

2024-2029

STRATEGIC PLAN

Baylor College of Medicine

DAN L DUNCAN COMPREHENSIVE CANCER CENTER



A Cancer Center Designated by the National Cancer Institute



Dr. Pavan Reddy Director, Dan L Duncan Comprehensive Cancer Center John M. O'Quinn Chair in Oncology Senior Associate Dean, Cancer Programs Baylor College of Medicine

"We will pioneer the next generation of innovative diagnostics and treatments while advancing novel strategies to prevent and eradicate cancer for all patients."

DIRECTOR'S OVERVIEW

There is nothing simple about establishing a legacy of integrity, excellence and belonging in the most diverse city in America, yet this is what the Dan L Duncan Comprehensive Cancer Center has achieved for all Houstonians suffering from cancer.

Over the past 20 years, the center has fostered scientific excellence by conducting groundbreaking transdisciplinary research that has revolutionized the way many cancers are diagnosed and treated. Our physicians provide comprehensive, compassionate, cutting-edge care to individuals from all walks of life — veterans, the indigent and uninsured, and children and adults from all over the world.

When I joined the DLDCCC at Baylor College of Medicine in 2022, I hosted numerous meetings with center members and the community to identify specific needs and goals.

With bi-directional input and enthusiastic support from institutional leaders, we developed six strategic pillars that form the foundation of the center's basic, translational and clinical projects and themes. These pillars renew our focus on cancer equity and underpin the scientific and clinical programs that align with our strategic mission and values.

It is an honor to present the center's strategic plan for the next five years, which builds on the groundbreaking research and patient-centered care championed by founding director Dr. Kent Osborne.

With this strategic plan, we will pioneer the next generation of innovative diagnostics and treatments while advancing novel strategies to prevent and eradicate cancer for all patients. By partnering cutting-edge science and clinical excellence with multidirectional engagement, we will pursue the ultimate goal of eradicating cancer from our community and beyond.

Sincerely,

Dr. Pavan Reddy

Director, Dan L Duncan Comprehensive Cancer Center

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VISION, MISSION & VALUES



VISION

Eradicate cancer and improve the health of every patient in our community through transformational research, innovative advances and excellence in scholarship.

MISSION

Provide patient-centered and compassionate care, perform transdisciplinary research and train the next generation of leaders to make groundbreaking discoveries, develop novel prevention and treatment strategies and reduce cancer inequities. We will unite these activities in a world-class center committed to excellence, empathy and equity. VALUES

INTEGRITY EXCELLENCE

EMPATHY

BELONGING

EQUITY

INNOVATION

TRANSDISCIPLINARY RESEARCH



EXECUTIVE SUMMARY

The Dan L Duncan Comprehensive Cancer Center combines all Baylor College of Medicine cancer research and treatment capabilities under one umbrella. Located in Houston, Texas — the most diverse city in the U.S. — the DLDCCC has the unique privilege of providing excellent and empathetic cancer care to pediatric and adult patients from all walks of life at five distinct clinical spaces.

Our world-renowned translational and transdisciplinary research is reflective of our catchment area, ensuring that the work we do will improve quality of life and survival rates for everyone with cancer in Texas and beyond.

Designated a comprehensive cancer center by the National Cancer Institute in 2015, the DLDCCC has a long history of significant accomplishments in research and cancer care.

Of specific note, we underscore ongoing activities in career enhancement and education of future doctors and scientists. Community outreach is imperative to reducing health disparities and improving survival from cancer, especially in underserved populations.

The DLDCCC is located in a newly completed clinical space on the Baylor St. Luke's Medical Center McNair Campus.

Opened in May 2023, the facility includes four floors that allows the cancer center to centralize

our clinical cancer programs in one location while providing faculty care for patients. Our new clinical venue augments clinical research with additional infusion and pharmacy space while facilitating the expansion of our multidisciplinary, cancer-specific integrated practice units.

The McNair Campus is immediately adjacent to Texas Medical Center 3, a spacious new campus that brings together major institutions in the medical center to facilitate collaboration. In addition to our partnership with St. Luke's, the DLDCCC partners with Texas Children's Hospital & Cancer Center, the Michael E. DeBakey Department of Veterans Affairs Medical Center, and Harris Health Ben Taub Hospital & Smith Clinic to serve Houston's diverse population.

