



CANCER PREVENTION & RESEARCH
INSTITUTE OF TEXAS

★ Texans Conquer Cancer ★

CPRIT Agency Programs
and Operations Overview

May 2024

CPRIT Overview

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Cancer's Impact on Texans

Cancer is the leading cause of death for Texans younger than 85 and kills more Texas children and adolescents than any other disease.



148,000 Texans newly diagnosed with cancer in 2024; more than 44,000 will die of the disease this year.



More than 1,800 Texas children under the age of 20 newly diagnosed with cancer in 2024; 220 will die this year.



**CANCER'S
ECONOMIC
COSTS TO
TEXANS**

- \$56.3 billion in direct medical costs of cancer and morbidity and mortality losses in 2023
- \$300.1 billion in reduced annual spending
- \$147.9 billion in output losses annually
- 1,252,870 lost jobs from cancer treatments, morbidity & mortality, and associated spillover effects

"An Economic Assessment of the Cost of Cancer in Texas and the Benefits of the Cancer Prevention and Research Institute of Texas (CPRIT) and its Programs: 2023 Update" The Perryman Group



CPRIT's Mission

In 2007, Texans voted overwhelmingly in favor of a constitutional amendment creating the Cancer Prevention and Research Institute of Texas (CPRIT).

On November 5, 2019, Texas voters approved a constitutional amendment providing an additional \$3 billion to CPRIT, for a total \$6 billion investment in cancer research and prevention efforts across Texas.

CPRIT is now the second largest public source of funding for cancer research in the nation.



Create and expedite innovation in cancer research into prevention and cures



Attract, create, and expand research capabilities



Create high-quality new jobs in Texas



Develop and implement the Texas Cancer Plan



CPRIT Grant Awards

1,982 grants - \$3.6 Billion
to cancer research and prevention projects across Texas

Academic Research
1,599 awards ▶ \$2.5 Billion

Product Development Research
80 awards ▶ \$714 Million

Prevention
303 awards ▶ \$381 Million

Combined Research Awards:
1,664 awards ▶ \$3.2 Billion

Clinical Research (32.2%)	\$1.03 B	Basic Research (11.9%)	\$384.2 M
Translational Research (23.3%)	\$748.7 M	Research Training (2.8%)	\$ 90.4 M
Recruitment (29.7%)	\$955.4 M		

40

Institutions

36

Community Organizations

67

Companies



CPRIT Review Process

Our Commitment to Texans

- Distribute public funds to cure and mitigate cancer with the highest standards of ethics, accountability, efficiency, and transparency
- Award grants using rigorous, independent, unbiased, merit-based peer review
- Only applications recommended by expert reviewers are considered by Program Integration Committee and the Oversight Committee

604 applications - \$1.1 Billion requested

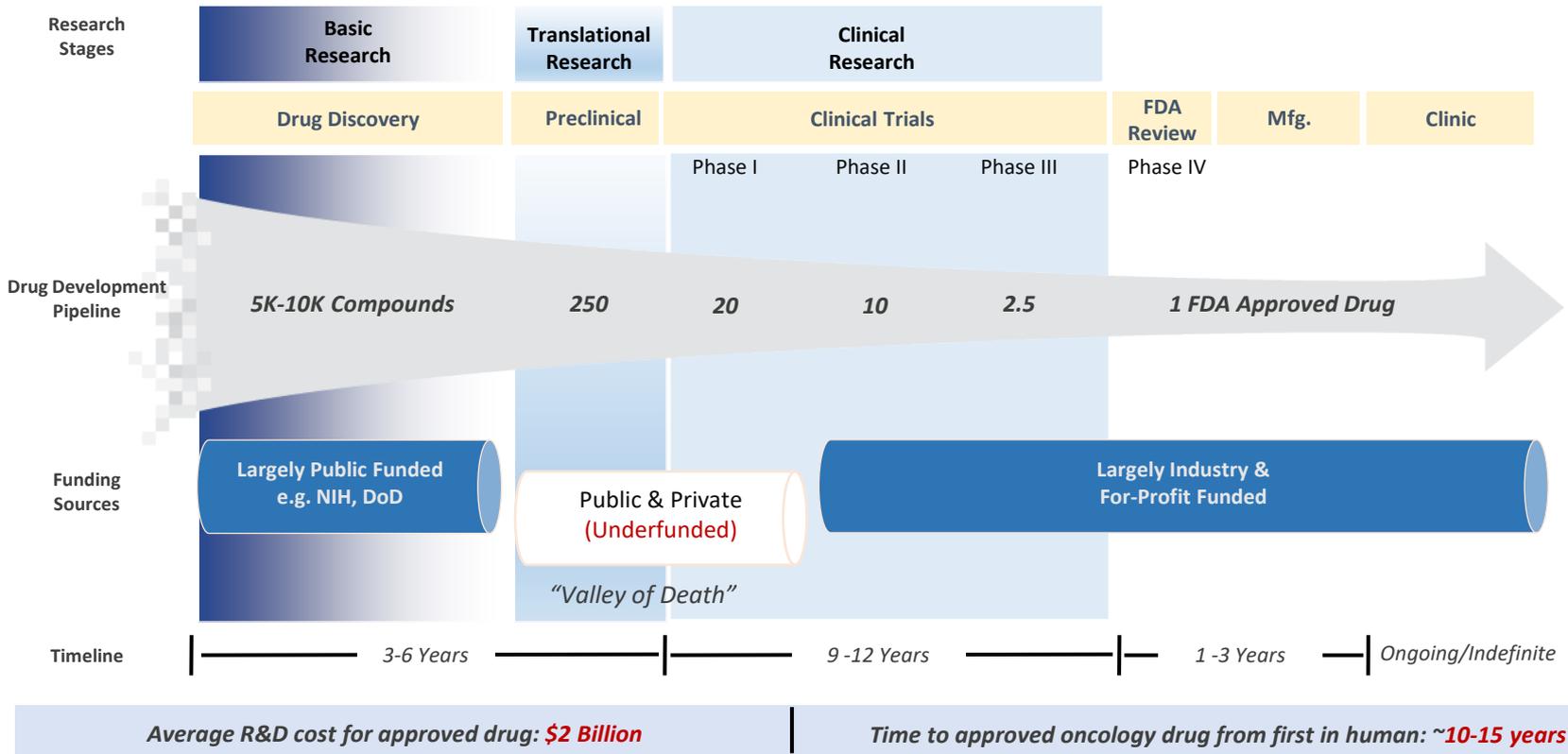
FY 2023 Review Process

- ▶ 200+ expert reviewers
- ▶ 50 review meetings
- ▶ 5000+ hours reviewing and discussing applications
- ▶ All reviewers live and work outside of Texas to minimize conflicts of interest
- ▶ Every person involved in award decisions (reviewers, Program Integration Committee members, Oversight Committee members) operates under strict conflict of interest rules and reporting requirements
- ▶ Neutral third-party observer monitors all peer review meetings, Chief Compliance Officer certifies every award slate, and CEO files an affidavit for every award attesting to process - all reports made available to the public



