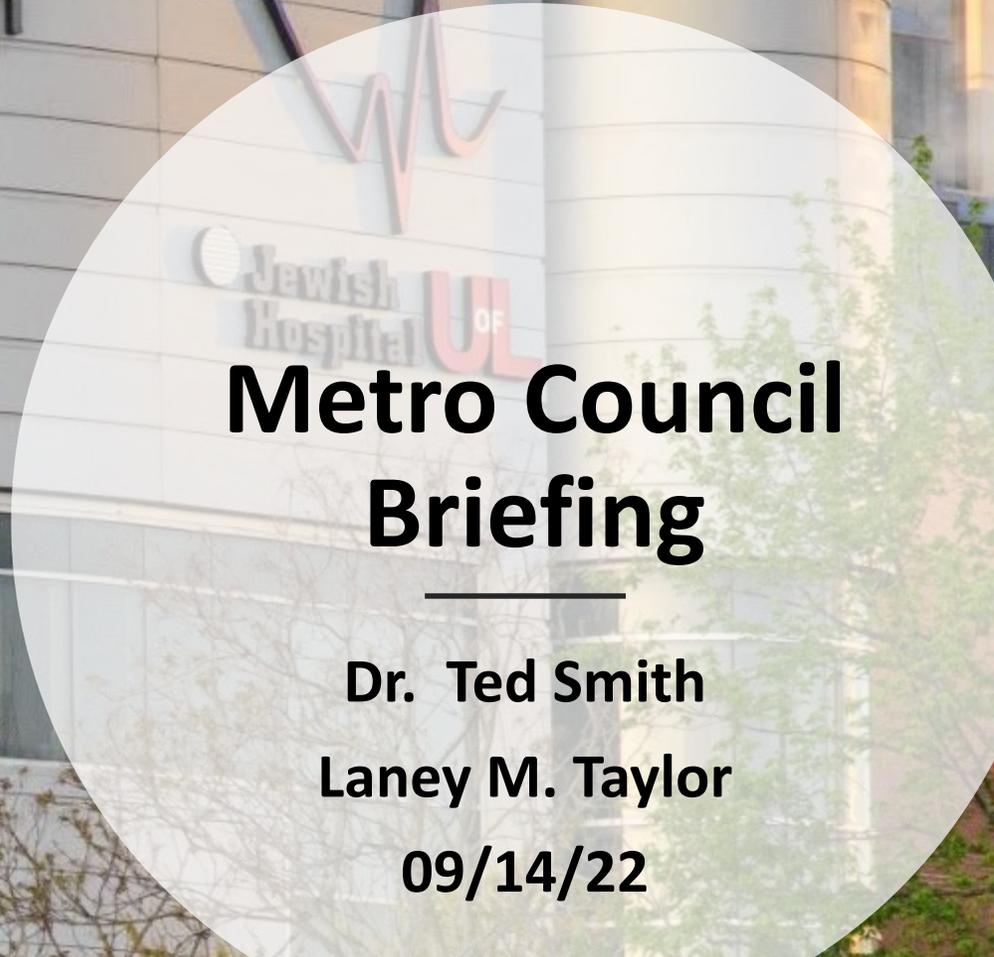


**CHRISTINA LEE BROWN ENVIROME INSTITUTE**

**CARDIOVASCULAR  
INNOVATION  
INSTITUTE**



**Metro Council  
Briefing**

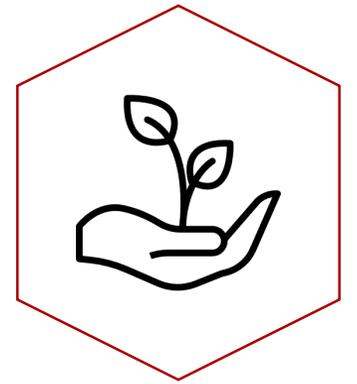
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**Dr. Ted Smith**

