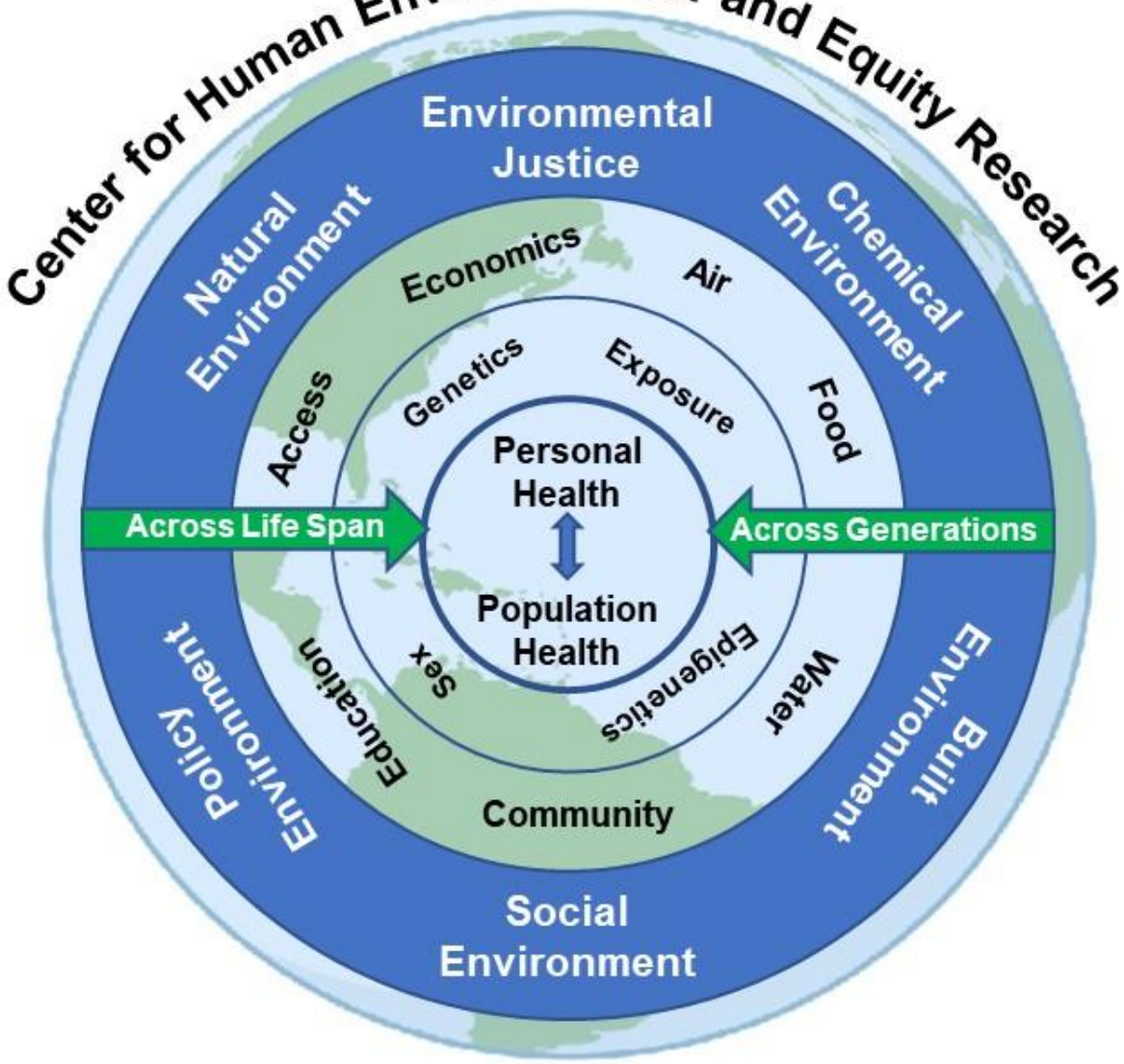
Center for Human Environmental and Equity Research
Environmental Justice
Natural Environment
Chemical Environment
Built Environment
Social Environment
Policy Environment
Economics
Air
Access
Genetics
Exposure
Food
Personal Health
Population Health
Across Life Span
Across Generations
Education
Sex
Epigenetics
Water
Community

CHEER

Pittsburgh Center for Human Environmental and Equity Research (CHEER)

Goal: To be the nexus of multidisciplinary, intersectional, and community-based environmental health research focused on identifying and eliminating environmental health disparities.

Motivation

- **Inspiring and integrating environmental health and environmental health disparities research across the University of Pittsburgh, the region and beyond.**
- **Positioning CHEER as a rallying point and major driver for national funding for environmental health disparities research.**

National Institute of Environmental Health Sciences
Your Environment. Your Health.