CPRIT's Unique Role in the Fight Against Cancer

Developing new cancer drugs and devices is a multibillion-dollar, decades-long process. CPRIT funds the continuum of cancer research, from basic research to translating those discoveries into practice. Early-stage development activities - preclinical studies, first in human trials, and creating regulatory data - are vital to this process. CPRIT accelerates early-stage development by funding Texas-based startups conducting the preliminary work to bring life-saving drugs and technologies to market when outside investment is hard to secure because of the risk of failure.



CPRIT Is Elevating Texas' Research Reputation

ARPA 

Texas Chosen for National Healthcare Initiative

In 2023, the newly formed Advanced Research Projects Agency for Health (ARPA-H) competitively selected Texas as one of three hubs for its nationwide health innovation network ARPANET-H. The ARPANET-H Customer Experience hub is headquartered in Dallas at Pegasus Park.

Like CPRIT, ARPA-H is committed to funding transformative research that meet urgent challenges facing cancer patients and their families.

ARPA-H's decision to locate the customer experience hub in Texas underscores the state's well-earned leadership reputation in healthcare research, development, and technological innovation.

In 2023 ARPA-H is authorized up to \$1.5 billion.

THOR and HAMMR

As one of its first initiatives, ARPA-H awarded a \$45 million cooperative agreement grant to a research team led by CPRIT Scholar Dr. Omid Veisheh, a bioengineer at Rice University. Rice brought Dr. Veisheh to Texas from the Massachusetts Institute of Technology in 2016 with a \$2 million CPRIT recruitment grant.



- ▶ The groundbreaking Targeted Hybrid Oncotherapeutic Regulation (THOR) platform is developing the Hybrid Advanced Molecular Manufacturing Regulator (HAMMR), a minimally invasive implant to sense and respond with specific doses of medicine to help the body better respond to cancer treatments
- ▶ The THOR and HAMMR team includes engineers, physicians and multidisciplinary specialists in synthetic biology, materials science, immunology, oncology, electrical engineering, and artificial intelligence, spanning 20 different research labs - including CPRIT grantee institutions MD Anderson and the University of Houston
- ▶ By boosting cancer therapy response rates in peritoneal and solid tumors, the project goal is to slash U.S. cancer-related deaths by more than 50%

Recruiting ARPA-H to Texas was the culmination of a two-year effort by the Coalition for Health Advancement and Research in Texas (CHART). CPRIT, a founding member of CHART, brought together a broad alliance of biotechnology ventures, hospital systems, research institutions and economic development organizations throughout the state, to make the case for Texas' culture of transformation and problem solving.





CANCER PREVENTION & RESEARCH
INSTITUTE OF TEXAS

★ Program Information ★

Academic Research

Product Development Research

Prevention

CPRIT Academic Research Program

Purpose

- Discover new information about cancer that can lead to prevention, early detection, and cures
- Translate new and existing discoveries into practical advances in cancer diagnosis and treatment
- Increase the prominence and stature of Texas in the fight against cancer

1,599 grants - \$2.5 Billion

to 40 research entities across Texas

- ▶ 73 CPRIT core facility awards providing access to cutting-edge, shared technology through specialized instrumentation, tumor banks, and technical expertise
- ▶ Eleven NCI Specialized Programs for Research Excellence awards - the most of any state
- ▶ Texas Regional Excellence in Cancer (TREC) grants prioritize development of cancer research outside major hubs of Dallas, Houston, Austin, San Antonio
- ▶ \$3.6 billion in grants and funding garnered by CPRIT grantees after CPRIT awards
- ▶ 8,045 publications reporting research findings; 597 new patents and patent applications



CPRIT Academic Research Grants Across Texas

38 Research Entities With CPRIT Academic Research Grants

Angelo State University
Baylor College of Medicine
Baylor Research Institute
Baylor University
Rice University
Scott and White Healthcare
Southern Methodist University
Statewide Clinical Trials Network of Texas (CTNet)
Texas A&M Engineering Experiment Station
Texas A&M University
Texas A&M University - Corpus Christi
Texas A&M University Health Science Center Institute of
 Biosciences and Technology
Texas A&M University System Health Science Center
Texas Agrilife Research
Texas Medical Center Foundation
Texas Southern University
Texas State University
Texas Tech University
Texas Tech University Health Sciences Center
Texas Tech University Health Sciences Center at El Paso
The Methodist Hospital Research Institute
The University of Texas at Arlington
The University of Texas at Austin
The University of Texas at Dallas
The University of Texas at El Paso
The University of Texas at San Antonio
The University of Texas Health Science Center at Houston
The University of Texas Health Science Center at San Antonio
The University of Texas Health Science Center at Tyler
The University of Texas M.D. Anderson Cancer Center
The University of Texas Medical Branch at Galveston
The University of Texas Rio Grande Valley
The University of Texas Southwestern Medical Center
The University of Texas System
University of Houston
University of Houston - Downtown
University of North Texas
University of North Texas Health Science Center at Fort Worth



CPRIT Academic Research CPRIT Scholars



CPRIT Scholar Jim Allison, Ph.D.
Nobel Laureate 2018

CPRIT catalyzes the state's cancer research efforts by strategically investing alongside Texas universities and cancer research institutes to recruit world-class scientists and their labs to Texas from across the nation and around the world.

