Development of a Multidimensional Atmospheric Sensing Platform

Westcott, Ryan (School: Oregon Episcopal School)

The purpose of this project is to design a multidimensional atmospheric sensor platform to facilitate the monitoring and visualization of airborne pollutants and improve the accessibility of this data. This platform will provide users the ability to gather three-dimensional data on the pollutants in the atmosphere around us and visualize this data in real time. This will provide a significant benefit to a variety of industries and individuals alike. Engineers will have the ability to improve their designs for buildings and cities, researchers will be able to quickly detect leaks from refineries and other industrial operations, and more accurate prediction models will allow individuals with asthma and other air-quality related illnesses to better themselves. This platform was installed on a UAV (Unmanned Aerial Vehicle) so data could be taken from various altitudes and positions to create a full three-dimensional pollutant map. The visualization software developed in this project uses augmented reality technology to create a real-time view of the data.

Awards Won:
Third Award of $1,000
Air Force Research Laboratory on behalf of the United States Air Force: First Award of $750 in each Intel ISEF Category