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Research

Funded by NIEHS Grants

Centers, Interagency Collaborations, and Consortia

Breast Cancer & the Environment Research Program +

Centers of Excellence on Environmental Health Disparities Research +

Environmental Health Sciences Core Centers

Scientific collaboration and cutting-edge technologies can advance environmental health sciences. The NIEHS Environmental Health Sciences (EHS) Core Centers Program facilitates these collaborations by funding institutional infrastructure to support scientific equipment, facilities, and other resources that can be shared among environmental health researchers. By pursuing shared research questions, the EHS Core Centers identify emerging issues that advance understanding about how pollutants and other environmental factors affect human biology and may lead to disease.

Organizational Structure for CHEER

Example of Federal Grants for Translational and Community Engaged Research

Research to Action: Assessing and Addressing Community Exposures to Environmental Contaminants (PAR-22-210)

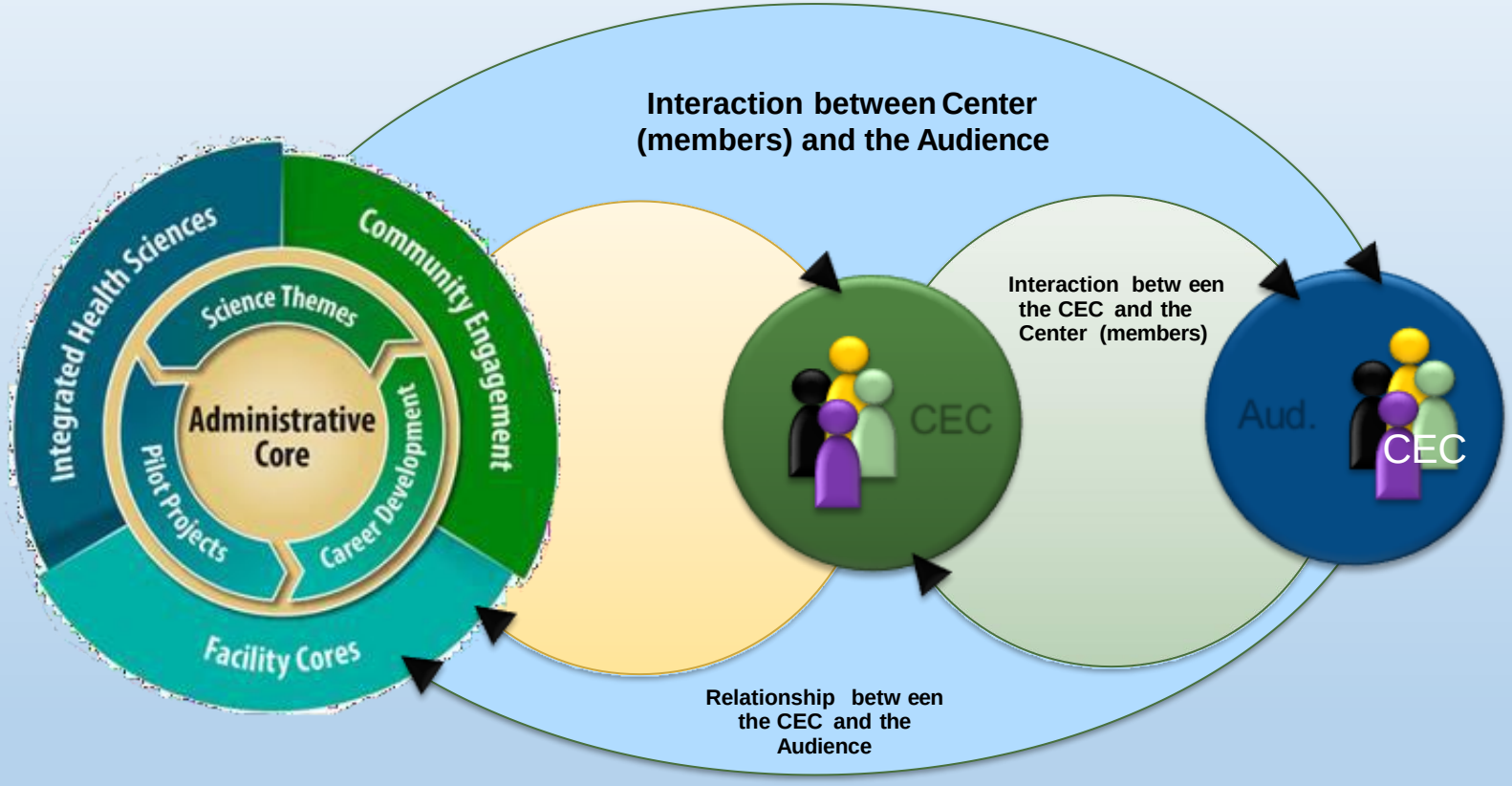
- Encourages multidisciplinary projects to investigate the potential health risks of environmental exposures of concern to a community and to develop and implement an environmental public health action plan based on research findings.
- Reflects NIEHS' and NIMHD's commitment to environmental health disparities and environmental justice research.
- Must employ community-engaged research methods to conduct research and to translate research findings into public health action.
- Should respond to environmental justice concerns of affected community groups and natural and technological disasters.

