	6
• M.D. / M.P.H.	9
Graduate School of Biomedical Sciences	88
School of Health Professions	
• Physician Assistant Program	40
• Doctor of Nursing Practice - Nurse Anesthesia Program	24
• Orthotics and Prosthetics Program	22
• Genetic Counseling Program	9
Diploma in Tropical Medicine	9



Department merger announced

The Department of Biochemistry and Molecular Biology and the Department of Chemical Biology merged into a new department named the Marrs McLean Department of Biochemistry and Molecular Pharmacology. Dr. Timothy Palzkill serves as chair.



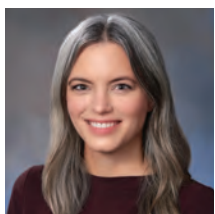
Brenneman named as board chair

Greg Brenneman, executive chairman of CCMP, took the reins as chair of the Baylor College of Medicine Board of Trustees in May. He has been on the Baylor board since 2012.



NINDS Award for Outstanding Investigator

Dr. Benjamin Deneen, professor and Dr. Russell J. and Marian K. Blattner Chair in neurosurgery, director of the Center for Cancer Neuroscience and a member of the Dan L Duncan Comprehensive Cancer Center, has been awarded the National Institute of Neurological Disorders and Stroke Outstanding Investigator Award.



HHMI Freeman Hrabowski Scholar named

Dr. Kara Marshall, assistant professor of neuroscience, a McNair Scholar and a Pew Scholar in the Biomedical Sciences, has been named a Freeman Hrabowski Scholar by the Howard Hughes Medical Institute. She is among 31 scientists from across the country recognized as outstanding early career faculty members.

New Appointments



Dr. Hashem El-Serag, Chair of the Margaret M. and Albert B. Alkek Department of Medicine, has been appointed Vice President for the Learning Health System Initiative at Baylor.



Dr. Todd Rosengart, Chair of the Michael E. DeBakey Department of Surgery, has been appointed as Baylor Vice President for Hospital Operations and Quality Improvement at Baylor St. Luke's Medical Center.



Kimberly Jordan has been appointed Chief Audit and Compliance Officer.

Mosaic Project



The Mosaic Project is an overhaul of the current SAP system leveraging the latest technologies to transform and simplify operational processes while also creating opportunities for teams to be more connected, timely and efficient. This transition is critical to Baylor's future success and involves collaborative efforts across the missions, departments and functions. The transition is a multi-year long process.

2022 completed operations:

- Procure to Pay – streamline the user experience for shopping, procurement and payment of goods & services
- Supplemental Pay application - a single system that leverages an automated review and approval workflow for Departments, HR-Compensation, Budget, and Finance teams.



Federal funding for the CNRC announced

U.S. Rep. Al Green presented a \$7.1 million check from the Congressional Community Project Funding program to support energy-saving facility upgrades at the USDA/ARS

Children's Nutrition Research Center at Baylor and Texas Children's Hospital. Baylor President Dr. Paul Klotman, CNRC Director Dr. Dennis Bier and others accepted the check. Former U.S. Rep. Jack Fields, a member of the Baylor Board of Trustees, and County Commissioner Rodney Ellis also attended to show support.



Helping the Baylor community H.E.A.L.

After receiving a grant from the Association of American Medical Colleges in 2020, Drs. Ricardo Nuila, Andrew Childress and Larry Laufman, along with instructors Burke Nixon and Stacy Nigliazzo,

launched the Humanities Expression and Arts Lab, under the Office of the Senior Dean, at Baylor College of Medicine.

The program originally started as the Narrative Medicine Program and has broaden its offerings into a pathway that will help students, residents and faculty find other ways to approach medicine. H.E.A.L. activities include creative writing and narrative workshops, a speaker series and storytelling events through collaborative partners like the Museum of Fine Arts - Houston. These events are open to Baylor students, residents, post-doctoral associates and faculty and on some occasions to all Texas Medical Center member institutions.

BCM Well-Being: A holistic approach



Wellness at Baylor is now known as BCM Well-Being and is available to all staff, students and faculty locally and globally. It is a resource that unites multiple initiatives of the Baylor community from enhanced onsite facilities to

new virtual health programs for the entire Baylor community.



