



CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
RP170628

Project Title:
The University of Texas M.D. Anderson Cancer Center Science Park Flow Cytometry and Cell Imaging Core

Award Mechanism:
Core Facility Support Awards

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

Lay Summary:

To understand and treat diverse cancers, researchers strive to identify the molecular events that enable cancer cells to grow uncontrollably and survive anticancer therapies. Cutting-edge research tools are essential to define crucial differences between normal and cancer cells and to develop future cancer treatments. Two tools fundamental to biomedical research are flow cytometry, a laser-based method to characterize and isolate subsets of normal and tumor cells from mixed populations, and advanced microscopy, an optical method to visualize individual cells and their subcellular components. Providing access to cutting-edge flow cytometry and state-of-the-art microscopy will fuel the progress of central Texas cancer researchers identifying differences between normal and cancer cells that can be targeted for therapeutic intervention. Therefore, we propose to create an integrated Flow Cytometry and Cell Imaging Core (FCCIC) facility at the University of Texas MD Anderson Cancer Center, Science Park in Smithville. Central Texas researchers from MD Anderson Science Park, the University of Texas at Austin, Texas State University and the UT Health Science Center, San Antonio have affirmed that the FCCIC would greatly enhance their research capabilities and expedite their progress. The FCCIC will include flow cytometers to characterize and rapidly isolate subsets of tumor and normal cells, a super resolution modification to our confocal microscope to visualize subcellular structures, single molecules and dynamic processes within living cells, and a multiphoton microscope to visualize cells and cell networks deep in living tissues to analyze cancer and normal cell behaviors in their native environments. The FCCIC will provide cutting-edge flow cytometry and microscopic imaging instruments, well-trained support staff, strong management and institutional support to accelerate progress on high impact cancer research projects led by central Texas investigators.