Example of Federal Grants for Translational and Community Engaged Research

Research to Action: Assessing and Addressing Community Exposures to Environmental Contaminants (PAR-22-210)

- **Develop equitable community-university partnerships where:**
  - Communities identify and define problems and risks related to environmental exposures and stressors that are of greatest importance to them.
  - Communities receive the scientific and financial support necessary to conduct rigorous research in partnership with academic researchers that will accurately characterize the distributions and sources of environmental exposures and exposure-health relationships (if any) in their community and empower all involved to take action to reduce potential health risks.
  - Communities co-develop training/education, communication, remediation, prevention and interventions with academic researchers and other project partners to reduce or eliminate such exposures and to improve health outcomes.
  - Training/education, communication, remediation, prevention and interventions are equitably implemented and provided in accessible, culturally appropriate formats and developed at a literacy level and in language(s) appropriate for members of that community.

Summary of CEC Roles for NIEHS EHSCC

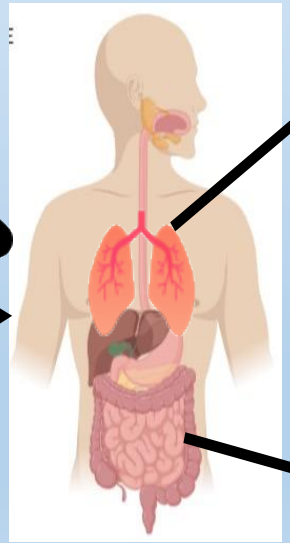



interpretable
reciprocity
collection
frequent
people
implementation
example
knowledge
barrier
usable
connection
goals
network
process
understanding
include
impact
good
members
universities
faculty
decision
use
ask
pathway
resources
done
better
already
full
need
clear
trust
training
academic
building
expertise
check
lack
giving
data
find
know
keep
front
research
built
effects
real
health
methods
community
environmental
design
directly
engagement
disconnect
transparency
work
partners
dissemination
apps
scientist
current
first
time
based
audience
qualitative
equally
provide
sample
policy
new
cbpr
property
sharing
analysis
feedback
development
consider
projects
access
bring
support
student
sensor
cheer
intervention
participate
etc
limited
coordination
exposure
like

CHEER CEC Areas of Focus

- Building relationships
  - Staying involved with efforts of our community partners
  - Inviting partners to co-lead RSGs
  - Developing mechanisms for information exchange with the community that are complementary and not redundant
- Ensuring that EHD research reflects the needs of our community partners
  - Co-developing research agenda with CHEER partners
  - Using the Community Advisory Research Board for feedback on cultural relevance and appropriateness of studies
  - Goal to increase EHD research lead by our community partners – focus on larger federal funding opportunities
- Capacity building for both community partners and Pitt faculty
  - Faculty development in working with community partners
  - Community development in grant application process and EHD technical support

PAthogen Storm:
Linking Basement Flooding-Associated Infection to Environmental Inequities



PATHOGENS	
GI	Pulmonary
Salmonella,	Nontuberculous mycobacteria
Fecal Coliforms	*Pseudomonas aeruginosa*
Norovirus	*Legionella pneumophila*

