Dakota Doucet, Class 2025

Campus: Baylor University Medical Center Dallas, TX
Research Area: Wnt Antagonist, Dickkop-1's Role in Human Cancers
Mentor: Carl Gregory, Ph.D. (Cell Biology and Genetics)

Dakota Doucet is a medical student of the class 2025 at Texas A&M University who is conducting a research project under the mentorship of Carl Gregory Ph.D., an Associate Professor in the Molecular & Cellular Medicine Department at Texas A&M School of Medicine. Their MSE research project will systematically review the "role of Dickkopf-1 (Dkk1), a canonical Wnt antagonist, in all human cancers and relationships between embryonic layers from which the cancer derives from. The Wnt/β-cantenin pathway has been implicated as a driver of various cancers through the discovery of its association with Adenomatous polyposis coli (APC) protein (Rubenfield *et* al, 1993). Therefore, Dkk1 has been previously hypothesized to act as a tumor suppressor. Our MSE study will evaluate experimental support of the hypothesis that there is a correlation between Dkk1 being an inhibitor or driver of cancer depending upon the embryonic tissue in which a cancer cell line derived from. For example, Dkk1 has been shown as tumor suppressor in colorectal cancer (Wang *et al.,* 2019) while high expression of Dkk1 promotes tumorigenesis in metastatic lung cancer (Gan *et al,* 2020). The information collected from the literature using PubMed with search terms "Dkk1 and cancer" is anticipated to help elucidate a meaningful relationship that predict outcomes and that could then be used to develop targeted therapeutics for this subset of multigene cancer.