Instrument Operation Principles
The instrument uses a Compton scattering polarimetry architecture which uses a central scattering rod and records the scattering distribution in the azimuthal plane of the detector.

Performance Simulation
Simulations are run using GEANT4 with a basic scatter rod of plastic scintillator surrounded by Cesium Iodide scintillator. The simulation results are used as the photon detection efficiency of our detector. We consider the depth of the scattering rod and absorber thickness against the percentage of scatter events.

Science Potential
Polarization is a new frontier in astrophysics. The properties of polarization allow insight into the production mechanisms of X-ray and Gamma ray spectrums that imaging cannot give. Primary mechanisms of polarization are from synchrotron emission. Since synchrotron emission is highly dependent on the magnetic field morphology, we can probe the models of magnetic fields for neutron stars and relativistic jets via polarimetry. The corona of black holes also can scatter polarized photons which can measure the corona properties through this transfer, this is also dependent on the angle from the accretion plane.

Conclusions
The Compton scattering instrument will be sensitive to a wide range of energies from hard X-ray into the gamma ray. Our mission will be to survey targets and gather polarization percentage and angle measurements of the bright X-ray and gamma ray catalog. Astrophysics measurements are possible in a CubeSat volume, small missions like these have great possibility for swarms and technology demonstrations for larger future instruments. We will propose to CSLU and ROSES solicitations this year for an intended flight around 2020.

Acknowledgements
Dr. Francis Weslling and the SHC Polaris CubeSat Team