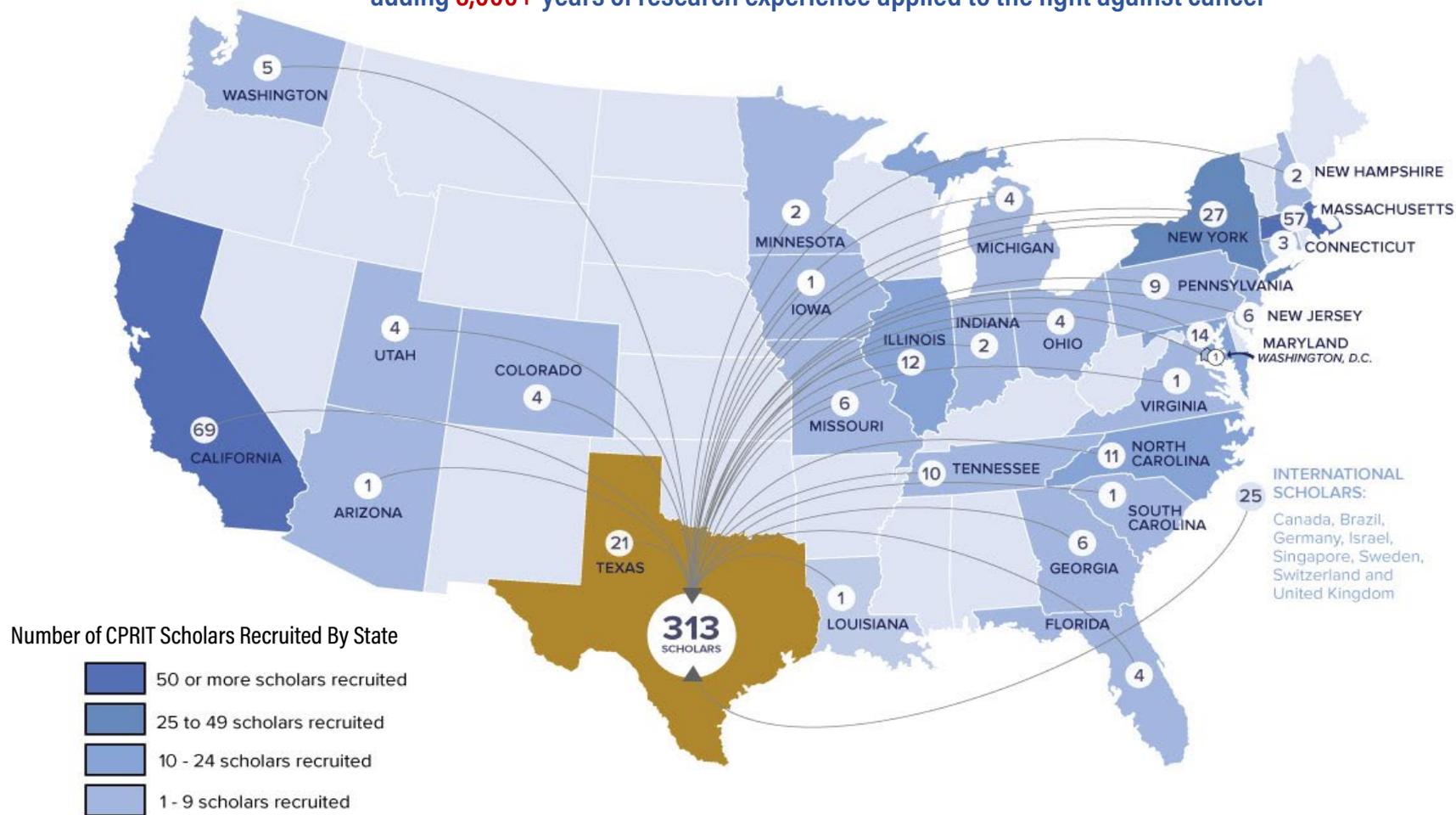
Bringing the best and brightest investigators – at all stages of their careers - to Texas greatly enhances programs of scientific excellence, bolsters Texas’ life science ecosystem, positions our state as a leader in the fight against cancer, and serves as a catalyst for further economic development.

Career Stage	# of Recruits	Total Award \$
First-Time, Tenure-Track <i>Early-career investigators, demonstrated academic excellence and innovation, exceptional potential</i>	214	\$411.8 M
Rising Stars <i>Mid-career investigators with extraordinary accomplishments, scholastic aptitude, leadership</i>	32	\$117.9 M
Established Investigators <i>Senior investigators, proven track records of research accomplishments</i>	64	\$373.8 M
Recruitment of Missing Links <i>Critically important researchers necessary to complete existing, excellent teams (discontinued FY 2013)</i>	3	\$5.9 M
TOTAL	313	\$909.5 M



CPRIT Academic Research **Attract, Recruit, & Expand**

CPRIT has enhanced Texas' life sciences ecosystem by attracting **313** scholars to the state; adding **8,000+** years of research experience applied to the fight against cancer



Fighting Childhood Cancer



CPRIT funding has established Texas as a national leader in the fight against childhood and adolescent cancers

12% of CPRIT's portfolio funds childhood cancer projects - proportionately 3x the national rate

Momentum

Targeting multiple cancer types impacting children

- ▶ **Brain cancer:** \$46+ million dedicated to childhood brain cancer research, spanning bench, translational and product development research. CPRIT-supported new treatments for neuroblastoma are available in clinical trials with promising impact on survival.
- ▶ **Leukemia:** \$340+ million for research for leukemia, the most common childhood cancer
- ▶ **Ewing's Sarcoma:** Over \$20 million for rare bone cancer with limited treatment options
- ▶ **Survivorship:** Funding long-term projects designed to prevent reoccurrence of cancer in childhood cancer survivors

Research & Prevention Goals

- ▶ **Pediatric clinical trials consortium** to increase access to curative immunotherapy, precision therapies, and novel diagnostic capabilities
- ▶ **Statewide informatic and genomic pediatric cancer resources** to enable "Big Data" strategies to understand and cure childhood cancers
- ▶ **Multi-institutional "dream teams"** for childhood brain cancers and pediatric sarcomas
- ▶ **Vaccinate** all Texans ages 9 to 26 against HPV-associated cancers



Eliminating Barriers to Clinical Trials Participation

The 86th Texas Legislature passed HB3147 to increase the number and diversity of patients in cancer clinical trials by removing the nonclinical out of pocket costs as barriers to participation.

