PI: Jose G. Trevino, MD and Wendy J. Bottinor, MD
Title: The Impact of Cardiac Cachexia on Clinical Outcomes in Patients with Pancreatic Ductal Adenocarcinoma (PDAC)

Pancreatic adenocarcinoma (PDAC) is a highly aggressive malignancy that leads to physiologic changes in the human body. One significant change common to approximately 80% of all patients with PDAC is cancer cachexia otherwise known as cancer-related muscle wasting. Loss of muscle or cachexia is well-studied disorder that typically impacts the skeletal muscle, leading to physical debilitation and poorer clinical outcomes. While there are many pre-clinical and translational studies analyzing skeletal muscle cachexia which leads to failure to thrive and inability to function through our therapeutic regimens, to our knowledge, there is no data regarding heart muscle degradation (cardiac cachexia) in patients with PDAC. The importance of looking at how the heart functions in patients with PDAC is crucial toward improved quantity of quality life. The purpose of this pilot project is two-fold:

Aim 1: To identify potential radiologic metrics for cardiac cachexia and analyze differences in these measures in the context of race/ethnicity, gender, age, and tumor characteristics.

Sub Aim 1a: We will retrospectively analyze Chest and Body CT scans for potential cardiac cachexia parameters and compare these to skeletal muscle indices obtained via established techniques.

Sub Aim 1b: We will prospectively obtain functional cardiac information via Cardiac Magnetic Resonance Imaging (CMR) from a small patient cohort.

Aim 2: Investigate physiologic differences cardiac profiles in patient-derived xenograft models of human PDAC in a racial/ethnically diverse group of surgically resected patients.

Ultimately, this pilot project will serve as a foundation for NIH/NCI funded mechanisms to study cardiac cachexia in PDAC patients.