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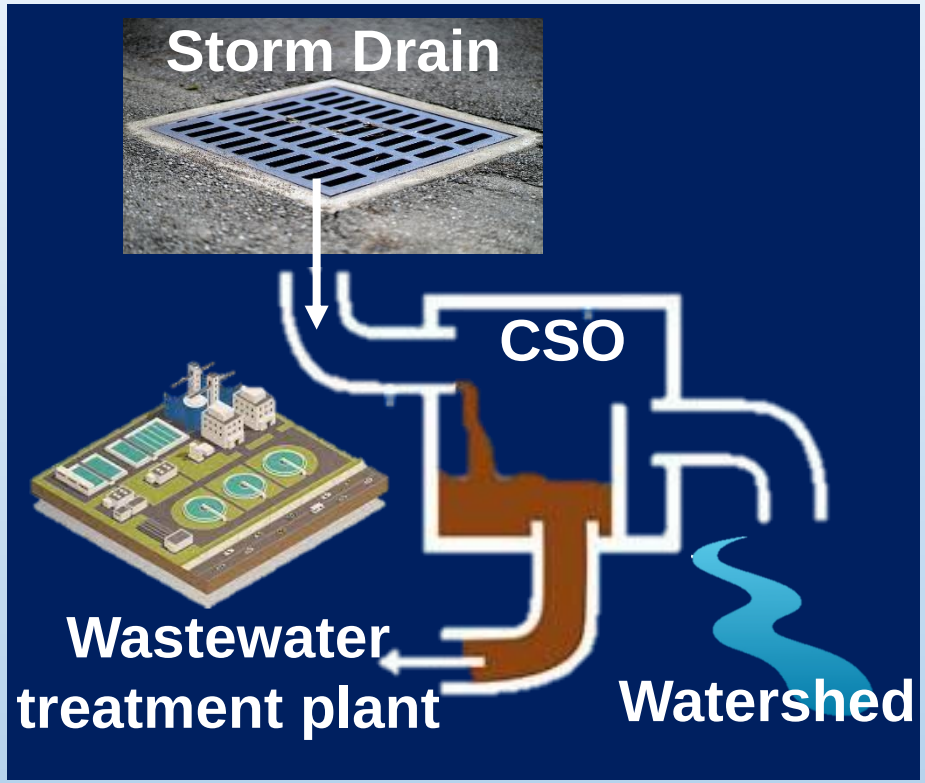
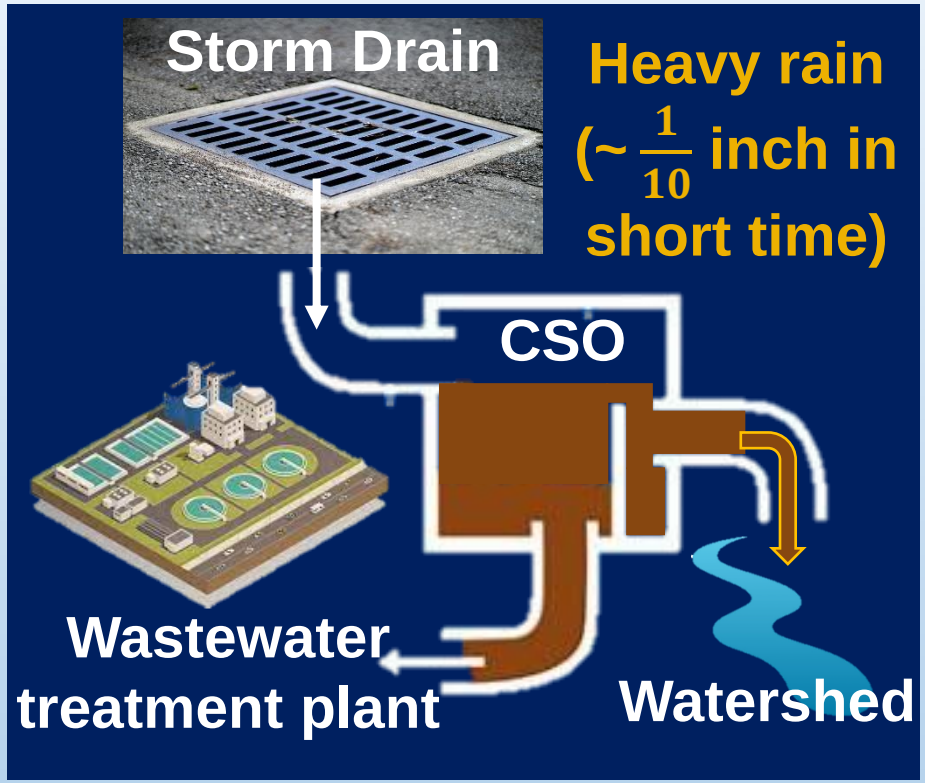
Aging infrastructure and changes in climate are resulting in more urban flooding in Pittsburgh



Aging infrastructure and changes in climate are resulting in more urban flooding in Pittsburgh

PITT | SWANSON ENGINEERING



- **Precipitation has increased 15% in Pittsburgh from 2016-2020 compared with 2010-2015**

Aging infrastructure and changes in climate are resulting in more urban flooding in Pittsburgh

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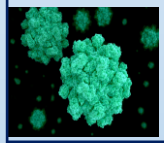
Nonfoodborne GI

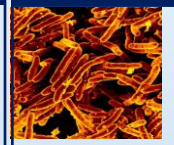

Salmonella


Fecal Coliforms


Norovirus

135 million infections / year

Pulmonary


NTM


P. aeruginosa


L. pneumophila

$2.39 billion / year in hospital costs

- **Precipitation has increased 15% in Pittsburgh from 2016-2020 compared with 2010-2015**
- **Basement flood waters and flood water-associated aerosols could be an exposure route to pathogenic organisms**

Preliminary evidence suggests racial inequality in non-foodborne GI incidence in Pittsburgh

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Neighborhood	Racial breakdown		Incidence per 1000 people from 2016-2018			
	% Black	% White	Cryptosporidium	Campylobacter	Salmonella	Crytosporidium, Campylobacter and Salmonella combined
Homewood	95.30	4.16	0.16	0.80	1.20	2.16
Perry South	64.60	26.54	0.00	0.65	0.91	1.55
East Liberty	58.50	25.00	0.17	0.51	0.51	1.19
Mount Oliver	40.60	40.40	0.04	0.12	0.40	0.56
Perry North	39.90	62.67	0.15	0.38	0.38	0.91
Sheraden	38.90	49.86	0.00	0.19	0.38	0.57
Hazelwood	33.90	54.34	0.00	0.00	0.93	0.93
Bloomfield	25.20	81.57	0.00	0.00	0.59	0.59
Troy Hill	15.50	81.21	0.00	0.37	1.11	1.47
Crafton	9.10	66.28	0.00	0.05	0.36	0.41
Central Business District	9.00	74.57	0.00	0.19	0.56	0.75
Mount Washington	8.60	85.93	0.11	0.23	0.45	0.80
Elliot	7.60	65.52	0.06	0.23	0.23	0.52
Central Lawrenceville	6.60	86.17	0.00	0.22	0.89	1.12
Banksville	5.30	88.10	0.21	0.87	1.20	2.28
Brookline	4.10	91.43	0.00	0.76	0.23	0.98
Squirell Hill South	3.40	82.03	0.13	0.40	0.53	1.06
Southside	3.30	88.54	0.00	0.68	0.68	1.36