CPRIT's Clinical Trials Participation Program Award

- ▶ **Two CPRIT Awards:** *Enhancing Access To and Diversity in Cancer Clinical Trials Through a Financial Reimbursement and Outreach Program* (\$1.5 million, RP210115, Dr. David Gerber at The University of Texas Southwestern Medical Center) and *The Dan L. Duncan Comprehensive Cancer Center Harris Health Clinical Trials Financial Support Project* (\$1.5 million, RP210143, Dr. Martha Mims at Baylor College of Medicine).
- ▶ **Grant Funds Support Patient Costs and Outreach:** \$1 million of total grant costs must be used to reimburse patients' non-clinical expenses; remaining amount funds community outreach, patient navigation, and administrative costs.
- ▶ **Reimbursement of Eligible Non-Clinical Expenses:** Includes travel costs, lodging, food, parking, tolls, childcare, internet (for telehealth visits) for patient and accompanying caregiver.
- ▶ **Based on Financial Need:** Patients at or below 700% of the federal poverty level are eligible to receive reimbursements.
- ▶ **COVID Impact:** The COVID pandemic slowed the initiation of both projects through 2023. Both grantees are currently enrolling patients.

UT Southwestern's "Enhancing Access and Diversity in Cancer Clinical Trials" Project

- ▶ Approved August 18, 2021
- ▶ **164 patients enrolled;** currently enrolling additional patients
- ▶ **\$133,000+ in total patient reimbursement**
- ▶ **Sites:** UT Southwestern Comprehensive Cancer Center, Parkland Health and Children's Health Dallas
- ▶ Children's Health Dallas **is the first pediatric facility in the nation** with a reimbursement program for non-clinical costs associated with trial participation
- ▶ UT Southwestern is working with the Lazarex Cancer Foundation to manage patient reimbursement



CPRIT Product Development Research Program

Purpose

- To improve patient care through expedited innovation and product development
- To catalyze Texas' emerging life sciences industry and the creation of high-quality new jobs in this state
- To provide a direct return, through intellectual property and revenue sharing, on the investments made by Texans

80 grants - \$714 Million

to 67 companies started, expanded, or brought to Texas

- ▶ 18 companies recruited to Texas from other states or countries
- ▶ CPRIT-funded companies have established connections to Texas academic institutions through manufacturing, clinical trials, sponsored research, and licensing
- ▶ More than \$6.6 billion follow-on capital raised by CPRIT companies after receiving award
- ▶ CPRIT companies have conducted 52 clinical trials involving 1,527 patients
- ▶ Five drugs, diagnostics, devices, and services on the market
- ▶ 1,482 employed at CPRIT funded companies



CPRIT Product Development Companies

DFW Metroplex (10)



Austin (11)



Lubbock (1)



San Antonio (3)



Houston (40)



College Station (2)



CPRIT Prevention Program

Purpose

- Prevent or reduce the risk of cancer, detect it early, mitigate cancer effects through delivery of evidence-based interventions
- Fund programs and services aimed to help those in most need
- Build capacity to deliver programs by promoting innovations and best practices across Texas

303 grants - \$381 Million

To 58 institutions and community organizations

- ▶ 43,000+ cancers and cancer precursors detected
- ▶ More than 400,000 Texans received their first cancer screenings through CPRIT-funded projects
- ▶ At least one CPRIT prevention project is available in every Texas county
- ▶ Evidence-based screenings available for breast, colon, lung, cervical cancers
- ▶ \$27.82 in treatment costs saved with every \$1 spent on cancer prevention



CPRIT Prevention Projects Across Texas

Counties Of Residence Of People Served By CPRIT Prevention

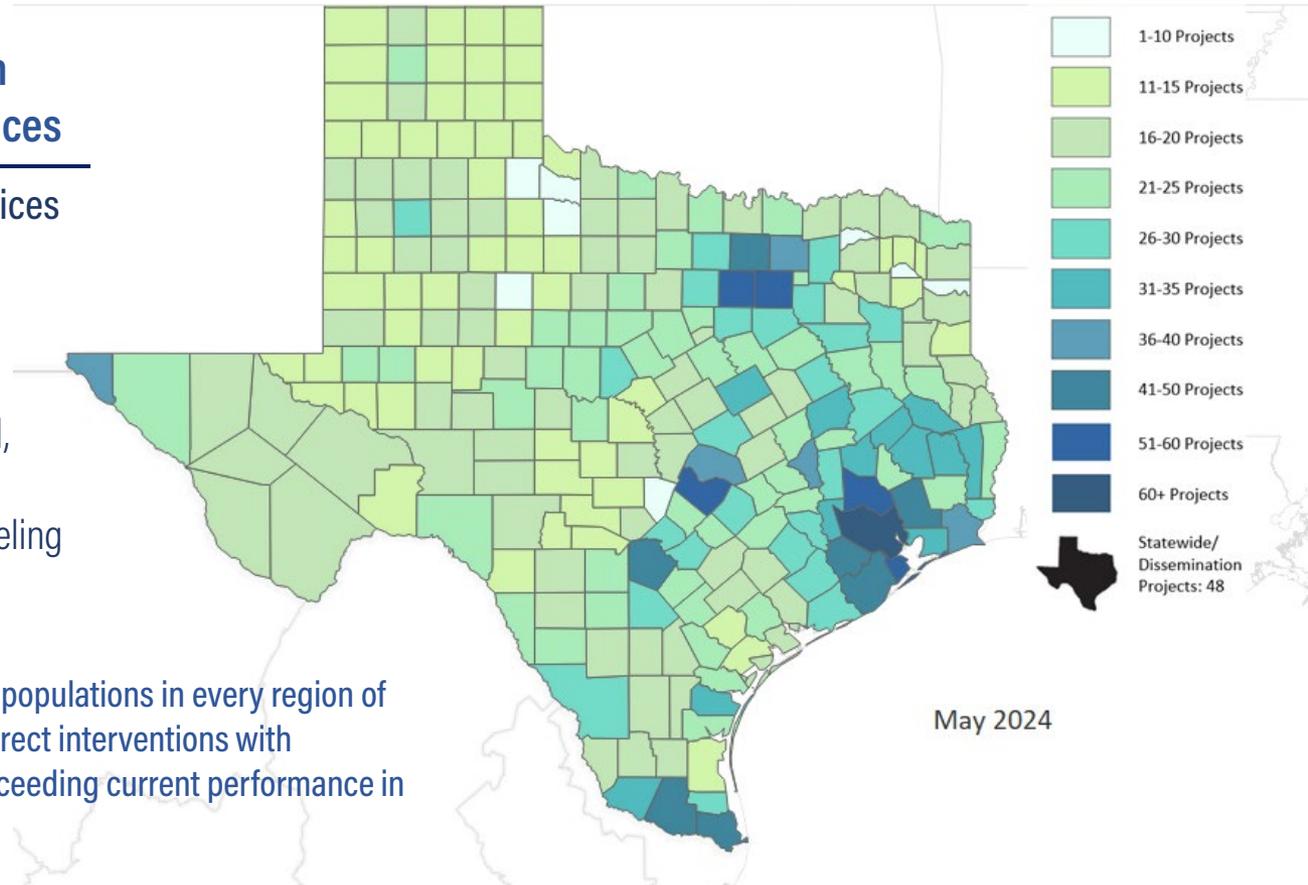
Delivered Over 9.7 Million Education and Clinical Services

