



## CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:  
RP170638

Project Title:  
Cyclotron and Radiochemistry Core Facility for Pediatric Oncology

Award Mechanism:  
Core Facility Support Awards

Principal Investigator:  
Sun, Xiankai

Entity:  
The University of Texas Southwestern Medical Center

### Lay Summary:

Given its capability of absolute imaging quantification and superior sensitivity, Positron Emission Tomography (PET) has been recognized as the main driving force of molecular imaging in the understanding of disease initiation mechanisms and following progression and remission after therapeutic interventions. However, PET imaging is underutilized in patients with childhood and adolescent cancers. Because the information obtained by PET imaging noninvasively and quantitatively can be leveraged to develop novel diagnostics and therapeutics or change clinical decisions on current therapies to benefit pediatric patient care and treatment outcomes, we propose a Cyclotron and Radiochemistry Core Facility for Pediatric Oncology (CRCFPO) to bridge the gap between PET imaging and Pediatric Oncology communities in North Texas. The setup of CRCFPO will be accomplished by augmenting the existing Cyclotron and Radiochemistry Program at UT Southwestern initiated by a CPRIT shared instrumentation grant. The goal is to increase the appropriate utilization of PET in Pediatric Oncology by providing both the physical and intellectual infrastructure necessary to serve pediatric cancer patients. Centered on the existing cyclotron operations, we will expand the radiochemistry, regulatory filing capabilities, and clinical pediatric imaging support through 1) developing newly emerged PET imaging probes with reported relevance to Pediatric Oncology as well as those identified by pediatric oncologists at UT Southwestern and 2) implementing strategies to reduce the radiation dose incurred by PET imaging to expand its acceptance in the care and treatment of pediatric patients. If successful, we will partner with other Children's hospitals or research institutions in Texas or nationwide to disseminate the research protocols and infrastructure requirements to broadly benefit pediatric cancer patients with imaging technologies developed by this core facility funding mechanism.