**Laney M. Taylor**

**09/14/22**

# Who We Are



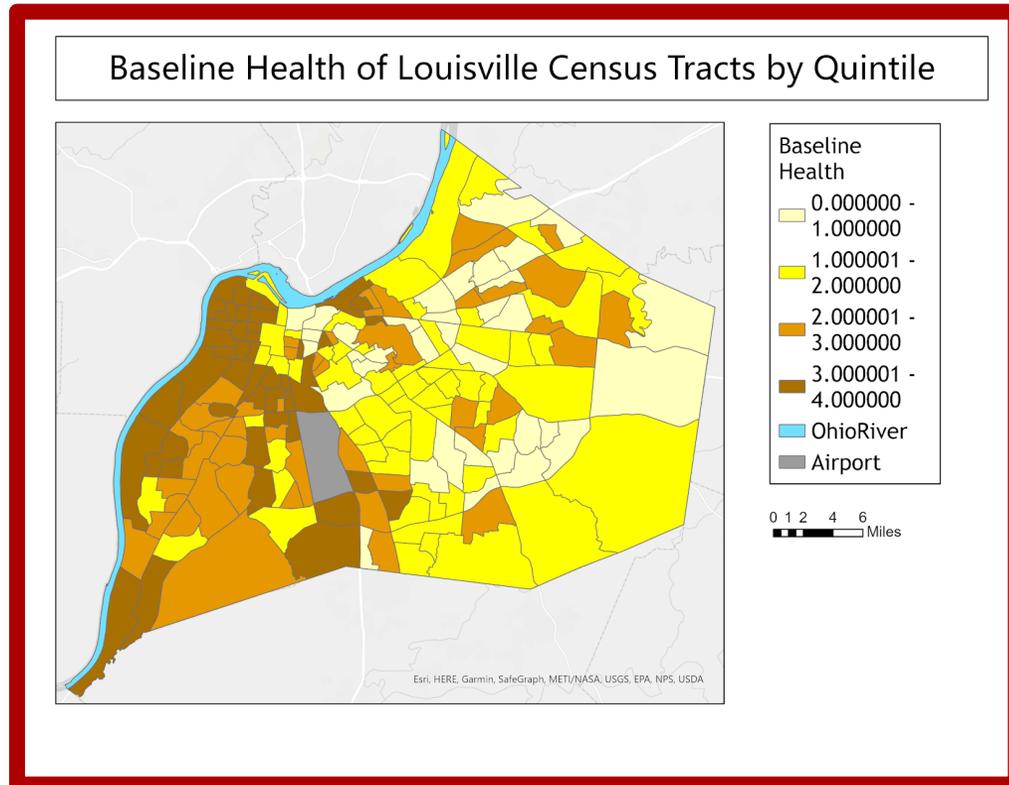
**The Christina Lee Brown Envirome Institute is dedicated to forging a **new vision of health** where individuals thrive in an environment consisting of unpolluted natural ecosystems, equitable social networks, & sustainable lifestyle patterns.**

# Q: What is a new vision of health?



Answering this question requires exploring our **landscape**, our **fundamentals**, & our **place-based research**.

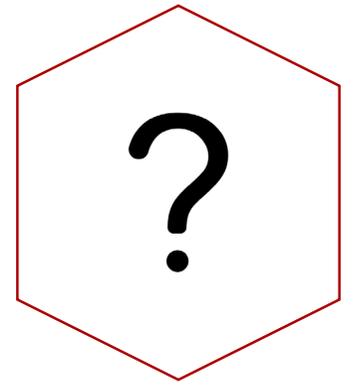
# Louisville's Health Landscape



- Per LMPHW, heart disease surpassed cancer in Jefferson County as the leading cause of death in 2018.
- Per LMPHW, the disparity in age adjusted death rates between NH white and NH Black racial groups more than doubled in 2018.
- There are clear health inequities and disparities across census tracts in our city.

*This map specifically measures vulnerability via baseline health measures like childhood asthma, proximity to hospitals, life expectancy, and more. Created July 2022.*

# Our Guiding Questions



**Q:** *What are the effects of the environment on our health?*

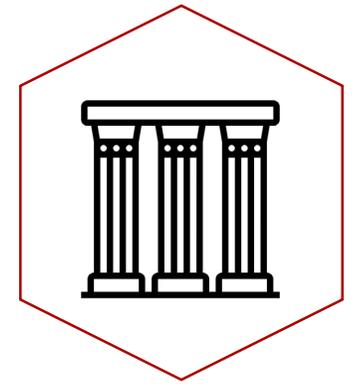
**Q:** *How do urban environments give rise to health disparities?*