5.9 M Education & Training Services

3.8 M Clinical Services

- Vaccinations
- Tobacco Cessation
- Screening: breast, cervical, colorectal, and lung
- Genetic testing and counseling
- Survivor care

These programs reach underserved populations in every region of the state through evidence-based direct interventions with quantifiable public health impact exceeding current performance in the service area.



CPRIT Prevention Research

\$124 million in 80+ projects

CPRIT also strategically funds research projects in areas of early detection and prevention. These prevention projects can include childhood cancer survivorship, and intractable cancers with a major emphasis on cancers of significance to Texans.

Prevention Research Project Examples Include:

- ▶ **Texas CONNECT for Cancer Prevention Study (CPRIT Grant: RP23042)**
- ▶ **Collaborative Action Program (CAP) to reduce liver cancer mortality in Texas (CPRIT Grant: RP190641)**
- ▶ **Developing a blood test to predict an individual's risk of dying from lung cancer (CPRIT Grant: RP180505)**
- ▶ **Projects CLEAR and ADHERE for smoking cessation and lung cancer screening (CPRIT Grant: RP190210 and RP230312)**
- ▶ **Imaging approach using nonlinear optical microscopy to detect head and neck cancers (CPRIT Grant: RP150449)**
- ▶ **Technology for tissue testing using an automated digital pathology lab imaging system (CPRIT Grant: DP19018)**





CANCER PREVENTION & RESEARCH
INSTITUTE OF TEXAS

★ Selected Grantee Highlights ★

Academic Research CPRIT Scholars

Reuben Harris, Ph.D.

The University of Texas Health Science
Center at San Antonio

Grant ID:
RR220053

Award Date:
February 16, 2022

Amount:
\$6,000,000

Mechanism:
Recruitment of Established
Investigators

Recruited From:
University of Minnesota

At UT Health San Antonio, world-renowned researcher Dr. Reuben Harris chairs the Department of Biochemistry and Structural Biology. In addition to the many awards and recognition in his distinguished career, he is a Howard Hughes Medical Institute Investigator, a position that transferred with his recruitment, making him the first HHMI Investigator at UT Health San Antonio.

Impact

Dr. Harris is a pioneer in his field with his discovery of a new role for a group of enzymes known as APOBEC that play a pivotal role in modifying RNA. These enzymes are responsible for many of the DNA changes seen in cancers and are important in both the beginning stages and growth of tumors.

He leads an internationally recognized research group studying why DNA alterations occur in cancer and how tumors change over time. His team is working to translate these discoveries into new treatments for cancer. Dr. Harris is now focusing on identifying combinations where the lack of more than one protein causes cancer cells to die. This could lead to the development of new treatments for APOBEC-positive tumors.



Academic Research TREC Program

Primary Investigator

Marc B Cox, Ph.D., M.S.P.H.

The University of Texas at El Paso

Grant ID:

RP210153

Award Date:

August 18, 2021

Amount:

\$5,881,734

Title:

Partnership for Hispanic Cancer Disparities Research

Mechanism:

Texas Regional Excellence in Cancer (TREC) Award

With its Center for the Study of Hispanic Cancer Disparities, The University of Texas at El Paso is a hub for biomedical research addressing health issues affecting the Hispanic community. The CPRIT Texas Regional Excellence in Cancer (TREC) Award supports excellence in multidisciplinary, culturally relevant research, and cancer prevention to increase health equity throughout the region. This program has created a core group of well-trained, independently funded scientists equipped to lead interdisciplinary team-based grant projects, tackle some of the border region's most pressing health issues, and mentor future generations of researchers studying cancer disparities.



Led by UTEP's Dr. Marc Cox, the program trains early-stage investigators, hires additional researchers with a strong background in cancer disparities research, and provides professional development opportunities to enhance researcher's success and impact in Hispanic cancer disparities. Established investigators at The University of Texas MD Anderson Cancer Center mentor each UTEP researcher.



Significance

No one is safe from cancer, regardless of their gender, ethnicity or income; however, the burden is greater for certain populations based on their socioeconomic status, racial/ethnic group, and cancer type. In El Paso, Hispanics account for more than 85% of the population. Although Hispanics have a lower risk for some cancers, they have the highest rates for many cancers. The Center for the Study of Hispanic Cancer Disparities at The University of Texas at El Paso . Provides integrated research support across multiple disciplines to study the underlying mechanisms that link socioeconomic and biological factors to the development of cancer disparities among Hispanics and translate basic research discoveries into novel therapies.



Academic Research Core Facilities

Primary Investigator

Ulrich Bickel, M.D.

Texas Tech University Health Science
Center at Amarillo

Grant ID:

RP200572

Award Date:

August 19, 2020

Amount:

\$2,831,213

Title:

From Whole Animal Imaging to
Super-Resolution Microscopy: An
Imaging Core for TTUHSC Amarillo

Mechanism:

Core Facilities Support Award

With CPRIT's Core Facility Award to Texas Tech University Health Science Center at Amarillo, led by Dr. Ulrich Bickel, West Texas researchers are expanding their insight into the science of medicine, and driving forward advancements in cancer treatments, prevention, and cures at

Through the CPRIT grant, the Imaging Core Facility acquired three highly specialized instruments: a confocal microscope system (optical imaging of living cells at a resolution previously only achievable by electron microscopy), an automated imager (enables long term observation of living cells under conditions causing minimal levels of phototoxicity) and the IR VIVO (infrared multispectral imager). The IR VIVO is used for small animal studies in partnership with TTU's School of Veterinary Medicine and incorporates the most recent developments in shortwave infrared imaging with an ultra-low-noise InGaAs camera, novel homogeneous illumination, and powerful analytical software to provide an unprecedented combination of fast, high resolution and deep imaging.

