THE UNIVERSITY OF ARIZONA
Mel & Enid Zuckerman College of Public Health

SOUTHWEST ENVIRONMENTAL HEALTH SCIENCES CENTER
COLLEGE OF PHARMACY

OPPORTUNITIES FOR IMPROVING COMMUNITY HEALTH & WORKING TOWARDS ENVIRONMENTAL JUSTICE

Presented by: Paloma Beamer Ph.D.

Community Engagement Core Director-Southwest Environmental Health Sciences Center
Professor-Environmental Health Sciences, Chemical & Environmental Engineering, Bio5 Institute, Arid Lands, American Indian Studies
Research Scientist-Asthma and Airway Disease Research Center
Affiliated Faculty-Mexican American Studies, Center for Latin American Studies

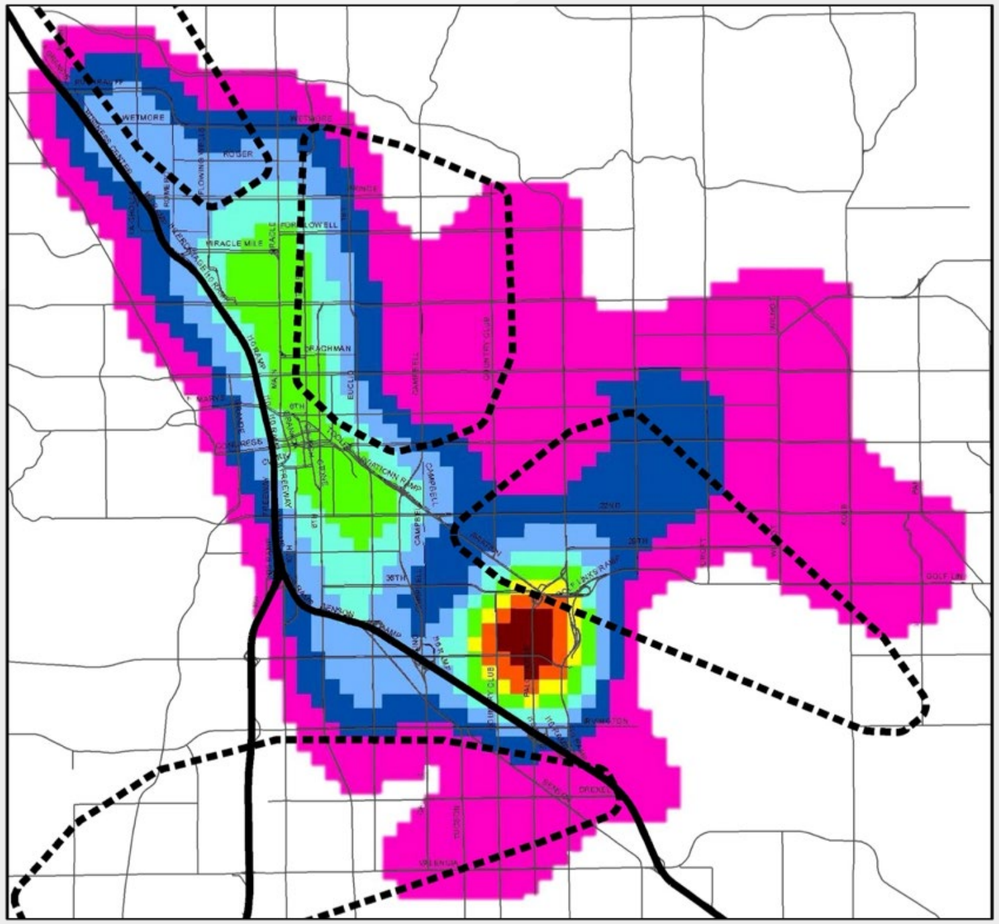
OPPORTUNITY #1: WORK WITH SMALL BUSINESSES

Small businesses particular risk:

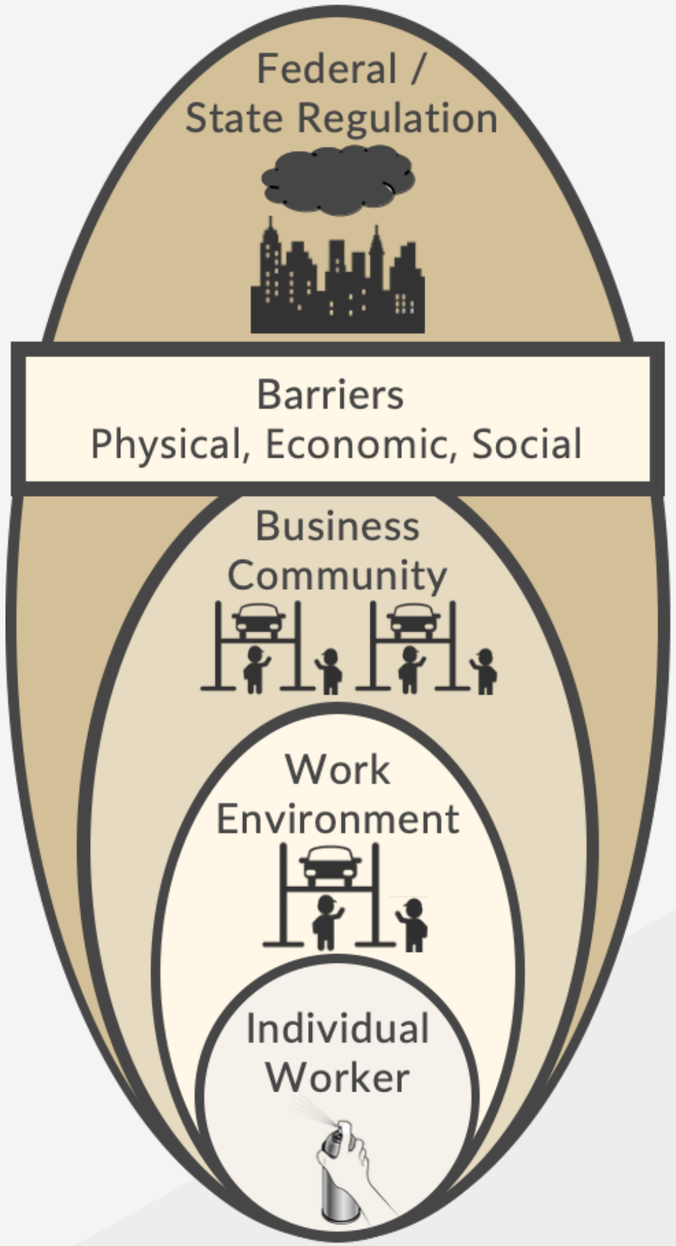
- Use hazardous solvents
- Less likely to provide health insurance, medical screening tests, employ safety personnel
- Number exceeds regulatory capacity
- Barriers with language/literacy and marginalized status

Community Assist of Southern Arizona (CASA):

- Comprehensive multi-media pollution prevention program
- Source reduction, recycling, treatment and disposal
- Promotoras conduct outreach and trainings



Moreno Ramirez et al. IJERPH (2015); Beamer et al. Ped Pul (2016)