**Q:** *What disease risks exist when our environment changes?*

**Q:** *How can we better understand environmental risks in our city?*

# Our Fundamentals

*Our philosophy is shaped by the core belief that our environment has a tremendous impact on our individual and collective health outcomes.*



The **Human Envirome** is made up of three nested domains:

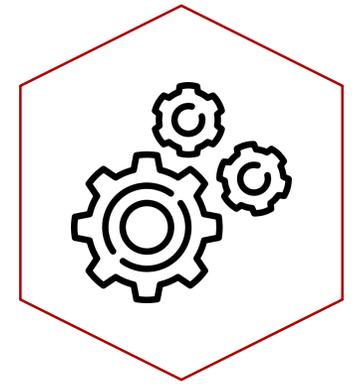
- **Natural**
  - The physical markers of the world around you
- **Social**
  - The built environment around you
- **Personal**
  - Your individual experience of the world

**This foundation creates a new framework for understanding the totality of the environment.**



*A visual model of the Human Envirome.*

# Our Research

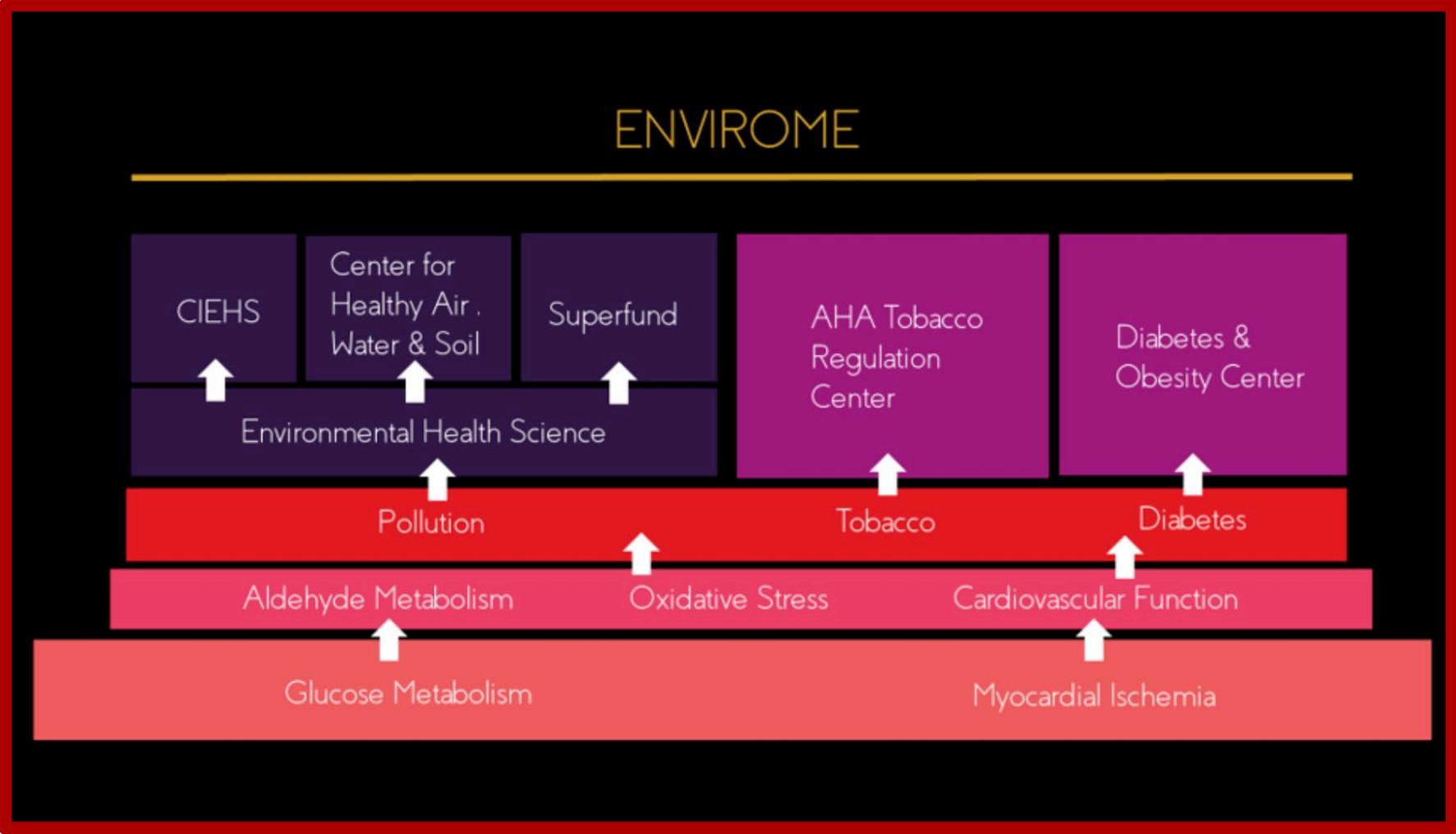
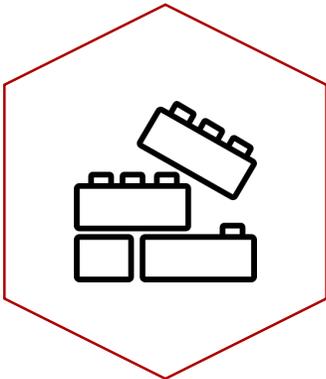


