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Overview

Lawrence Livermore National Laboratory's (LLNL) Technical Services Department supports Environment Safety & Health (ES&H). I worked on air quality projects regarding Particulate Matter concentrations monitored by Beta Attenuation Monitors and low-cost Purple Air Sensors which could potentially be applied as distributed sensors to capture more sampling locations.

Jordan and Dakota visiting one of the Beta Attenuation Monitoring sites in Livermore

Outcomes

ES&H enables and supports LLNL's mission through effective and efficient environmental, safety, and health programs. My project entailed a statistical approach in quantifying harmful particulate matter (PM2.5). An ANOVA and a Tukey's test was used to verify the effectiveness of Purple Air Sensors detected concentrations and their trends relative to Beta Attenuation Monitors.

I also utilized an array of Purple Air Sensors within Contra Costa County to quantify and track the emissions generated by major refineries in the surrounding areas. These efforts are intended to express the importance in monitoring and quantifying the presence of these pollutants that can cause severe health concerns. Optimal use of technology can help lower costs and improve the measuring of air quality.

"What a fantastic introduction to not only technical knowledge and national concerns, but also beneficial exposure to research and collaborations within a friendly scientific community at a national lab!"

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