



CANCER PREVENTION & RESEARCH
INSTITUTE OF TEXAS

MEMORANDUM

TO: OVERSIGHT COMMITTEE MEMBERS
FROM: WAYNE ROBERTS, CHIEF EXECUTIVE OFFICER
SUBJECT: TEXAS HEALTH & SAFETY CODE SECTION 102.260(C) REPORT ON THE MERIT AND CONTINUED PROGRESS OF CPRIT'S PROGRAMS IN FY 2022
DATE: FEBRUARY 15, 2023

Summary

Texas Health and Safety Code § 102.260(c) requires the Chief Executive Officer to report at least annually to the Oversight Committee on the progress and continued merit of each research program. I am pleased to report FY 2022 marked another year of progress for CPRIT and its Academic Research, Prevention, and Product Development Research programs. In FY 2022 CPRIT awarded 117 grants totaling \$266 million to 33 organizations throughout the state. Key metrics indicate that CPRIT is affecting Texas' national standing in both cancer research and the biomedical industry. CPRIT's investment is attracting, creating, and expanding the research capabilities of our institutions of higher education and the state's life science industry, expediting innovation, and increasing the likelihood of breakthroughs in cancer prevention and cures.

This report provides an overview illustrating the progress made in advancing CPRIT's mission to create and expedite innovation in cancer research and cancer prevention. Aligning program activities with the program priorities adopted by the Oversight Committee is a good gauge of progress and merit; this report highlights each program's implementation of the FY 2022 program priorities. CPRIT's 2022 *Annual Report*, which is available to read at <https://2022annualreport.cprit.texas.gov/>, provides more information on CPRIT program priorities and awards, including a summary of research findings reported by grantees in FY 2022 and notable grantee highlights.

Regarding progress made by individual grant projects within each of CPRIT's three programs, Texas Administrative Code § 703.21 requires all CPRIT grantees to submit progress reports at least annually. Outside experts evaluate these progress reports to ensure that the grantee has made appropriate progress and should continue work under the grant. To the extent that an expert reviewer determines that a grant project is not making progress towards the project goals and objectives, CPRIT has several options, including contract termination.

Academic Research Program

CPRIT's Academic Research Program supports innovative and meritorious projects that are discovering new information about cancer that can lead to prevention, early detection, and cures; translating new and existing discoveries into practical advances in cancer diagnosis and treatment; and increasing the prominence and stature of Texas in the fight against cancer. In FY 2022, CPRIT's Oversight Committee approved 90 Academic Research and Recruitment Awards totaling \$167.9 million. Notably in FY 2022, the Academic Research program surpassed the \$2 billion mark in academic research grants.

Academic Research Program Priorities

The Oversight Committee adopted the following FY 2022 program priorities for the Academic Research Program:

- Recruit of outstanding cancer researchers to Texas;
- Support a broad range of innovative initiated research projects;
- Invest in core facilities;
- Implementation research to accelerate adoption and deployment of evidence-based prevention and screening interventions;
- Computational biology and analytic methods;
- Childhood and adolescent cancers;
- Hepatocellular cancer; and
- Expanding access to innovative clinical trials

CPRIT Scholars continue to serve as a shining example of CPRIT's positive impact on cancer research in Texas. Through FY 2022 CPRIT has helped Texas academic institutions recruit 288 researchers to the state. A notable first, the Texas A&M Engineering Experiment Station recruited the first CPRIT Scholar from South America, Vanderlei Bagnato, Ph.D. from the University of Sao Paulo, Brazil.

One example of the "hepatocellular cancer" program priority in practice is the Collaborative Action Program for Liver Cancer (CAP), created to reverse the rising rates of liver cancer in the state. Hepatocellular cancer is the most common form of primary liver cancer, and the fastest rising cause of cancer-related deaths in the United States. Texas has the highest incidence rates of hepatocellular cancer in the nation.

An important component of CAP is the Texas Collaborative Center for Hepatocellular Cancer (TeCH) that began at Baylor College of Medicine in 2018 with a \$3 million CPRIT academic research grant (RP190641). The TeCH promotes collaborations among researchers and shares those discoveries with doctors, the community, and the public. On September 17, 2022, TeCH center director Hashem B. El-Serag, M.D., MPH, led the Third Annual TeCH Symposium. The CAP shows the impact that targeted priorities and funding can have on underfunded areas of cancer research

Prevention Program

CPRIT's Prevention Program continues to support effective, evidence-based prevention programs available to underserved populations in the state. Prevention Program grants help Texans reduce the risk of cancer, identify cancers earlier, and assist people in finding cancer treatment. Through August 31, 2022, prevention grantees have provided 8.2 million prevention services, including 3.5 million clinical services with 395,441 people receiving their first cancer screening through a CPRIT-funded project. The Oversight Committee approved 16 prevention grants totaling \$27.63 million during FY 2022. In FY 2022, the prevention program reached an impressive milestone by surpassing 8 million prevention services in all 254 counties.