- Home to **six centers** including:
  - Superfund Research Center
  - Diabetes & Obesity Center
  - Tobacco Regulation and Addiction Center
  - Center for Healthy Air, Water and Soil
- Steward of **\$32** million dollars in active federal grants
- **85** peer reviewed publications authored in the last year
- Home to a team of **110** transdisciplinary researchers & support staff

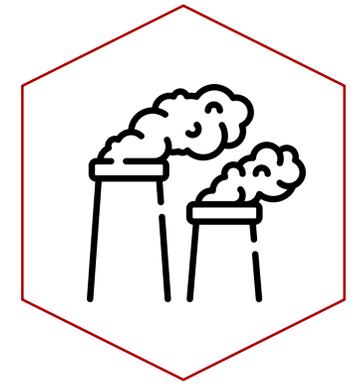


*Group photo of the Envirome Institute.*

# Our Core Expertise



# The Science: Pollution



## ➤ Our Hubs

- Superfund Research Center
- Center for Healthy Air, Water, and Soil
- Center for Integrative Environmental Health Sciences

## ➤ The Numbers

- **25+** publications
- **84+** team members
- **80+** meetings with civic groups and leaders

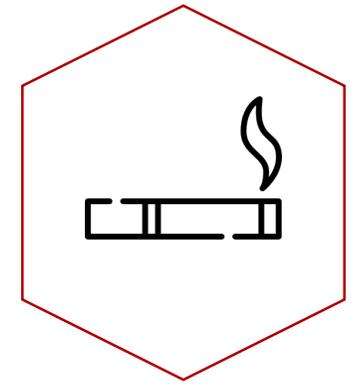
## ➤ Ongoing and Recent Projects

- The assessment of **1,200** Jefferson County residents' exposure to volatile organic compounds in Lee's Lane, Distler Farm, and Rubbertown
- Sharing information with community after a chemical spill in south Louisville



*A field scientist collecting wastewater samples in Shawnee for the Co-Immunity Project.*