In our last strategic plan, the DLDCCC strengthened our existing research programs and multidisciplinary disease working groups around specific thematic areas, while working to foster creative collaborations among faculty across all programmatic, departmental and institutional units. These efforts will facilitate innovative discoveries and translation to clinical practice. We also enhanced our integrated clinical care and clinical research programs across all BCM clinical venues and partnerships to broaden expertise in specific cancers, increase patient accrual on clinical trials and generate clinical revenue. We worked to develop an outstanding research infrastructure that enables investigators, research programs, population health experts and disease working groups to be optimally productive. Taking measures to ensure accurate dissemination of information and new discoveries to our community using novel research-validated methods to prevent and control cancer was emphasized.

We also implemented novel cancer research training and career enhancement programs to leverage BCM's new Cancer Biology Graduate Program and its outstanding medical education program, as well as other unique strengths in the DLDCCC, BCM and the Texas Medical Center.

An important area of focus was developing a plan to enhance the diversity of our cancer center members, leadership and staff to reflect our catchment area.

Growing our clinical research programs and patient-centered care enterprise is of high priority. Meanwhile, successful recruitment of expert faculty, both historically and in the future, will spur the development of new areas of research; enhance our focus in quantitative science, environment, gene interactions; proteogenomics and precision cancer medicine; and promote drug development that targets replication stress, the unfolded protein response, epigenetics and cancer progenitor cells.

Two new centers at BCM led by our cancer center members are key to drug development efforts: the Center for Drug Discovery and the Therapeutic Innovation Center. The centers focus on developing new drugs that target transcriptional regulation, thereby leveraging our strong research efforts in nuclear receptors transcription and chromatin biology.

Clinical faculty recruitment over the past five years, along with funding for additional recruits, were guaranteed by the hospital and college in the future. Innovative discovery, compassionate care and community outreach are at the core of all we do.

OUR STRATEGIC PLAN ENSURES

- We target current and approaching areas of cancer research and care for patients to defeat cancer.
- We embrace our partnerships across the Texas Medical Center as we build programs that alignment with our partners.
- We collaboratively follow a common vision to support the continuum of care for patients from all walks of life in Houston, the state of Texas and beyond.





HISTORY & BACKGROUND

In 1997, Dr. Ralph Feigin envisioned the establishment of a cancer center at Baylor College of Medicine underpinned by an unwavering commitment to cure and care for all who suffered from cancer.

The Dan L Duncan Comprehensive Cancer Center was officially established in 2006, following a transformative \$100 million gift from Dan L Duncan and his family. The center received National Cancer Institute designation in 2007 following a successful P30 Cancer Center Support Grant (CCSG) and achieved comprehensive center designation from NCI in 2015.

The center has grown and prospered to encompass groundbreaking research programs and innovative shared resources. Center membership has grown, and cancer-relevant research grant support has increased from \$99 million in 2007 to more than \$180 million today.

Many of our basic, translational and clinical research accomplishments have contributed to a new understanding of the pathogenesis, diagnosis, prevention and treatment of cancer and improved outcomes for patients.

In view of our strong affiliations with multiple hospitals, the DLDCCC is considered the cancer center for all Houstonians. Indeed, though our partnership with Harris Health's Ben Taub Hospital & The Smith Clinic, we serve uninsured patients, including patients from underrepresented minority populations, as well as patients from the unhoused and incarcerated communities. Our physicians treat veterans with cancer at the Michael E. DeBakey Veterans Administration Medical Center, which serves a large swath of the South and Southwestern U.S.

We are affiliated with Texas Children's Hospital and the Texas Children's Cancer Center, which is one of the largest children's cancer centers in the country and serves 50% of the children with cancer in the state of Texas. In addition, DLDCCC faculty treat patients at the Baylor St. Luke's Medical Center, one of the largest private hospitals in the region and a component of the national CommonSpirit Health network.

Our catchment area is a diverse patient population (38% Hispanic, 17% African American, 30% Non-Hispanic White, 8% Asian, and 3% other), and much of our research focuses on health problems common among patients in our region.

The DLDCCC is one of four NCI-designated centers in Texas, only three of which are designated as comprehensive cancer centers.







