The physics of Vortex Induced Vibrations (VIV) of flexible cylinders in water flow is well studied within certain parameters, if not yet fully understood. One of the variables that has yet to be studied is VIV of a flexible cylinder oriented at an angle into the direction of flow. My project is to work with Graduate Student Dan Carlson to complete an experiment started by Doctor Banafsheh Seyed-Aghazadeh and Professor Yahya Modarres-Sadeghi that will illuminate the physics of VIV in angled flexible cylinders. Understanding the science behind VIV of angled flexible cylinders in flow will contribute to better understanding the behavior of flexible mooring lines of offshore wind turbines.