# The Science: Tobacco



## ➤ Our Hub

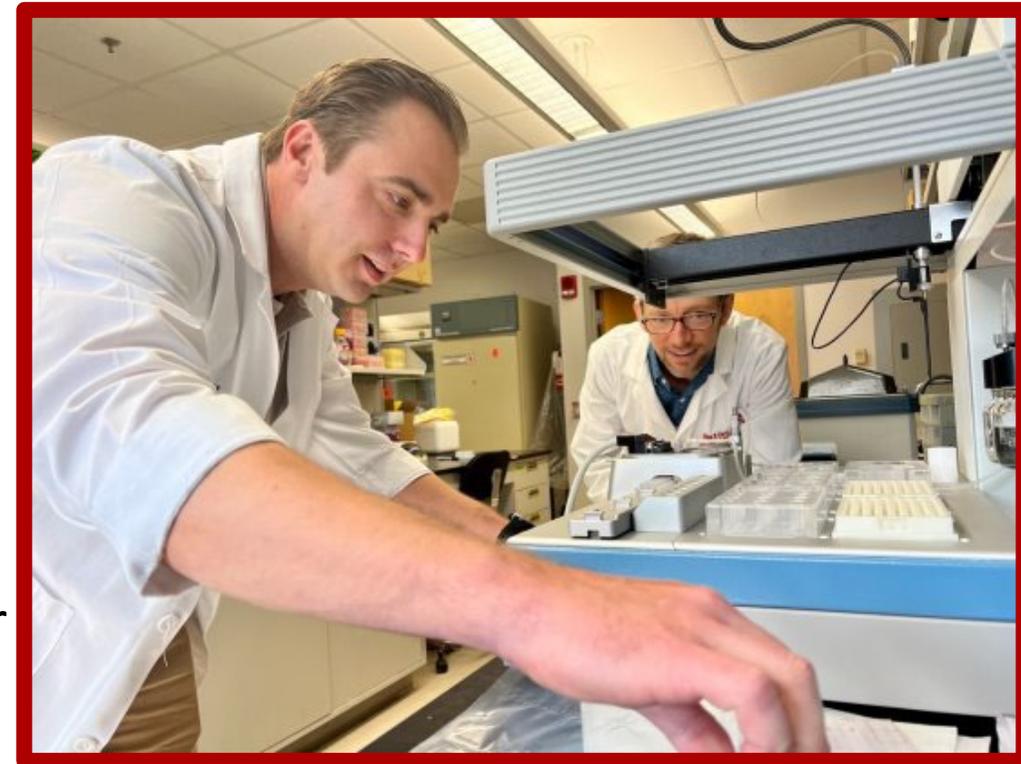
- Tobacco Regulation & Addiction Center (A-TRAC)

## ➤ The Numbers

- **37** publications
- **11** conference presentations
- **6** ongoing partnerships between governmental agencies

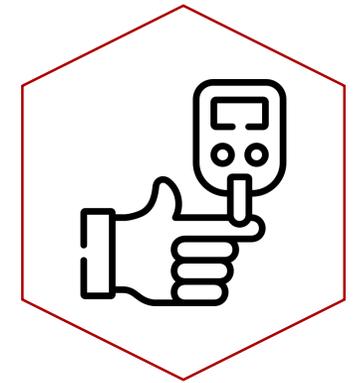
## ➤ Ongoing and Recent Projects

- Assessing which tobacco-induced biomarkers indicate the extent and progression of cardiovascular disease
- Establishing a Youth Advisory Council to address the vaping epidemic



*Scientists in one of the A-TRAC laboratories.*

# The Science: CardioMetabolic Disease

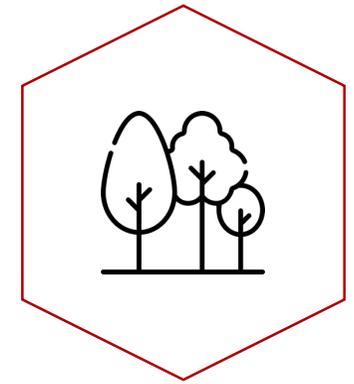


- **Our Hub**
  - Diabetes & Obesity Center
- **The Numbers**
  - **31** publications
  - **61** team members
  - **\$5.8** million in new National Institute of Health funding
- **Ongoing and Recent Projects**
  - Hosted and trained **5** undergraduate students over the summer in partnership with the American Heart Association
  - The advancement of scientific methods to further the study of subjects like metabolism and oxidative stress



*Scientist in a DOC laboratory.*

# Place-Based Research: Green Heart



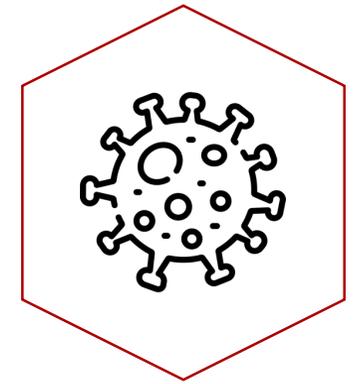
***Green Heart is a longitudinal, interventional research study measuring the impact of green space on air quality and human health.***

- **Rooted in 6 South Louisville Neighborhoods**
  - Community work strengthened by Councilwoman Nicole George and Councilman Kevin Triplett
- **Why**
  - Louisville has received an **“F”** on air quality from the American Lung Association.
  - Living near greenness is associated with decreased mortality
- **The Last Year**
  - **51** community meetings held
  - **9,000** trees planted
  - **700+** enrolled health study participants



