Overview: Agricultural burning is an extensive and recurring annual event in several regions of the United States. Emissions from agricultural fires can impact air quality on local to regional scales. In Florida's Lake Okeechobee region, preharvest sugar cane burning smoke disperses over Palm Beach and Hendry counties. Smoke from these burns has the potential to cause harmful cardiovascular and respiratory health outcomes. The lack of ground monitors within Florida's sugarcane growing region (SGR) makes it difficult to determine changes in air quality during peak burning season as well as the human health impact from annual smoke. We hypothesize that the agricultural burns affect the air quality for those residing within and near the SGR and disproportionately impact Black, Hispanic, and poor communities compared to non-Hispanic White and affluent communities. We propose to work with community leaders and stakeholders to set up PurpleAir monitors allowing us to monitor air quality throughout the burning season.

Study Aim: Combine measurements from the Purple Air monitors with and satellite data to estimate exposure concentration levels in the SGR throughout the day.

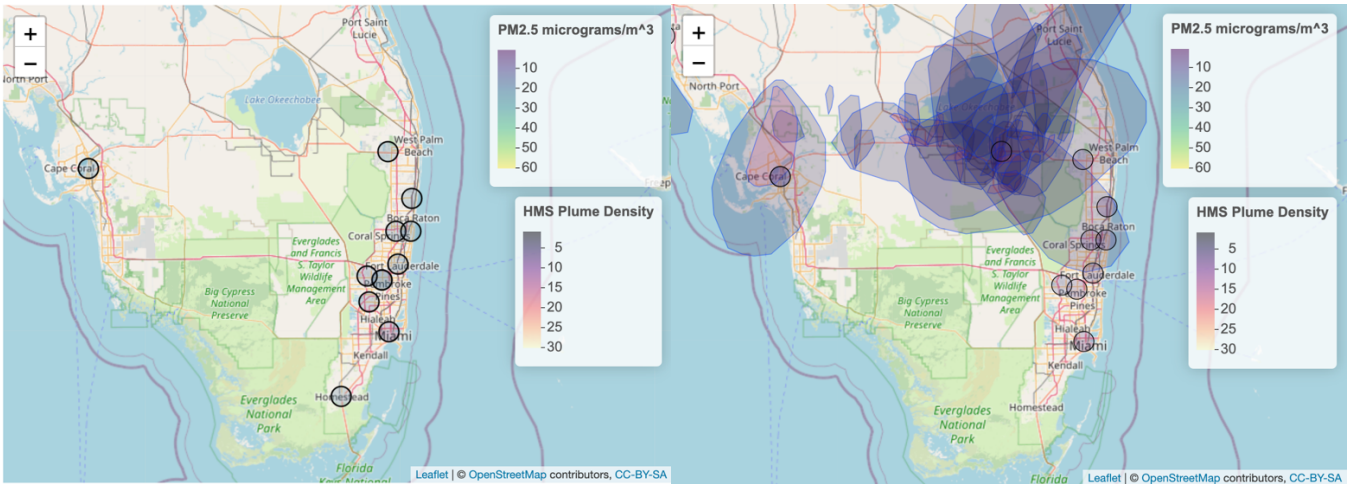

Figure 1: (Left) EPA ground monitor locations in Southern Florida and (right) National Oceanic and Atmospheric Administration Hazard Mapping System smoke plumes for December 14- December 30, 2021.

Our research team at Colorado State University will assess exposure to fine particulate matter ($PM_{2.5}$) by deploying a network of PurpleAir monitors among residents and businesses in Palm Beach and Hendry counties. We will need community members with internet access to host monitors from September 2022 to January 2023. We aim to recruit 25+ residences or businesses for the study.

For questions, please contact Kellin Slater, CSU project manager, at kellin.slater@colostate.edu, magzamenlab@gmail.com, or (970-691-8852). Colorado State University research team members will be available for in-person meetings the week of September 15th, 2022.