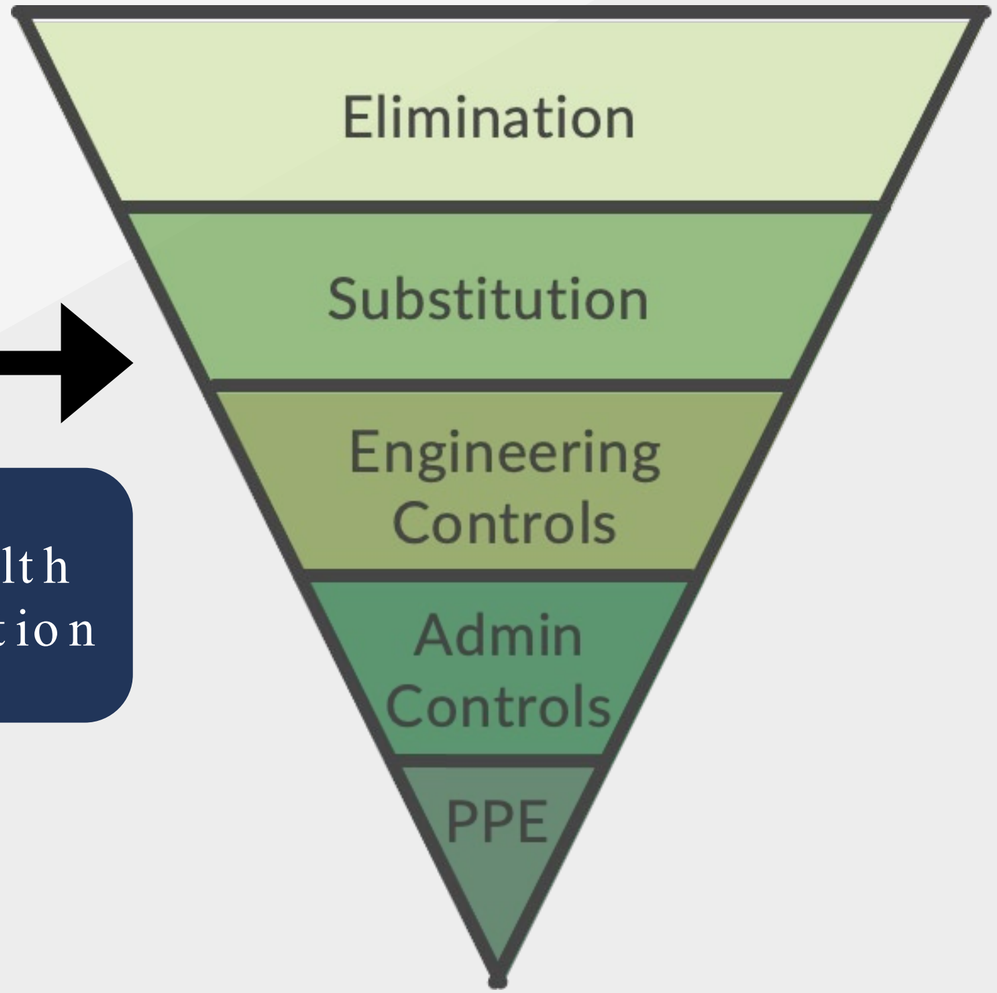


Socio-ecological Model:
Occupational & Environmental
Health Disparities

Community
Partnerships
UA, SERI, El Rio (FQHC)