Data provided by the Allegheny County Health Department

Preliminary evidence suggests racial inequality in non-foodborne GI incidence in Pittsburgh

PITT | SWANSON ENGINEERING

Neighborhood	Racial breakdown		Incidence per 1000 people from 2016-2018			
	% Black	% White	Cryptosporidium	Campylobacter	Salmonella	Crytosporidium, Campylobacter and Salmonella combined
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East Liberty	58.50	25.00	0.17	0.51	0.51	1.19
Mount Oliver	40.60	40.40	0.04	0.12	0.40	0.56
Perry North	39.90	62.67	0.15	0.28	0.28	0.91
Sheraden						
Hazelwood						
Bloomfield						
Troy Hill						
Crafton						
Central Business						
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Southside	3.30	88.54	0.00	0.68	0.68	1.36

Combined incidence (per 1000 people 2016-2018)

- City of Pittsburgh Average (All neighborhoods) = 1.07
- Average in Predominantly Black Neighborhoods = 1.64
- Average in Predominantly White Neighborhoods = 0.98

Data provided by the Allegheny County Health Department

Unknowns:

1. What are the source(s) of basement flooding?

2. Does exposure to basement flooding pose microbial health risks?

Without this information, proper mitigation strategies cannot be deployed

Study Team

PITT | SWANSON ENGINEERING

Emily Elliott
GES

Sarah Haig
CEE & SPH

Dan Bain
GES

Isaiah Spencer
CEE PhD Candidate

PITT MOMENTUM FUNDS

Aaron Barchowsky
SPH

Jeanine Buchanich
SPH

CHEER Leadership

WOMEN for a Healthy ENVIRONMENT

Hanna Beightley

Michelle Naccarati-Chapkis

CHWs: Germaine Gooden-Patterson & Tiffany Carter

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Pilot study will investigate the influence of land topology and race on basement flooding microbial exposure

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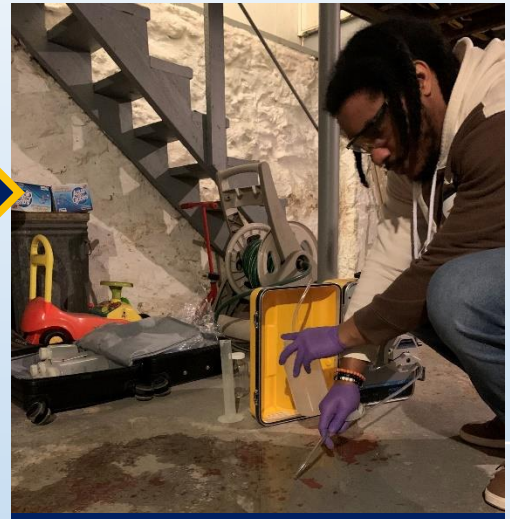
Survey