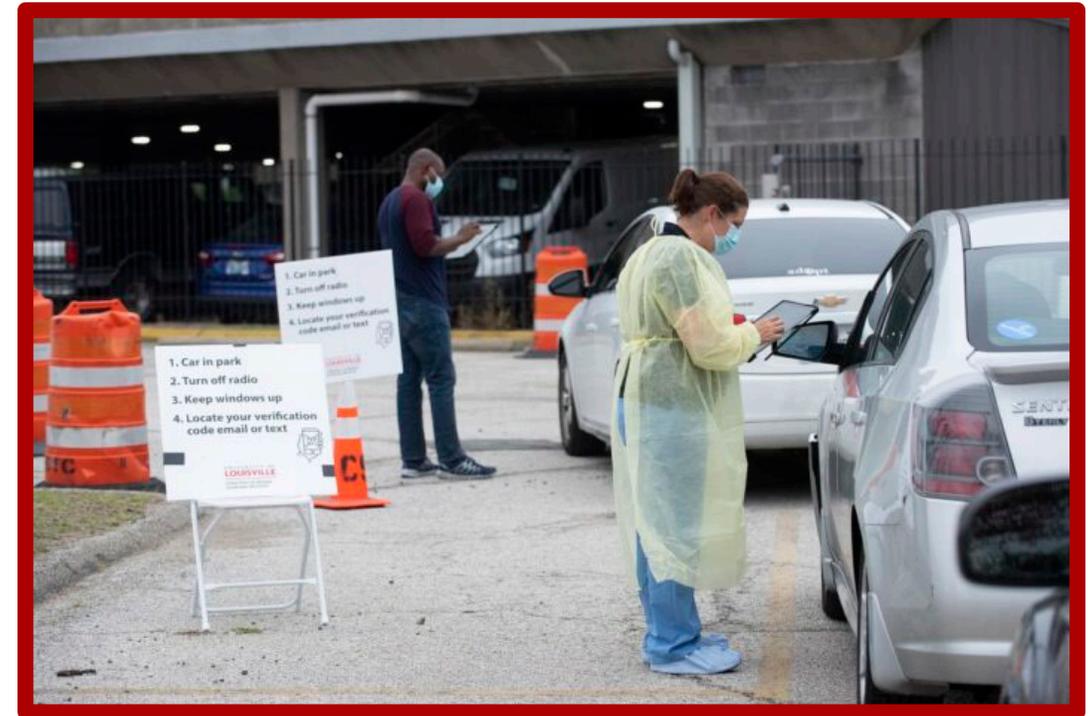
*Dr. Bhatnagar speaking at a community event for Green Heart.*

# Co-Immunity Project



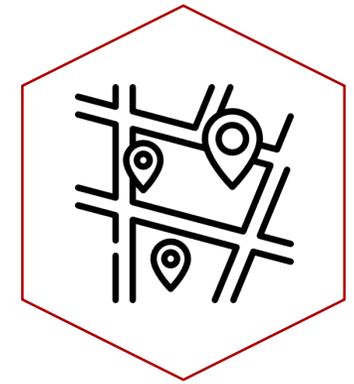
**The Co-Immunity Study tracked the movement of SARS-CoV-2 in the Louisville Metro-Jefferson County community.**

- **A Trusted Testing Partner for LMPHW**
  - Healthcare workers, individual community testing, and sewer monitoring
- **Key Partnerships**
  - Louisville Metro Public Health and Wellness
  - Metropolitan Sewer District
- **The Last Two Years**
  - **15,300** individuals tested throughout the project's duration
  - **9** waves of testing in different phases of the pandemic across **36** testing sites