Michael E. DeBakey Veterans Administration Medical Center



Harris Health's Ben Taub Hospital

HISTORY & BACKGROUND *At a Glance*



DLDCCC RESEARCH PROGRAMS

- Chromatin Biology
- Tumor Biology
- Cancer Prevention & Population Science
- Cancer Cell & Gene Therapy
- Breast Cancer Program
- Pediatric Cancer Program

STRATEGIC PILLAR

- Cancer Equity
- Basic Immunology & Quantitative Sciences
- Environment and Diet on Cancer
- Cross-cutting Basic & Clinical Programs of Excellence
- Translation of DLDCCC Basic Concepts
- Synergistic Partnerships with Texas Institutions

CATCHMENT AREA OVERVIEW

Houston is the epicenter of the DLDCCC catchment

area. It is the fourth largest and most diverse city in the U.S. However, many communities are disenfranchised, and low-income families are disproportionately impacted by environmental hazards. Environmental injustice is exacerbated by lack of zoning, and there are more than 20 Superfund sites in the metropolitan area. The area is a hub for the petrochemical industry with more than 600 chemical plants, 10 refineries and more than 6,000 miles of oil, gas and chemical pipelines.

Our goal is to ensure all communities within our catchment area include the full age spectrum of patients and that communities benefit from innovative outreach, education, screening and primary prevention strategies.

The DLDCCC Community Outreach and Education (COE)team leverages new and existing academic and community partners, focusing largely on the medically underserved and all ethnic populations. The COE is a catalyst for translating research discoveries into clinical trials and evidence-based patient practice while ensuring bi-directional community engagement.

Environment and Diet on Cancer is a major focus of the DLDCCC's strategic plan. This focus is concomitant with Baylor College of Medicine's emerging role as a national leader in Precision Environmental Health, underscoring the important role of member research on **Genome: Environment** and **Epigenome: Environment** interactions.

CATCHMENT AREA OVERVIEW

- More than 7 million patients
- 9 counties
- 361 medically underserved areas

COMMUNITY OUTREACH AND EDUCATION GOALS

- Monitor cancer burden and risk factors in our catcment area to address cancer disparities
- Engage catcment area populations in outreach aimed at reducing cancer burden and disparities
- Enhance community-catalyzed research and community involvement in DLDCCC's research priorities, protocol design and implementation



STRATEGIC PLANNING PROCESS PRINCIPLES & PILLARS

Following his arrival in Fall 2022, Dr. Pavan Reddy held meetings with leaders of the DLDCCC, BCM and members of the cancer center to identify specific needs.

With clear and thoughtful input, we undertook the following process to meet the principles deemed critical for building on the previous strategic plan. With this process in place, we will also head into new areas of focus for the cancer center.

The principles included community input, bi-directional communication, integrity, rigor and a transdisciplinary approach to science and clinical care. Through the process, we developed a bottom-up, grassroots-based analysis complemented by a top-down, refined vision, resourcing and execution.

PRINCIPLES

- Ensuring integrity and excellence in all aspects of research, training, education, outreach and patient care.
- Enhancing crossfertilization, balanced funding, aligned membership, continued and complementary existing strengths and the development of emerging themes.
- Addressing community needs, equity, rigor and transdisciplinary science as our bedrock.



STRATEGIC PILLARS

- 1. Cancer Equity
- 2. Basic Immunology and Quantitative Sciences
- 3. Environment and Diet on Cancer
- 4. Cross-cutting Basic and Clinical Programs of Excellence
- 5. Translation of DLDCCC Basic Concepts
- 6. Synergistic Partnerships with Texas Institutions

STRATEGIC PILLAR

Leverage the opportunity to partner with investigators across a highly diverse and expansive state to develop approaches that increase equity through access to clinical trials and novel agents.

CANCER EQUITY

In 2022, we added Cancer Equity as a strategic goal to enhance our emphasis on bi-directional engagement with the community. This is of unique significance to the DLDCCC given the diversity of our catchment area and the patient populations we serve.

During the current award period, Cancer Prevention and Population Sciences (CPPS) and the Community Outreach and Engagement (COE) team collaborated to launch the "Apply HEAT" (Health Equity Across the Translational Research Continuum) special interest group.

The initiative brought COE together with CPPS members and members from other programs to discuss catchment area cancers and risk factors, showcase research on cancer health equity, and stimulate new catchment focused research. To prioritize support this overarching goal, we piloted initiatives that led to new awards and plan to extend these activities with new and ongoing support.

We propose the following goals:

- Provide access to cutting-edge immune effector cell therapies at Ben Taub Hospital.
- Develop novel and affordable technologies for early cancer detection.
- Expand partnerships with the rural populations in our catchment area.
- Increase screening and survivorship programs across the network.

