

Global Air Quality Trekkers - Clean Kitchen Study: Engagement and Service Learning Summit Poster Abstract

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Indoor air pollution is a widespread problem in Africa and is the leading cause of premature death in many African countries. This pollution is primarily caused by the burning of biomass fuels inside an enclosed kitchen in order to provide heat for cooking. Global Air Quality Trekkers is an undergraduate engineering team within the EPICS department at Purdue, and our goal is to create a kitchen design that utilizes natural ventilation to mitigate the amount of air pollutants present in these kitchens, specifically in Nandi, Kenya. This year, our goal is to analyze the ability of 9 different kitchen designs to reduce the amount of air pollution present. After this semester, the team will be traveling to Nandi, a community that has already begun to use these modified kitchens. After conducting research this semester on our West Lafayette test kitchen, we will be able to determine the most effective kitchen designs and share this with our project partners in Nandi. Additionally, we will be analyzing the effectiveness of different types of kitchens in Nandi, conducting surveys within the community regarding the new kitchen designs, and teaching an engineering module at the Tumaini school in Nairobi, Kenya. Overall, our hope is that these new kitchen designs will be adopted by more members of the community. These designs have the potential to save the lives of women and children, who become victim to diseases such as COPD and pneumonia after many years of smoke inhalation. Ultimately, our goal is for these designs to spread to all areas of Kenya and Africa, and improve the health of the people who live there.