Dr. Lara Shekerdemian

Department of Pediatrics



Dr. Doug Dirschl

*The Joseph Barnhart
Department of Orthopedic Surgery*



Dr. Thomas Lloyd

Department of Neurology



Dr. Paul Pfaffinger

Department of Neuroscience



Dr. Ida Orengo

Department of Dermatology

500th robotic surgery

Heart surgeon Dr. Kenneth K. Liao, professor and chief of the division of cardiothoracic transplantation and circulatory support in the Michael E. DeBakey Department of Surgery, and his team performed the 500th robotic heart surgery in July at Baylor St. Luke's Medical Center. He is among only a handful of highly experienced robotic cardiac surgeons in the United States using the device.



Baylor's Cancer Center opens at O'Quinn Medical Tower

St. Luke's Health ushered in a new era of internationally renowned outpatient and cancer care with the opening of the new O'Quinn Medical Tower at McNair. It is the latest addition to the Baylor St. Luke's Medical Center McNair Campus and adjoins the existing McNair Hospital Tower, which opened in 2019. The O'Quinn Medical Tower enhances the Dan L Duncan Comprehensive Cancer Center by tripling it in size with an additional 80-bay infusion center, more than 70 exam rooms, and state-of-the-art imaging and radiation treatment equipment.



Move to Kirby Glen

The new outpatient imaging center at Kirby Glen provides our patients the flexibility to have their imaging procedures done in an ambulatory environment as an alternative to hospital-based imaging. This relocation follows 18 years of service at the 6620 Main Street location. The Baylor Sleep Center also transitioned to a free-standing sleep center at Kirby Glen, allowing the expansion of sleep services to be performed in an ambulatory environment. The Sleep Center was accredited by the American Academy of Sleep Medicine on May 18, 2023. Physical Therapy services are expected to open at Kirby Glen in 2023 and will include musculoskeletal and sports therapy.

CHRISTUS Children's – New name, same great affiliate

Affiliated with Baylor since 2013, the Children's Hospital of San Antonio announced its new name, CHRISTUS Children's, part of the CHRISTUS Health system. With its flagship hospital in the heart of downtown San Antonio, CHRISTUS Children's has expanded clinics throughout the area. The new name is the beginning of a whole-campus transformation that will include expansion of pediatric specialty care and facilities.



As Houston's premier academic medical practice, Baylor Medicine delivers

- ✓ A personalized medical experience that is built around what makes you unique - your needs, your goals, your health.
- ✓ Convenient access to care and timely response to your questions.
- ✓ Nationally recognized physicians, scientists and clinicians delivering compassionate, innovative, evidence-based care.
- ✓ An enduring commitment to excellence.
- ✓ An active partnership with our patients and our diverse community.



