# Community Partnerships as the Basis to Social Justice Research: A Case Study

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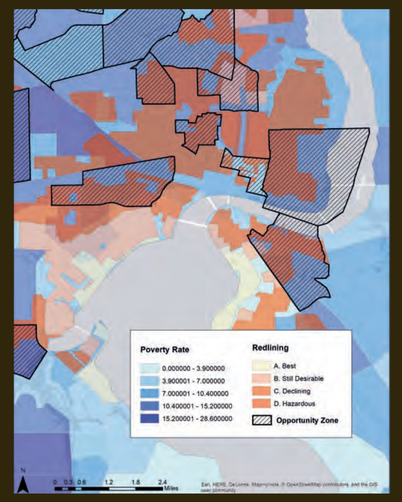
## BACKGROUND: INDOOR AIR QUALITY AS A JUSTICE ISSUE

Indoor air quality (IAQ) is a widely overlooked issue with serious public health consequences, disproportionately affecting low-income and minority communities. In Jacksonville's Health Zone 1 (HZ1), the legacy of redlining has left residents with aging and poorly maintained housing, higher exposure to environmental pollutants, and limited access to resources for improving air quality (Lane et al., 2022). Notably, Jacksonville ranks 8th among U.S. cities for asthma-related ER visits, and Black residents are five times more likely to seek emergency care for asthma than white residents (AAFA). These disparities underscore the critical need for justice-centered interventions and community-driven research to address IAQ issues and improve health outcomes for the most affected populations.




***How have community partnerships and youth engagement helped to effectively address indoor air quality (IAQ) issues in marginalized neighborhoods?***

## PURPOSE

Through participatory action research, we aim to illustrate how involving local residents and youth can lead to meaningful improvements in IAQ and health outcomes. This poster highlights the processes and preliminary results of our project, emphasizing the importance of collaborative approaches in addressing environmental health disparities.

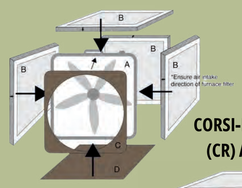

PAR group members discussing HZ1


Youth volunteers and lab members at a house painting event

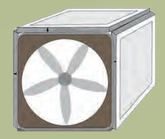
## METHODS

HZ1 has experienced decades of eroded trust in local government and research practices. To make our research effective, we implemented Participatory Action Research (PAR) to build trust with residents and democratize the research process. This approach allowed us to build relationships with local organizations focused on youth empowerment and community revitalization.

Through PAR meetings and these partnerships, IAQ was identified as a key concern. We leveraged our network in HZ1 to collect IAQ surveys and install Air Visual Pro Devices to monitor air quality. Real-time data from these sensors served as both a quantitative data source and an educational tool for residents. After data collection, we conducted a pilot test of community-made Corsi-Rosenthal (CR) boxes—DIY air filtration systems made from simple materials. These present a cost-effective solution, addressing both air quality and community engagement. We have also developed a webpage to share information about health in HZ1 with residents.




CORSI-ROSENTHAL (CR) AIR FILTER



## COMMUNITY PATNERSHIPS

Our collaborations with local organizations like the Center for Children's Rights and State of the Young People

**Building Trust:**
- Collaborations with local leaders and organizations built credibility and facilitated access to residents.

**Enhancing Relevance:**
- Community input shaped our surveys and interventions to address pressing IAQ concerns.

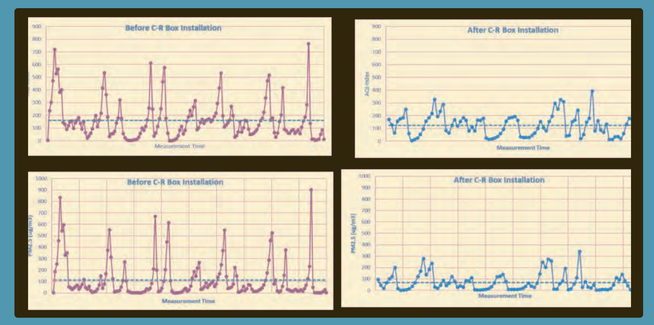
**Youth Empowerment:**
- Involving youth in constructing CR boxes and educational IAQ activities provided practical skills and engagement opportunities.

**Resource Sharing:**
- Partnerships provided essential resources and volunteer support for survey collection and sensor installation.

**Sustainability:**
- Fostering community ownership ensured the longevity and impact of our interventions.

## RESULTS

- IAQ surveys were accompanied by the installation of Air Visual Pro devices, which inform users with real time suggestions
- PM2.5 levels reduced by 39% in CR box pilot tests`
  - average PM2.5 level before installation was approximately 112.66 ug/m3 and afterwards decreased to 68.69 ug/m3
- Reduced peaks in PM 2.5 were also observed
- Community revitalization events continue, including interactive games, educational activities, and




## NEXT STEPS

- Share results of the benefit CR boxes bring and IAQ survey results
- Share methods for residents to build their own CR boxes
- Begin next PAR cycle by including non-youth residents in IAQ education

## REFERENCES

Asthma and Allergy Foundation of AmericaFollow this publisher. (2023, September 7). 2023 Asthma CapitalsTM Report. Issuu. https://issuu.com/aafa.org/docs/aafa-2023-asthma-capitals-report

Lane, H. M., Morello-Frosch, R., Marshall, J. D., & Apte, J. S. (2022). Historical Redlining Is Associated with Present- Day Air Pollution Disparities in US Cities. Environmental Science and Technology Letters, 9(4), 345–350. https://doi.org/10.1021/acs.estlett.1c01012

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