Jamal Bonner
Saint Augustine High School, New Orleans, Louisiana
Louisiana State University Baton Rouge, Rising Freshman

Kelly Jean Sherman, Ph.D.
Louisiana State University Health and Sciences Center, Department of Pharmacology

"Targeting Cell Motility in Pancreatic Cell Lines with Nerve Growth Factor β" (NGFβ)

According to the American Cancer Society, pancreatic ductal adenocarcinoma (PDAC) makes up about 3% of cancer diagnoses in the United States and 7% of cancer deaths. It is the leading cause of cancer mortality amongst humans worldwide. Although the etiology of pancreatic cancer is unknown. Chronic inflammation has been linked to increased cancer cell proliferation and migration of tumor cells in PDAC. Part of the inflammatory process is the release of cytokines and the regulations of the release of nerve growth factors inducing the growth of nociceptive neurons. Recent studies show that tumor cells express the family of nerve growth factor receptors, Trk, and that cancer cells are involved in the crosstalk of cytokines and growth factors within the tumor microenvironment. The crosstalk of cytokines and nerve growth factors regulate different pathways within the tumor microenvironment with evidence that they regulate angiogenesis and tumor cell growth leading to metastatic progression. More recent studies suggest that the high levels of NGFβ in PDAC is closely correlated with tumor proliferation. In this experiment we test the hypothesis that the neurotrophic factor NGFβ will increase the motility rate of Panc-1 cells *in vitro*. We will use a wound healing assay to measure the effect of NGFβ on Panc-1 cells, a highly metastatic cancer line. Wound healing is a complicated biochemical and cellular process that is needed to fix broken tissue. It includes dynamic interactions and crosstalk between different types of cells, interactions with molecules in the extracellular matrix, and the controlled release of soluble mediators and cytokines. Cells are seeded in a six-well plate and incubated overnight with 0.2ng/ml NGFβ. Next a linear thin scratch "wound" is placed in a confluent cell monolayer, data acquisition through microscopic image capturing, gap measurement at three time points, T=0, T=6 and T=24. Our results show no significant increase in cell motility of treated NGFβ Panc-1 cells *in vitro*.