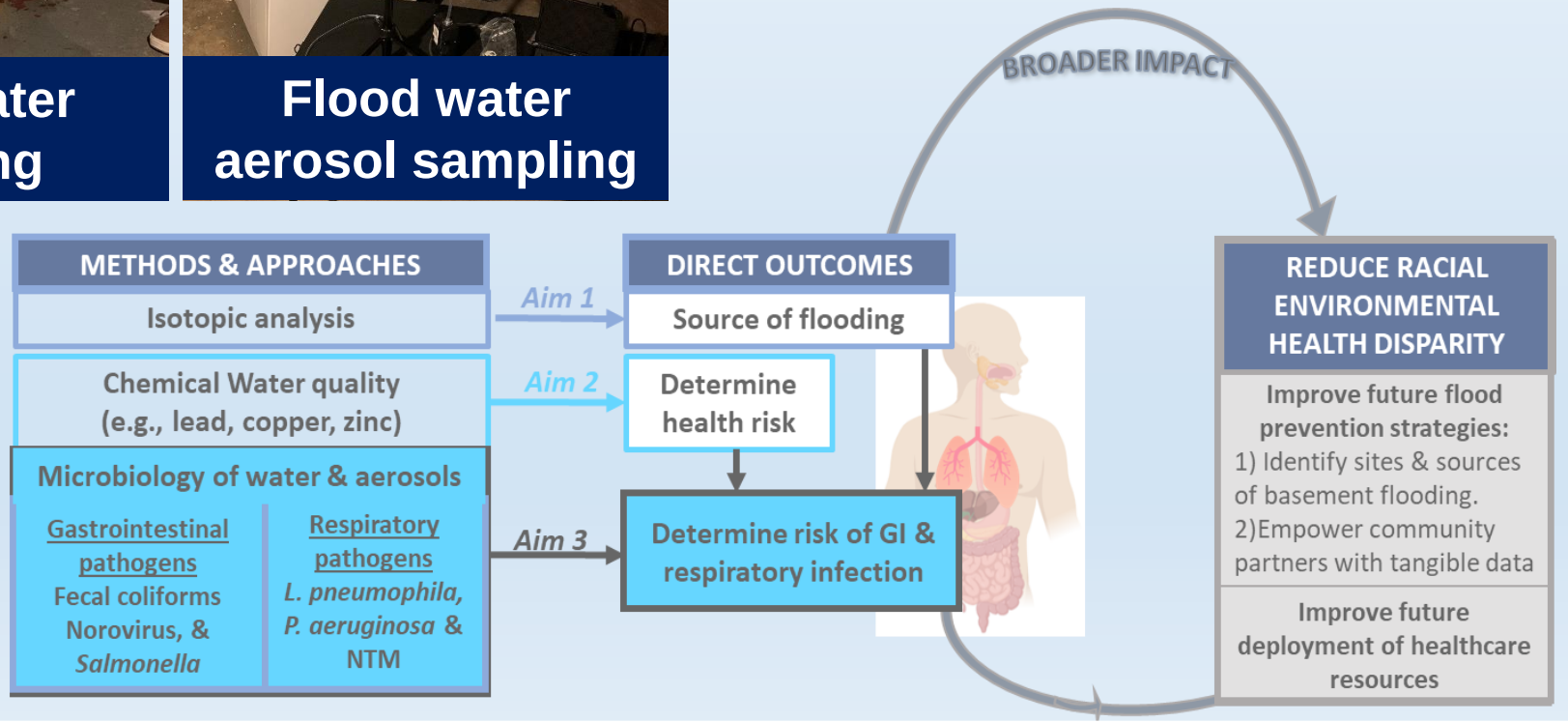


Flood water sampling

Flood water aerosol sampling

25 Households (land topology)
50% in Homewood (flat)
50% in Mon Valley (less flat)

For more details & to sign up, scan this!



UrbanKind INSTITUTE

Dr. Jason Beery, Director of Applied Research, UrbanKind Institute
Pitt Community Engaged Scholarship Forum
March 7, 2023

Mission

Our mission is to eliminate barriers to family thriving in communities that have been and are over-burdened and under-resourced.

We do this by centering the voices, lived experiences, goals, and priorities of residents from these communities in the decisions, research, and investments in their communities so that residents are the primary beneficiaries.