Significance

A state-of-the-art imaging facility is an indispensable component of biomedical research. The Imaging Core Facility lab instruments funded through the CPRIT grant allow greater optical imaging of living cells and greatly enhance the quality of obtainable data in cancer research projects.



TEXAS TECH UNIVERSITY
HEALTH SCIENCES CENTER™

at Amarillo



Prevention: Cervical Cancer Screening

Program Director
Kathleen Schmeler, MD

University of Texas MD Anderson Cancer Center

Grant ID:
PP190014

Award Date:
February 21, 2019

Amount:
\$2,128,529

Title:
Expansion of cervical cancer prevention services to medically underserved populations through patient outreach, navigation & provider training/telementoring

Mechanism:
Evidence-Based Prevention Programs and Services

In the US, cervical cancer incidence and mortality rates have decreased by 70% due to implementation of screening programs based on Pap and human papillomavirus (HPV) testing. However, women living in medically-underserved areas still experience significant health disparities including a higher burden of cervical cancer. Women living along the Texas-Mexico border and Northeast Texas have some of the highest incidence and mortality rates in Texas. Lack of trained personnel means women in these areas are less likely to receive cervical cancer screening and necessary preventive services.

This project expands another CPRIT-funded project already operating in three sites in the Rio Grande Valley (RGV) to reach eight additional medically-underserved areas in the RGV, Laredo, Northeast Texas, Bastrop and Brazoria counties. The project uses a comprehensive approach to educate the public about cervical cancer screening and HPV vaccination through community outreach and clinic inreach, coupled with patient navigation. Using professional education and training of local providers, the project increased local capacity to deliver evidence-based cervical cancer prevention services to perform colposcopy and LEEP for patients with abnormal screening results. The project also trained patient navigators to perform community outreach and in-reach education and navigate patients and address barriers for care.

Results

- Educated 87,053 people through in-reach activities and 71,612 at outreach events for a total of 158,665 people educated.
- Navigated/scheduled 3,532 people through in-reach activities and 9,617 through outreach events for a total of 13,149.
- Screened 47,347 women. 1,321 women were diagnosed with CIN 1; 597 with CIN 2/3; 106 with AIS, and 35 with invasive cervical cancer.
- Our collaborating providers performed 2,353 colposcopies and 209 LEEPs.
- We held seven colposcopy training courses with 364 participants (some attended more than one course).
- We held 81 Project ECHO sessions with a total attendance of 3,384 participants. There was an average of 46 participants per session and a total of 147 individual cases were presented.

Impact

- ✓ Continued operations of this project during the COVID-19 pandemic through transition to virtual formats with an increase in partner participation at virtual mentoring sessions during the pandemic and this increase was sustained until the end of this grant.
- ✓ Trained navigators to increase their knowledge in reaching more women in the community to increase screening numbers.
- ✓ Expanded and transitioned monthly navigation education sessions to ECHO sessions and launched a Patient & Navigation Education (PEN) ECHO for navigators across the state of Texas.
- ✓ Published a number of manuscripts about the project and the importance of multicomponent interventions to address patient and system related barriers to cervical cancer screening and follow up.

THE UNIVERSITY OF TEXAS
MD Anderson
Cancer Center

Making Cancer History®



Prevention: Lung Cancer Screening

Baylor
College of
Medicine

Program Director
Roger Zoorob, MD, MPH, FAAFP
Baylor College of Medicine

Grant ID:
PP180016

Award Date:
August 21, 2018

Amount:
\$1,472,918

Title:
Equitable Access to Lung Cancer
Screening and Smoking Cessation
Treatment: A Comprehensive Primary
Care and Community Health Approach

Mechanism:
Evidence-Based Prevention Programs
and Services

There is critical need for evidence-based prevention initiatives for lung cancer among predominantly underserved populations within Harris County. Lung cancer is the top cause of US cancer mortality, accounting for 1 in 4 cancer deaths, and in 2015, Harris County had more lung cancer-related deaths at ages over 35 years than any other county in Texas. Because symptoms of these lung cancer cases are mistaken for other problems or don't appear until the disease is advanced and perhaps incurable, diagnosis is often delayed with a resultant decrease in survival longevity.

The project developed and implemented a comprehensive primary care and community health program for efficient and equitable delivery of lung cancer screening and smoking cessation treatment for high-risk underserved Harris County residents. Our multi-level strategy included a critical mass of 246 providers educated and trained in lung cancer screening and smoking cessation training, a detailed lung cancer screening program implementation guide with feedback from administrators and providers of multiple disciplines, and in 15 community health centers, operationalization and coordination of services through process flow maps, and clinic-specific plans for integration. The program also provided integrative navigation, pharmacotherapy, and behavioral therapy services.

Results

- 14,502 patient charts manually reviewed and updated through navigation services to determine eligibility for lung cancer screening and/or TC services
- 223 primary care providers training on lung cancer identification, screening, and treatment of high-risk patients for lung cancer
- 359 completed low dose CT screening exams
- Over 90% of the participants have never been screened for lung cancer
- Three participants were diagnosed with adenocarcinoma
- 246 primary care providers trained on smoking cessation practices, local services, and referral protocols
- Quit rate of 28.2% with 78.6% of the remaining participants showed a reduction in tobacco use

Impact

The program functioned as a pilot for the system that approved the lung cancer screening as a service on the schedule of benefits. The program's success served as a model for expansion into rural locations for the expansion renewal project PP210044.

"I never would've thought in a million years, that I would quit. I'm thankful for the help...and the encouragement...our [counseling] talks helped me a lot." "I started smoking at 12. I've tried to quit before, many times---believe me. I was scared because a couple friends died of it [lung cancer]. After this program, I decided that enough was enough. I set a quit date and agreed to the help." - Program participant



Prevention: Evidence-Based Programs and Services

Primary Investigator
Jason McKnight, M.D.

