The Pancreatic CRCE went through reorganization at the beginning of the 2020 academic year. Our current research efforts are geared towards early-detection (Li, Hua) and treatment (Prakash, Hua, Wallace) of pancreatic cancer. Dr. Li and Hua have recently demonstrated a patent-pending approach for direct detection of proteases, a potential biomarker for early cancer detection and prognosis, in human serum with a physiology-compatible neutral buffer (J1, C1, P1). Dr. Hua is developing various natural products (J2) with anti-pancreatic cancer activity, and is working closely with Dr. Wallace to evaluate their efficacy in vitro. The Wallace lab received a $100,000 supplement (collaboration with P. Chung, Pittsburg State) to their P20 award from the NIGMS to expand those studies by testing the hypothesis that a p300 inhibitor (CCS1477) will increase the sensitivity of pancreatic cancer cells to a genotoxic therapy (cisplatin). Dr. Prakash’s group has recently completed in vitro thermal dosimetry studies to assess cell survival and stress protein expression following exposure to mild hyperthermia (C2). Together with other members of the CRCE, Dr. Prakash is MPI of a recently submitted R01 proposal on a mild-hyperthermia approach for treatment of pancreatic cancer.

The 2020-21 academic year was especially challenging due to the ongoing COVID-19 pandemic curtailing collaborative research activities; we are optimistic the year ahead will allow for more sustained efforts.

**Journal papers:**


**Conference Presentations:**


**Provisional Patent Application:**

P1. Multiplex Microelectrode Array for Detection of Proteases as Biomarkers, Jun Li, Duy Hua, Yang Song, Huafang Fan, Morgan Anderson, Jessica Koehne, Meyya
Meyyappan, Provisional Patent Application No.: 63/179,848, Filed on Apr. 26, 2021, Applicants: Kansas State University Research Foundation and NASA