Tactics to achieve these goals include engaging safety net hospital and community leaders; investing in resources, personnel and space; coordinating with the Office of Research and Cancer Cell and Gene Therapy investigators; and involving the Cancer Trials Support Unit with COE, CPPS and CAB teams.



STRATEGIC PILLAR BASIC IMMUNOLOGY & QUANTITATIVE SCIENCE

Members of the DLDCCC recognize the central role of immunology in developing future cancer research and clinical trials. Prioritizing our ability to leverage quantitative sciences and artificial intelligence (AI) in support of systems biology studies is underscored withing our strategic plan.

Therefore, we have identified a need for enhanced data sets, in common formats, with validated analyses.

We propose the following goals:

- Expand our expertise in fundamental and translational immunology with the aim of recruiting three to five early career scientists and two to three senior immunologists. We will focus on recruiting individuals with track records of excellence in fundamental immunology and cancer-specific, lab-based research.
- Integrate the development of experimental therapeutics and immunology by recruiting a translational immunologist who is focused on solid tumors. This expertise will complement the center's existing strengths in adult adoptive IEC therapies and our pediatric strengths in cell therapies.
- Enhance big data analytics and integration: novel pipeline development.
- Promote AI approaches for clinical trials.
- Leverage the Baylor College of Medicine Learning Health Center.

Coordination of this pillar will be overseen by the associate directors for Basic and Quantitative Science, the DLDCCC director and Basic Science department chairs.

Use innovative machine learning and expertise in data science to capture trends in demographics and identify disparities among cancer patient populations.



ENVIRONMENT & DIET ON CANCER

Baylor College of Medicine is home to the NIEHS P30 Gulf Coast Center for Precision Environmental Health (GC-CPEH), an NIEHS Training in Precision Environmental Health Sciences (TPEHS) T32, a joint NIEHS/ EPA supported P42 Superfund Research Center and a P50 Center of Excellence in Research on Environmental Health Disparities.

STRATEGIC

PILLAR

Our focus is to decipher the role of the environment in cancer, including risk, development, incidence, type, prognosis, treatment, prevention and outcomes. We will leverage our vibrant environmental health science research community, supported by these significant



awards, toward training, career development, ongoing seed funding and community outreach to promote environmental justice and support communities that are disproportionately affected by adverse environmental exposures.

DLDCCC members collaboratively lead these initiatives to promote the success of ongoing environmental health science activities. We embrace the broad definition of the environment, including the effects of chemicals and other influences on health such as diet, socioeconomic status, the built environment and the microbiome.

With our expertise, in collaboration with the only USDA-recognized Children's Nutrition Research Center (CNRC), we will focus on community diet, low-income populations and obesity. Given the importance of social determinants of health, our unique catchment area and because obesity is implicated in the carcinogenesis of multiple tumor types, we will develop joint programs and goals with the CNRC.

Pilot projects on environment and diet in cancer etiology, prevention and response to therapy.

We propose the following goals:

- Develop geographic information systems and build new shared resources.
- Focus research on veterans' environmental health, including deployment-related exposures and other exposures that increase cancer risk.
- Initiate joint pilot project awards between the GC-CPEH Pilot Project Program and the DLDCCC related to cancer and environment.
- Promote integration of CRTEC and the TP-EHS T32 to advance the training goals of both activities and enhance awareness of the important roles of CRTEC trainees and mentors in the environment in cancer.
- Integrate community engagement activities of the DLDCCC and the GC-CPEH, P50 and P42 programs.
- Develop joint programs with the CNRC through seed grants on diet, childhood obesity and cancer outcomes.
- Develop programmatic grants to explore the interface of diet and the microbiome in outcomes of cancer, including a focus on the outcomes for stem cell transplant patients.

STRATEGIC PILLAR CROSS-CUTTING BASIC & CLINICAL PROGRAMS OF EXCELLENCE



We have identified the following areas for support:

 Cancer Neuroscience: Recent discoveries have clarified direct pathways between neurons and cancer cells, as well as mvriad neural effects on tumor microenvironment. Nervous system cancer interactions can regulate oncogenesis, growth, invasion and metastatic spread, treatment resistance, stimulation of tumor-promoting inflammation and impairment of anti-cancer immunity. Progress in cancer neuroscience may create an important new pillar of cancer therapy. Baylor College of Medicine and the DLDCCC recognized this developing area with the designation of the Center for Cancer Neuroscience, directed by Benjamin Deneen, and located in the Cancer Cell and Gene Therapy (CCGT) program. Texas Children's Hospital, alongside our pediatric cancer program, have acquired

significant recruits in this area, for instance, the arrival of Dr. Michael Taylor.