Areas of Work

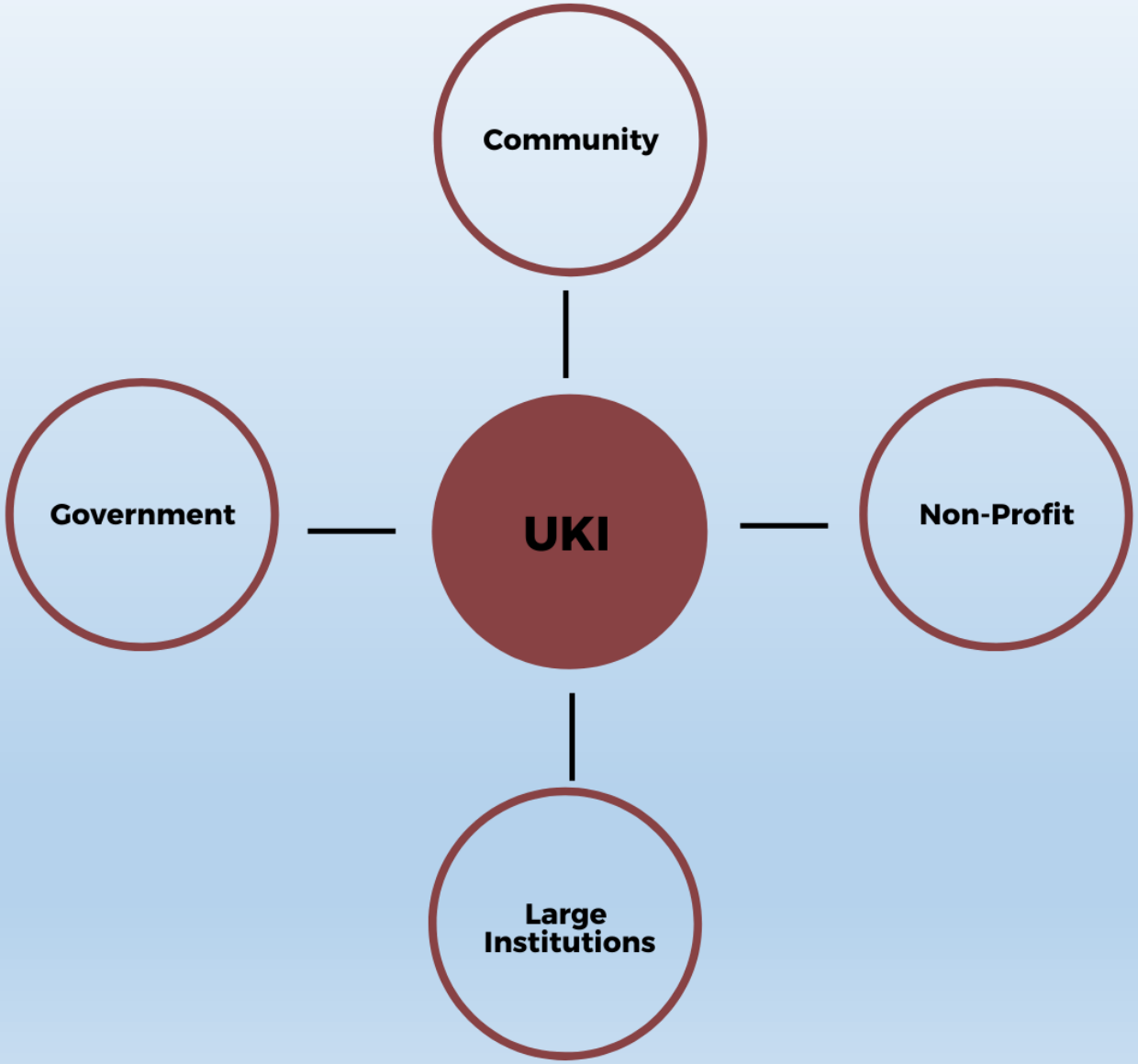
Community Engagement & Education

Equity-Based Facilitation

Program Evaluation

Research & Policy

UrbanKind as a Bridge

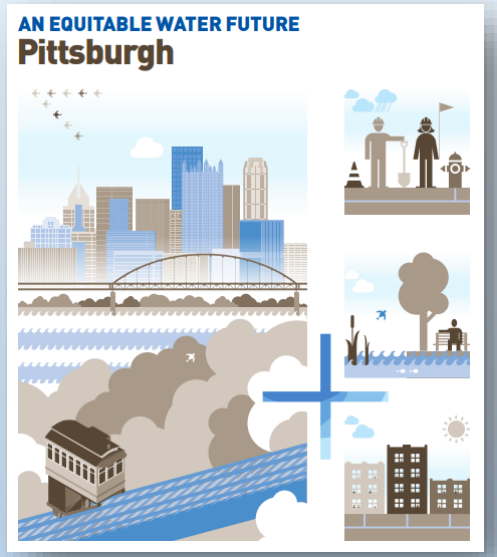


EJGP

EQUITABLE & JUST
GREATER PITTSBURGH

BLACK
ENVIRONMENTAL
COLLECTIVE

BLACKEQUITY
COALITION



Cancer & Environment Network
of Southwestern Pennsylvania

The
Pittsburgh
Study

ECONOMIC JUSTICE
CIRCLE

PEOPLE'S PLAN FOR PA
CLIMATE JUSTICE
peoplesplanforpa.org

JUST TRANSITION
POWERFORCE

INDEPENDENT
SECTOR

Current Work with Pitt

The Pittsburgh Study

Community-partnered research and advocacy focused on child health equity

Dr. Jamil Bey

- **TPS Core Team**
- **Internal Advisory Committee**

Dr. Jason Beery (me!)

- **Co-Chair, Policy & Place Committee**
- **Community Partner, ReCAST Project**

Resiliency in Communities After Stress and Trauma (ReCAST Project)

Empowering Teens to Thrive Intervention (PI: Dr. Alison Culyba)

Sisterhood/Manhood Intervention (PI: Dr. Liz Miller)

Collective Efficacy Intervention (PI: Dr. Mary Ohmer):

- Promote community change through a community-based intervention that engages youth and adults, fosters collective efficacy and community resilience, and increases community capacity and leadership to prevent violence and improve community mental health
- Community Partners: UrbanKind Institute and Neighborhood Resilience Project
- Currently running a collective efficacy training in Braddock area and WestSide (City) neighborhoods

Allegheny County Department of Human Services

UPMC CHILDREN'S HOSPITAL OF PITTSBURGH

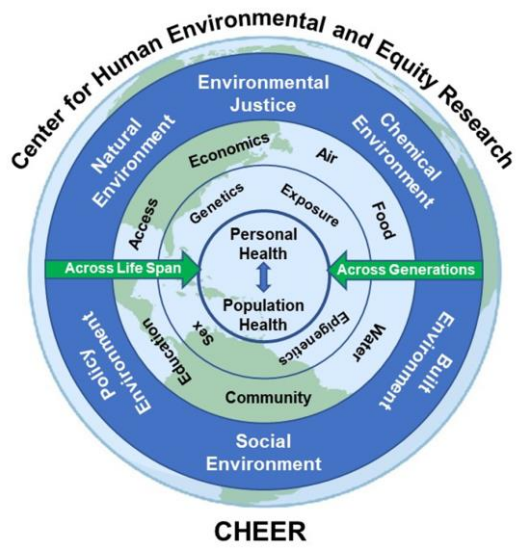
University of Pittsburgh School of Social Work

