CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
RP170002

Project Title:
The University of Texas MD Anderson Science Park Next-Generation Sequencing Facility

Award Mechanism:
Core Facilities Support Awards - Competitive Renewal

Principal Investigator:
Shen, Jianjun

Entity:
The University of Texas M.D. Anderson Cancer Center

Lay Summary:

Cancer researchers at the University of Texas MD Anderson Cancer Center (MD Anderson) Science Park, The University of Texas at Austin, and Texas State University in San Marcos have collaborated on cutting-edge cancer research projects for over 18 years, facilitated in part by their shared access to the Molecular Biology Facility Core (MBFC) at MD Anderson Science Park. These long-standing partnerships have been further strengthened over the last four years by the addition of a next-generation sequencing (NGS) facility to the MBFC. NGS allows millions of small pieces of DNA to be read (sequenced) simultaneously, which saves time and creates more data than with traditional sequencing methods. Our CPRIT-funded NGS Facility has benefited 37 Central Texas cancer researchers in their quest to define the molecular causes of cancer in order to develop better means of cancer diagnosis, prevention and therapy. We seek continued CPRIT support to further the development and operation of this regional NGS Facility in order to meet the demands of Central Texas cancer researchers. The overall goals of this effort are to comprehensively understand and target the unique properties of cancer stem cells; understand how obesity increases cancer risk; understand how cancer cells can change the way they read their own DNA sequence; and understand changes in normal cellular responses to DNA damage during tumor formation. These studies are expected to directly impact our knowledge of glioblastoma, leukemia, melanoma, and breast, bladder, prostate and pancreatic cancers. Continued CPRIT funding, will allow us to: 1) update our heavily utilized Central Texas NGS Facility with a new, powerful sequencing instrument; 2) provide excellent management of the core and outstanding technical expertise to our users; and 3) garner continued institutional support. Together, continued funding will enable high-impact research projects that will lead to cancer research breakthroughs.