Prevention Program Priorities

The Oversight Committee adopted the following FY 2022 Prevention Program priorities:

- Populations disproportionately affected by cancer incidence, mortality, or cancer risk prevalence;
- Geographic areas of the state disproportionately affected by cancer incidence, mortality, or cancer risk prevalence;
- Underserved populations; and
- Program assessment to identify best practices, use a quality improvement tool, and guide future program direction.

Programs like the GRASSROOTS HEALTH program demonstrate how CPRIT prevention funding addresses program priorities and supports projects for populations disproportionately affected by cancer. GRASSROOTS HEALTH is a partnership between The University of Texas Health Science Center at Houston, Healthcare for the Homeless Houston, and New Hope Housing to usher homeless individual through Hepatitis B virus and Hepatitis C care that includes education, testing, vaccination, and treatment. Originally started in Harris County in 2018 with the support of a \$1.2 million CPRIT prevention grant (PP180086), the program expanded its reach to four additional counties in 2022 with the support of a \$2 million CPRIT expansion grant (PP220022).

A notable first in the prevention program in FY 2022 is the first CPRIT award to the University of Houston Downtown. The prevention grant will fund a program to increase the use of HPV vaccination services among medically underserved young adults in Texas counties.

Product Development Research Program

CPRIT's Product Development Research Program funds innovative and scientifically meritorious product development projects with the potential of translating research discoveries into commercial products to benefit cancer patients. During FY 2022, the Oversight Committee approved 11 Product Development Research awards totaling \$70.87 million. Notably in 2022, CPRIT awarded a product development research award to its 50th company.

The Product Development Research program continues to be a vital component in building the life sciences infrastructure and community in Texas. Through August 31, 2022, CPRIT companies raised \$5.2 billion in additional investments after their CPRIT awards (a 10:1 funding ratio). These additional investments and activities testify to the quality of the CPRIT-funded projects and CPRIT’s review process. CPRIT-funded companies continue to help not only the life sciences ecosystem, but also the Texas economy with a \$630 million increase in business activity in CPRIT programs and employment of 1,228 Texans at CPRIT-funded companies.

Product Development Research Program Priorities

The Oversight Committee adopted the following 2022 Product Development Research Program Priorities:

- Funding novel projects that offer therapeutic or diagnostic benefits not currently available, i.e., disruptive technologies;
- Funding projects addressing large or challenging unmet medical needs;
- Investing in early-stage projects when private capital is least available;
- Stimulating commercialization of technologies developed at Texas institutions;
- Supporting new company formation in Texas or attracting promising companies to Texas that will recruit staff with life sciences expertise, especially experienced C-level staff to lead to seed clusters of life science expertise at various Texas locations; and
- Providing appropriate return on Texas taxpayer investment.

An example of the product development program priority “funding novel projects that offer diagnostic benefits not currently available” in practice, CPRIT awarded Perimeter Medical Imaging AI a \$7.4 million product development research grant in 2019 (DP190087). The company creates ultra-high-resolution, real-time, advanced imaging tools. Their novel technology includes the S-Series OCT (Optical Coherence Tomography) that provides cross-sectional, real-time margin visualization of excised tissue specimens in the operating room. This tool allows surgeons to see margins at the cellular level in real time as opposed to waiting days for pathology results.

Perimeter received the CPRIT grant to further the company’s study to evaluate B-Series OCT combined with groundbreaking AI technology ImgAssist. Perimeter developed ImgAssist under the ATLAS AI project to use machine learning algorithms that find areas suspicious for breast cancer in the OCT images of excised breast tissue samples.

Perimeter is currently conducting studies at eight locations, four of which are in Texas, including Baylor College of Medicine. Principal investigator Dr. Alastair Thompson explained, “Perimeter’s novel imaging technology with AI fits into the routine surgical process with no additional imposition to the patient as it examines a tissue sample that is already being extracted.”

Conclusion

CPRIT's three programs show merit and progress and should continue operations. The work conducted under the purview of CPRIT's programs is part of an iterative cycle with observations emerging from the laboratory making their way to the public and back again to the laboratory. Essential players in this cycle are basic scientists, physician scientists, clinical researchers, product development entrepreneurs, public health professionals, health care providers, patients, community organizations, early-stage companies, and research institutions across Texas.

Through CPRIT's programs the state is investing in intellectual and research support infrastructure that is attracting, creating and expanding research capabilities of Texas institutions of higher education and the Texas life science industry, expediting innovation, and increasing the likelihood of breakthroughs in cancer prevention and cures.