SOLUCIONES EN UN MUNDO CAMBIANTE

Community Health
Worker Intervention

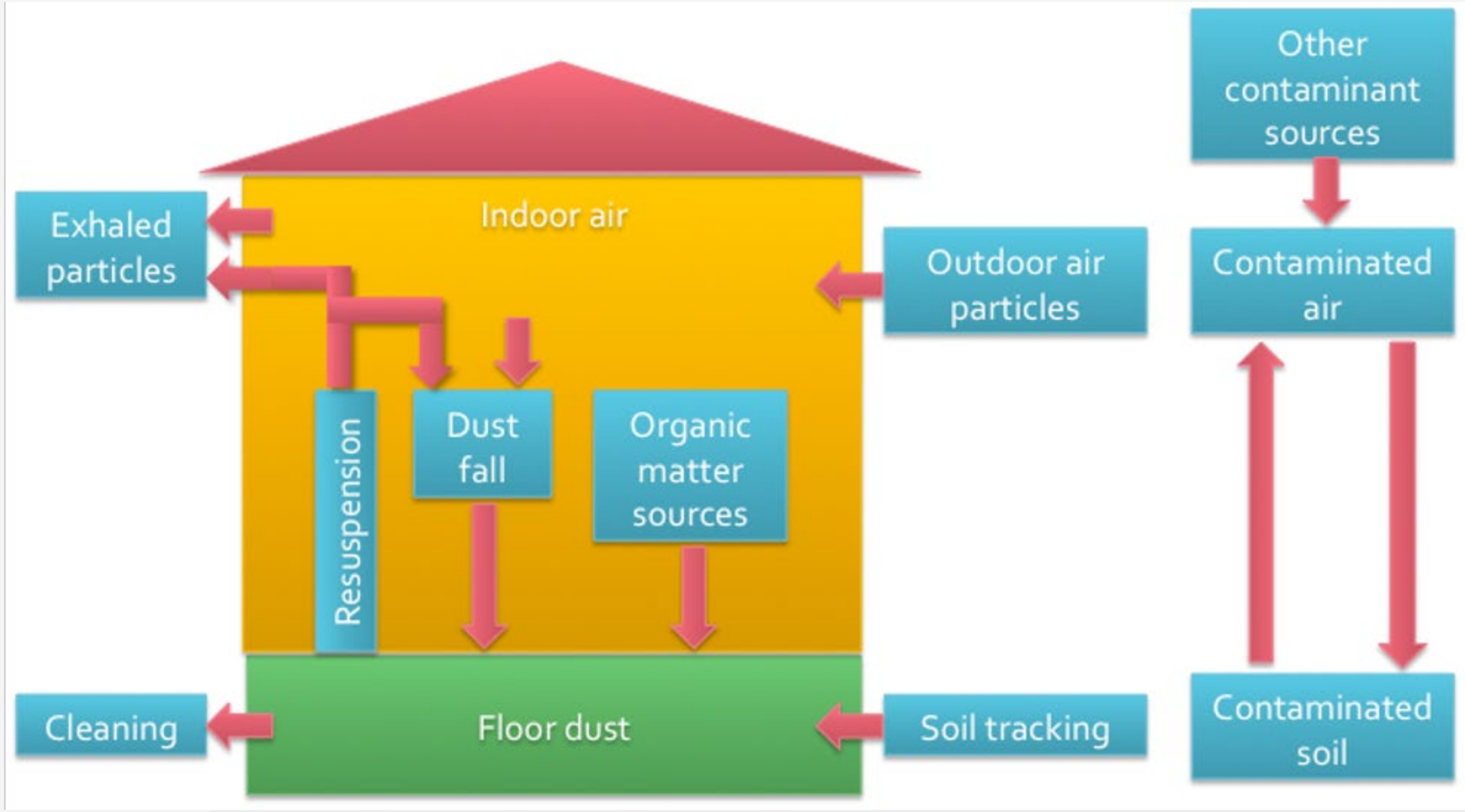


Hierarchy of Controls

Ingram et al. JESEE (2021)

Funded by Research 2 Action R01ES028250

OPPORTUNITY #2 : ADDRESS CONTAMINATED SOIL

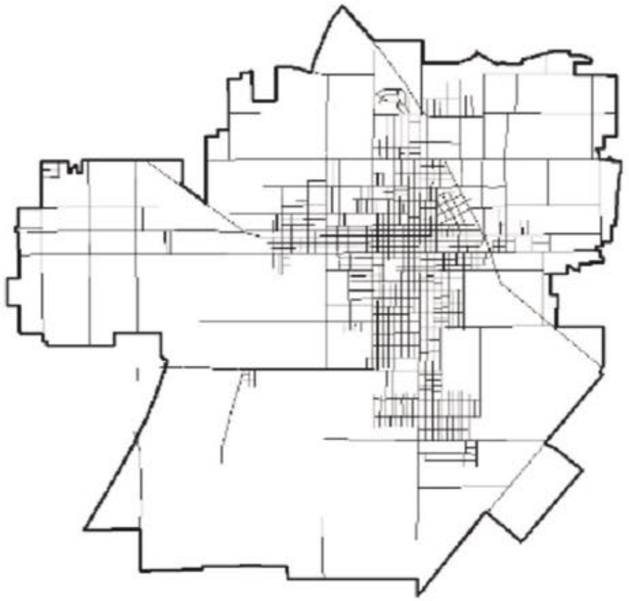


- Air transport pathway has substantial contributions to indoor inhalation and non-dietary ingestion exposures.
  - 60-90% via air
- Current soil sampling strategies (sieve < 150 µm) may not be adequate to assess these risks
  - 89% of particles on hands <60 µm
  - Most soil contaminants are more concentrated in smaller soil size fractions