Primary Care Options



Kirby Family Medicine



River Oaks Family Medicine



Fannin Tower Family Medicine



General Internal Medicine
Located in McNair building



Concierge Healthcare Clinic
Located in McNair building

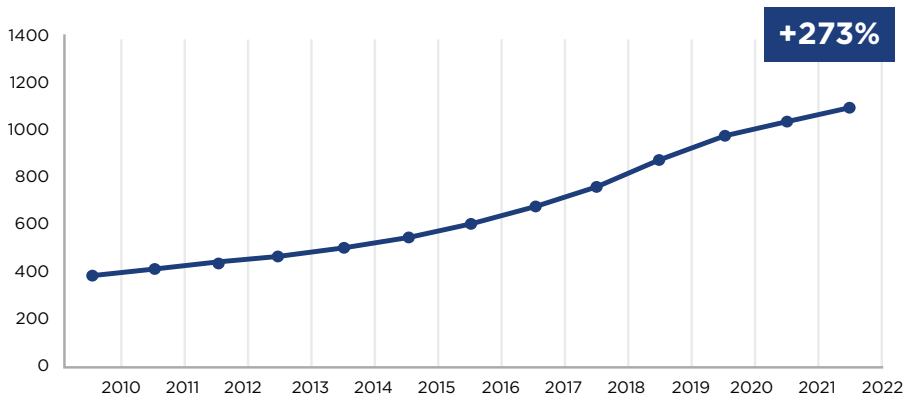


Employee & Family Care Clinics
Located in Fannin Tower & Sugar Land location



Geriatrics & Palliative Care
Located in McNair building

Baylor Medicine Faculty Growth



FINANCIALS

\$2,529M

FY2023 REVENUES

\$1,474M

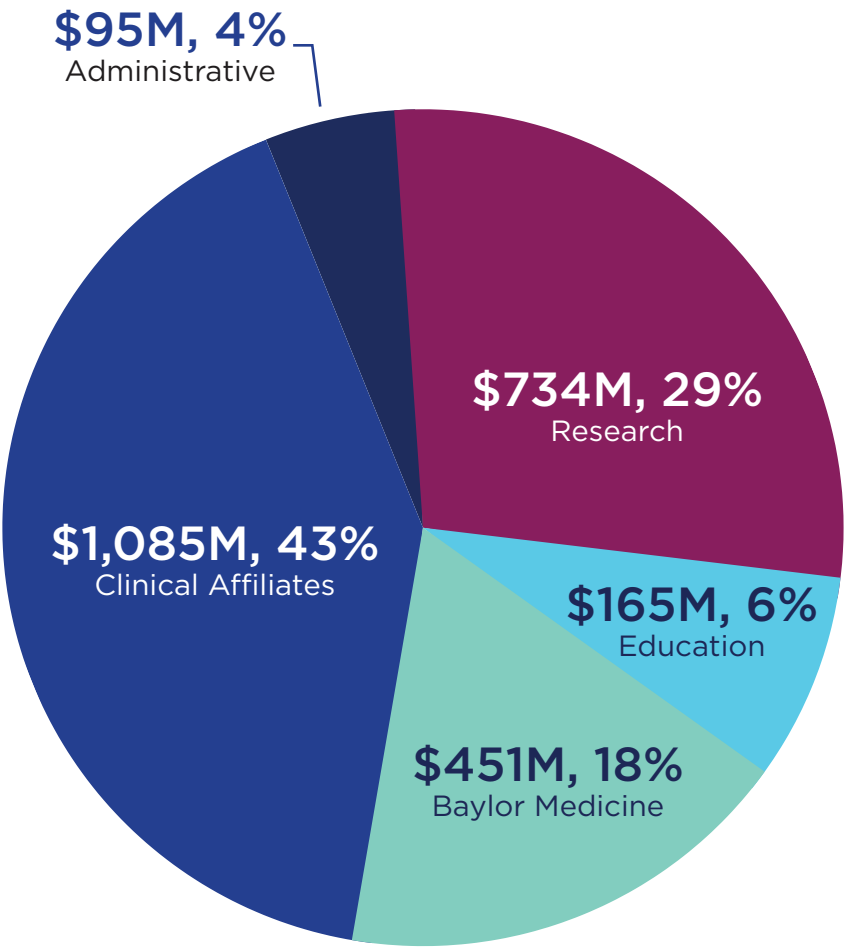
FY2023 ENDOWMENT BALANCE

\$116M

FY2023 FUNDS RAISED*

**Includes cash gifts, planned gifts, recordable and non-recordable pledges*

FY2023 Revenue by Mission Area



For FY2023, Baylor Medicine includes support related to Baylor St. Luke's and Clinical Affiliates includes Baylor St. Luke's Medical Center joint venture.

Bond Credit Rating

FEBRUARY 2023

A

S&P Rating

Positive

Outlook

AFFILIATIONS

Clinical and Academic Affiliations

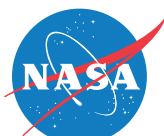
Joint Venture Partners



Affiliated Hospitals



Major Academic Partners



MISSION

Baylor College of Medicine is a health sciences university that creates knowledge and applies science and discoveries to further education, healthcare and community service locally and globally.

VISION

Improving health through science, scholarship and innovation.



RESPECT

Integrity

INNOVATION

Teamwork

Excellence

Baylor
College of
Medicine