- Clonal Hemopoiesis: Another area of strength is clonal hematopoiesis where Margaret Goodell, associate director for Basic Science and co-leader of the CCGT Program, leads a project focused on biology implications for hemopoietic cells. Other researchers at the university are exploring the relationship of colonial hematopoiesis with solid tumors and its implications for immune effector cell therapies.
- **Mesothelioma**: The Department of Defense CDC is a national referral center for mesothelioma, which opens the opportunities to expand both clinical and basic translational research targeted at this malignancy.

We propose the following goals:

• Promote interactions between researchers throughout the

Develop programs of excellence that yield new themes or programmatic areas of focus while developing technological approaches to interface biology systems and cancer therapeutics in collaboration with our partners.

DLDCCC with the goal of developing these areas into programs or program themes.

- Develop pilot programs targeting these areas.
- Develop clinical programs in clonal hematopoiesis, mesothelioma and adult survivorship in diverse populations across our various clinical pavilions.
- Support the development of programmatic grants.
- Recruit and coordinate with associate directors across programmatic areas.

STRATEGIC PILLAR **TRANSLATION OF DLDCCC BASIC CONCEPTS**

Translation of the outstanding DLDCCC Basic Science Program remains a high priority. While these areas of excellence in breast cancer and cell therapy are supported by SPOREs grants, there is still opportunity to enhance translation.

Our focus is to provide access to cutting edge cell therapies. Additionally, we are launching innovative MPI multi-level intervention trials targeting breast and gynecological cancers, setting new standards for survivorship care.

These trials exemplify the translation of basic scientific discoveries into comprehensive, real-world clinical interventions that seek to improve patient outcomes and demonstrate the practical application of our research.

We propose the following goals:

- Accrue seed funds for bench-to-bedside proposals.
- Enhance programmatic interactions with disease working groups by forming translational working group.
- Recruit an Associate Director for Translational Research.
- Increase interactions with the Center for Drug Discovery and THINC (Therapeutic Intervention Center) at Baylor College of Medicine. Coordination of this pillar will include associate directors for Translational and Clinical Research.



Translate research discoveries into realworld clinical interventions and provide access to cuttingedge cell therapies.

6 SYNERGISTIC PARTNERSHIPS WITH TEXAS INSTITUTIONS



STRATEGIC

PILLAR

Leverage the expertise and educational environment throughout the Texas Medical Center to enhance cancer research, education, outreach and impact. The Texas Medical Center is outstanding and diverse, offering the potential for exceptional transdisciplinary cancer research.

In addition to being a home to stellar scientists at all affiliated institutions, along with outstanding engineering, technology and chemistry strengths at the Rice University, TMC is home to HBCUs such as Texas Southern University, offering the opportunity to create robust affiliations and synergistic programs.

We propose the following goals:

- Expand collaboration with Rice University, where there is expertise in chemistry, bioengineering computation and mathematics. We have initiated a seminar series and an annual symposium with joint faculty and trainee participation. We aim to promote close interaction through equal partnerships with equal support and investment in joint research proposals. Our goal is to achieve center-wide grants in support of this synergy over the next five years.
- Liaise with the Clinical and Translational Science Award program to enhance our focus on diversity and equity. In particular, we will primarily work with The University of Houston and Texas Southern University.
- Develop a Community Outreach and Engagement and TSU joint research proposal through P20 and P50 applications.
- Collaborate with the University of Texas MD Anderson Comprehensive Cancer Center to build on existing key translational partnerships in transplant, leukemia and breast cancer.
- Enhance interactions in other disease areas.

Tactics include but are not limited to: developing a seminar series, offering seed grants from both institutions for pilot projects, promoting collaborative grants, sharing outreach strategies and leveraging shared resources.

The DLDCCC director overseeing shared resources will coordinate activities in this pillar.





Enhancing Cancer Care

FOR ALL OF HOUSTON AND BEYOND

2024-2029 STRATEGIC PLAN



DAN L DUNCAN COMPREHENSIVE CANCER CENTER

www.bcm.edu/duncancancercenter