Texas A&M Health Science Center

Grant ID:
PP180037

Award Date:
February 21, 2018

Amount:
\$1,499,202

Title:
Advancing an Established Colorectal
Cancer Prevention Program for Rural
and Underserved Texans

Mechanism:
Evidence-Based Prevention Programs
and Services

Colorectal cancer (CRC) is a significant public health problem in Texas, especially in areas with rural and uninsured populations. Although CRC the second leading cause of cancer-related death in the state, Texas ranks near the bottom (47th) among states in CRC screening; screening rates are particularly low among the uninsured.

More people are diagnosed and die from CRC in rural areas compared to urban areas. CRC incidence and mortality also reflect racial disparities. In Texas, Hispanics are less likely to have CRC screening compared to non-Hispanics. Black men are more likely to be diagnosed and die from CRC than White men.

The project, under the direction of Dr. McKnight, provides CRC prevention education, screening services, and patient navigation across the continuum of care, to residents of 21 Texas counties, including 15 rural counties.

Results

- **Colorectal Cancer Screenings** - Provided 800 colonoscopies and disseminated nearly 1,300 fecal immunochemical tests (FIT) across 21 counties, including the Greater Brazos Valley and several counties inland of the Coastal Bend.
- **People Educated/Navigated** - 7,300+ people served directly (face-to-face) with education and/or navigation.
- **People Reached** - More than 57,700 people reached indirectly with colorectal cancer prevention education.
- **Training** - Sixty-one family medicine resident physicians received hands-on clinical colonoscopy experience.

Impact

- Increased access to colorectal cancer screening through use of a culturally appropriate community health worker model.
- Improved availability of affordable screening for rural and medically underserved populations through a family medicine residency training program.
- CPRIT awarded Texas A&M Health Science Center and Dr. McKnight a \$2.5 million grant in 2022 (PP220013) to expand this successful program to add more East Texas counties, increase CRC screening, assess for liver cancer risk factors and provide Hepatitis-C testing.



TEXAS C-STEP
Cancer Screening, Training, Education & Prevention

TEXAS A&M UNIVERSITY
HEALTH



Prevention: Evidence-Based Programs and Services

Program Director
Roberto Villarreal, M.D., MPH
University Health System

Grant ID:
PP170042

Award Date:
February 15, 2017

Amount:
\$1,238,838

Title:
University Health System Hepatitis Viral
Infection and Systematic Treatment
Program (HepVISTA)

Mechanism:
Evidence-Based Prevention Programs
and Services

South Texas has the highest incidence of Hepatocellular Carcinoma (HCC) in the U.S., about 5% higher than the rest of the country. The Hepatitis C virus (HCV) is the major risk for HCC. Although most HCV positive patients are baby boomers (born 1945-1965), this age group has a low HCV screening rate.

The Hepatitis Viral Infection and Systematic Treatment Alliance (HepVISTA) Program, implemented at the University Health primary care clinics, prevents HCC in adults at risk through Hepatitis B virus (HBV) and HCV screening; outreach/awareness on the importance of HCV testing; comprehensive patient and provider education; vaccination uptake for HBV; and navigation to treatment services.

Results

- Reached 231,000 individuals to increase HCV awareness.
- Educated 714 clinical providers/staff on HCV testing and 1,311 patients educated on HCV education.
- HCV screening rate increased from 15% to 19% from program year 1 to year 4 (2017-2020).
- Screened 43,596 patients for HCV Antibody.
- 90% primary care providers reported a more streamlined process from screening to treatment due to the new functionality of the Electronic Health Record.
- 839 patients were linked to treatment services; patients rated their satisfaction with navigation services 4.9 out of 5.
- Patient knowledge on HCV significantly increased and patients reported a greater ability to control condition largely due to navigation efforts.
- Administered 1,273 HBV vaccines.



Impact

- ✓ The HepVISTA program increases the overall life expectancy of the population cohort (baby boomers) by ~ 0.36 years
- ✓ System Change - sustainable routine HCV/HBV reflex testing at 11 primary care clinics across Bexar County
- ✓ Patient Navigators are instrumental to patient retention in care by serving as a continuous point of contact within a health system



Product Development Research: R&D at CPRIT-Funded Companies

Program Director

Kirk Dorius

Atom Mines

Grant ID:
DP220055

Award Date:
August 17, 2022

Amount:
\$2,500,000

Title:
Commercial-Scale Enrichment of Stable Ytterbium-176 for Production of No-carrier-added Lutetium-177 for Use in Prostate Cancer Therapy

Mechanism:
Texas Company Product Development Awards

Atom Mines uses Magnetically Activated and Guided Isotope Separation ("MAGIS") technology to produce the stable isotope Ytterbium-176 (^{176}Yb), which is needed to make the radio-isotope Lutetium-177 (^{177}Lu).

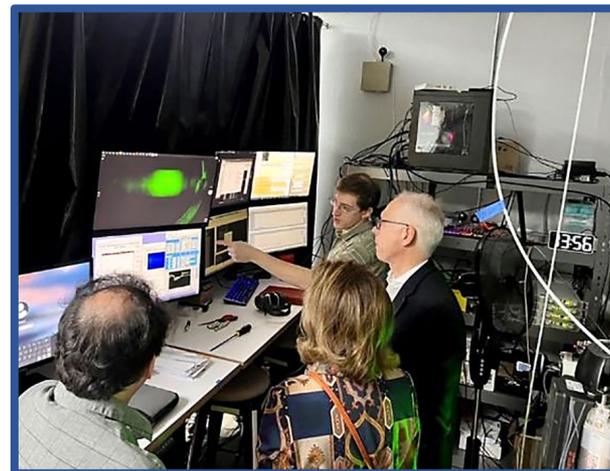
^{177}Lu is an effective beta-therapy agent approved for certain neuroendocrine cancers. It targets small tumors and dispersed, inoperable metastatic cancer using precise delivery molecules. Researchers use ^{177}Lu in various clinical trials and FDA approved drugs *Lutathera* and *Pluvicto* to treat prostate cancer.

^{176}Yb is currently only available in small quantities from Russia. The supply is uncertain due to geopolitics and competition for limited production capacity. MAGIS offers a scalable, reliable, domestic source of ^{176}Yb for ^{177}Lu production to make ^{177}Lu -based therapies readily available in Texas and to the global medical community.