(all interventions funded by Substance Abuse and Mental Health Services Administration)

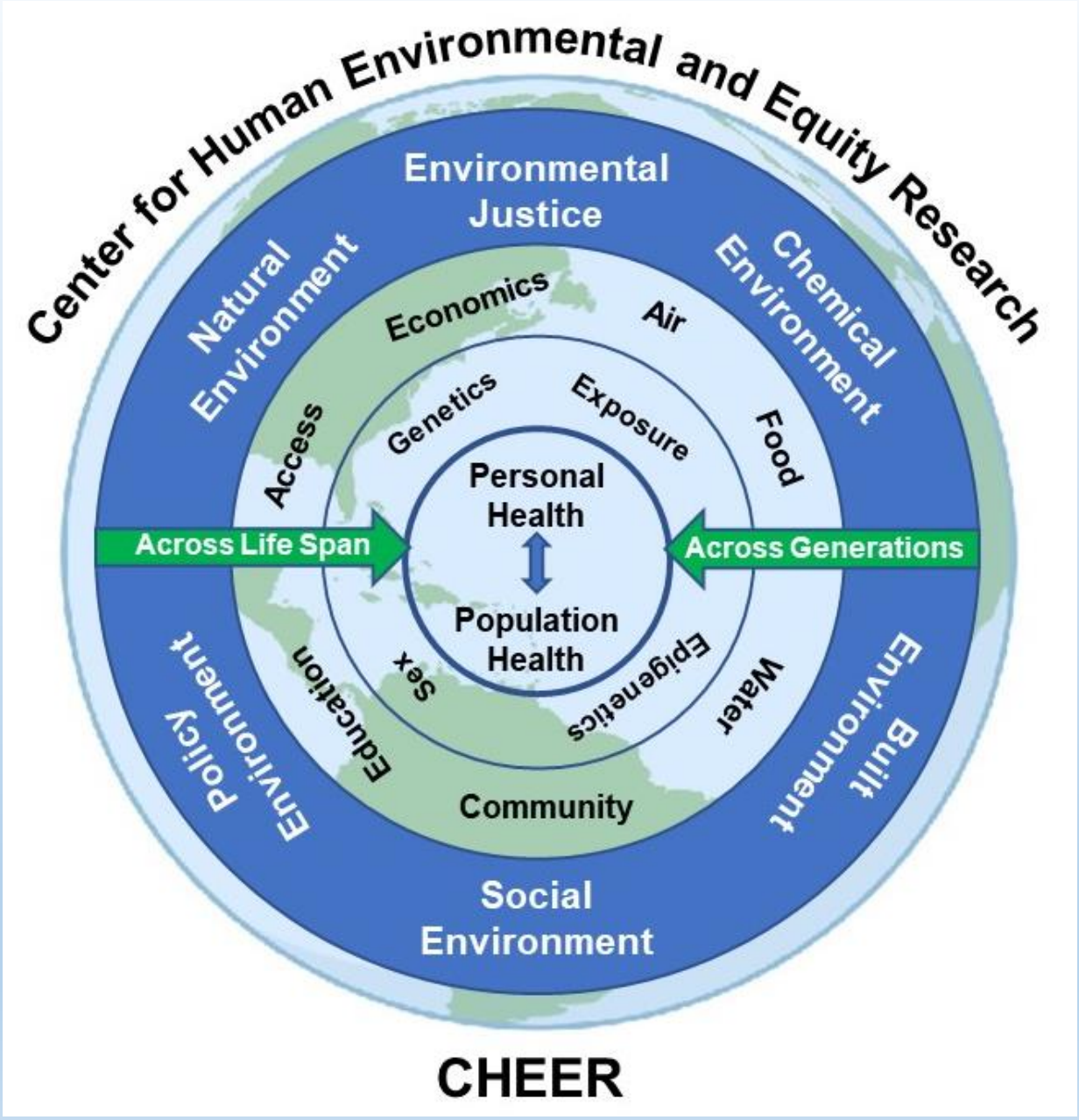
Possible Future Work with Pitt

Cancer & Environment Network of Southwestern Pennsylvania

- **NIH Cancer-inequity related Funding Opportunity Announcement**
- **Apply with partners from Pitt?**



- **Developing partnership with CHEER**
- **Would help with:**
  - **Grant opportunity identification**
  - **Proposal support and guidance (especially with federal grants)**
  - **Research/analysis support**



CHEER-fully implementing multidisciplinary and community-based research to improve environmental health and address health inequities across our region, country, and the globe.