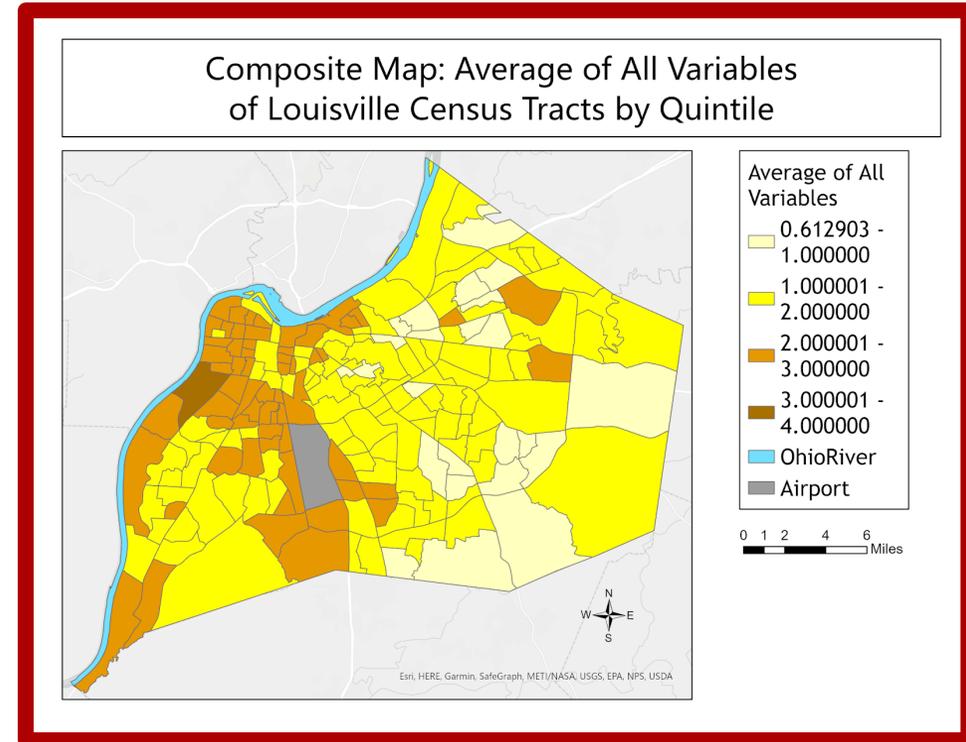
*Drive-thru testing taking place during the Co-Immunity Project.*

# Environmental Vulnerability Index



*The EVI is a visual representation of our city's social and environmental risk profile.*

- **Designed as a Tool for Civic Leaders in Louisville**
  - The EVI gives scores for each census tract in **6** distinct realms of vulnerability.
- **Why**
  - Vulnerabilities can not be viewed in silos within our city.
  - A better understanding of risk can improve emergency and community planning.
- **Last Summer**
  - **25+** variables analyzed from socioeconomic status to proximity to hospitals
  - **7** maps generated, refined, and finalized through ArcGIS
  - **1** report on our work being prepared for the community



*A composite map of social and environmental vulnerability across census tracts in Louisville. Created July 2022.*

# Where We're Going



*The New Vision of Health campus will focus on health as a shared community resource, incorporating environmental and cultural factors. Located in the heart of downtown, this space will host world-class research and hubs for community engagement.*

- Ground broken on May 25<sup>th</sup>
- New pillars of inquiry
  - **Nutrition**
  - **Sleep**
  - **Exercise**



*A rendering of the New Vision of Health Campus.*

# Consider Us a Partner

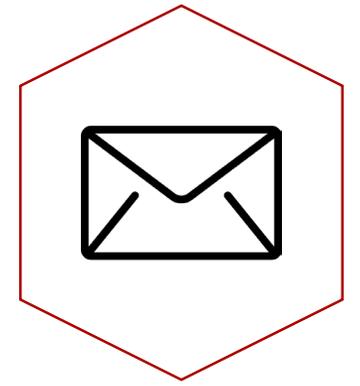


*The Christina Lee Brown Envirome Institute is dedicated to using our research to **reduce disease and improve health outcomes.***

- Louisville has profound health inequities that derive from a wide range of environmental circumstances.
- We are committed to improving understanding and outcomes in our city by applying our tools, evidence and expertise from the research we conduct.
- We can work together to improve understanding and outcomes in our city.

***Consider us your partner in current work & future conversations on environmental health.***

# Contact Us



***In April 2022, the Envirome hired a civic research aide to facilitate partnerships & collaborations with community stakeholders.***

- **Since joining the Envirome**
  - Assisted with place-based research and community requests from civic leaders and organizations
- **Ideas for potential collaboration**
  - Conduct research on environmental health topics
    - Peer city models, literature reviews, legislative history
  - Attend, speak, or table at aligned community events
  - Collaborate with local stakeholders on solutions to improve health outcomes

**Laney Taylor**

**Email:** [laney.taylor@louisville.edu](mailto:laney.taylor@louisville.edu)

**Phone:** (502)-370-5409



*Laney Taylor, Civic Research Aide*



**Let's continue to improve the  
health of our city, **together.****