Atom Mines is deploying CPRIT funds to scale from their single small production machine to the multiple larger machines needed to meet the demand from their industry partner, then regional and global demand.

Significance

Domestic access to these isotopes will put cancer treatment and medical research institutes in Texas at the forefront for new clinical trials, therapies and the development of a range of related products.



Atom Mines scientists demonstrate the data and fluorescence imaging that shows optical pumping of the ^{176}Yb atoms.



Location: Austin
Disease: Certain Neuroendocrine Cancers



Product Development Research: R&D at CPRIT-Funded Companies

Program Director
Kartik Krishnan, M.D., Ph.D.

OncoNano Medicine

Grant ID:

DP140072, DP190066,
DP200081

Most Recent Award Date:
August 19, 2020

Amount:
\$9,965,273

Title:

Image-guided Surgical Detection of
Metastatic Disease to the Peritoneum,
Lymph Nodes and Pleural Surfaces

Mechanism:

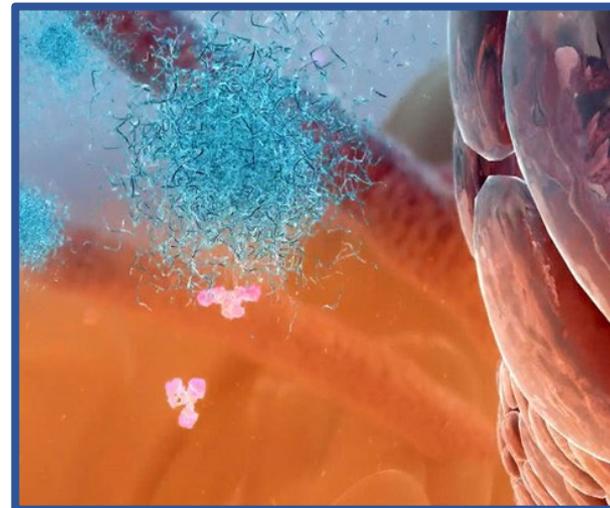
Texas Company Product
Development Awards

OncoNano Medicine is a clinical stage biopharmaceutical company based in Dallas specializing in innovative prevention and treatment of cancer. OncoNano's proprietary product candidates include solid tumor therapeutics, agents for real-time image-guided surgery, and T cell activating immunotherapies. CPRIT has supported the development of OncoNano's product candidates, ONM-501 and Pegsitacianine intraoperative imaging agent, with three Product Development Research grants (DP200081, DP140072 & DP190066) totaling \$31.4 million.

OncoNano's OMNI™ platform is composed of proprietary polymers tailored to activate Stimulator of Interferon Genes (STING), part of the body's host defense system against viruses. STING activates both the T cell and the innate immune response against solid tumors.

Significance

Phase 1 and on-going Phase 2 trials have shown that Pegsitacianine detects many solid cancers and provides evidence of tumor-positive margins or hidden disease detection that was missed by standard-of-care detection methods.



OncoNano's ultra pH-sensitive micelles dissociate in the acidic tumor microenvironment to target delivery of therapeutic and diagnostic payloads.

onconano
medicine

Location: Dallas

Disease: All Cancer Types



Product Development Research: R&D at CPRIT-Funded Companies

Program Director
Qi Melissa Yang, Ph.D.

Invectys USA, Inc.

Grant ID:
DP200034

Award Date:
May 20, 2020

Amount:
\$14,196,990

Title:

CARGo: a CAR-T cell program targeting HLA-G - a novel immune checkpoint and tumor specific antigen for advanced clear cell renal and ovarian carcinomas

Mechanism:
Company Relocation

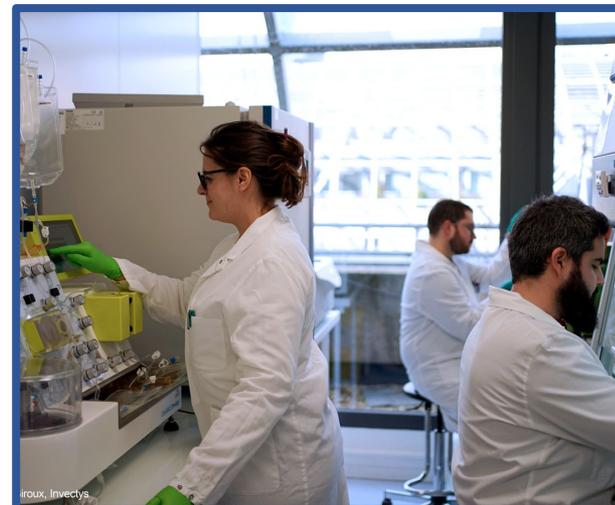
Biopharmaceutical company Invectys USA, Inc. is a developing innovative anti-cancer products in immunotherapy based on leading technology from the world-renowned Pasteur Institute in Paris. Their U.S. location is advancing the company's novel chimeric antigen receptor (CAR) T platform and conducting early-stage clinical studies.

Invectys' research focuses on the HLA-G molecule, a powerful modulator of the human immune system. During pregnancy, HLA-G protects the developing fetus from the mother's immune system. However, in cancer, cells that express HLA-G protect the tumor from immune system attacks by suppressing the patient's own immune response to the disease.

Invectys is developing technology to target and remove tumor cells that express HLA-G, reducing these immunosuppressive effects and thereby reactivating the patient's immune system. Mice treated with anti-HLA-G CAR-T cells have shown a near-total absence of tumor growth.

Significance

Invectys' approach to reprogram immune cells to become killer cells for any tumor cell that is HLA-G+ will increase responsiveness to immunotherapy in many cancer patients. If successful, this will address a large unmet need in cancer therapy. Establishing their U.S. headquarters in Texas brings an experienced and innovative company to Texas that will create jobs and provides CPRIT with a high potential return on its investment.



Invectys preclinical development team (Marie Escande, Benoit Giroux, Martin Lecomte) performing a CAR-T cell production process for IVS-3001 (Photo credit: Benoit Giroux, Invectys)



U.S. location: Houston
Disease: Kidney and Renal Pelvis, Ovary





CANCER PREVENTION & RESEARCH
INSTITUTE OF TEXAS

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