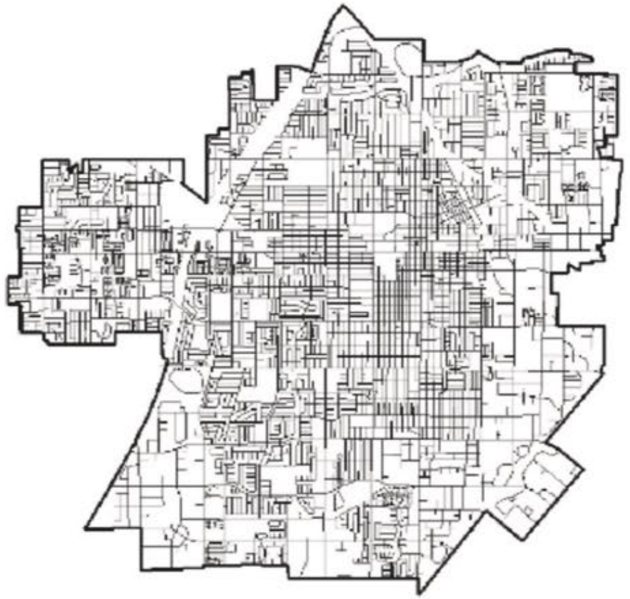
Layton and Beamer, ES&T (2009)
Beamer et al., JEM (2012)

Funded by AZ TRIF and EPA STAR 84020101

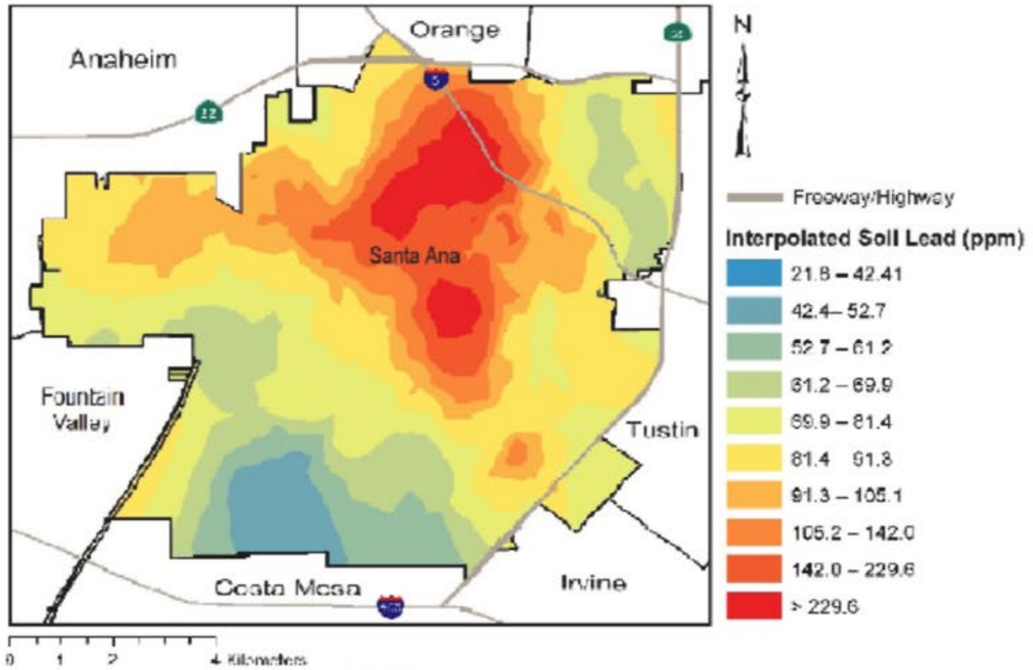
Loh et al., Environ Res (2016) and Beamer et al., IJERPH (2016)



1931



2020

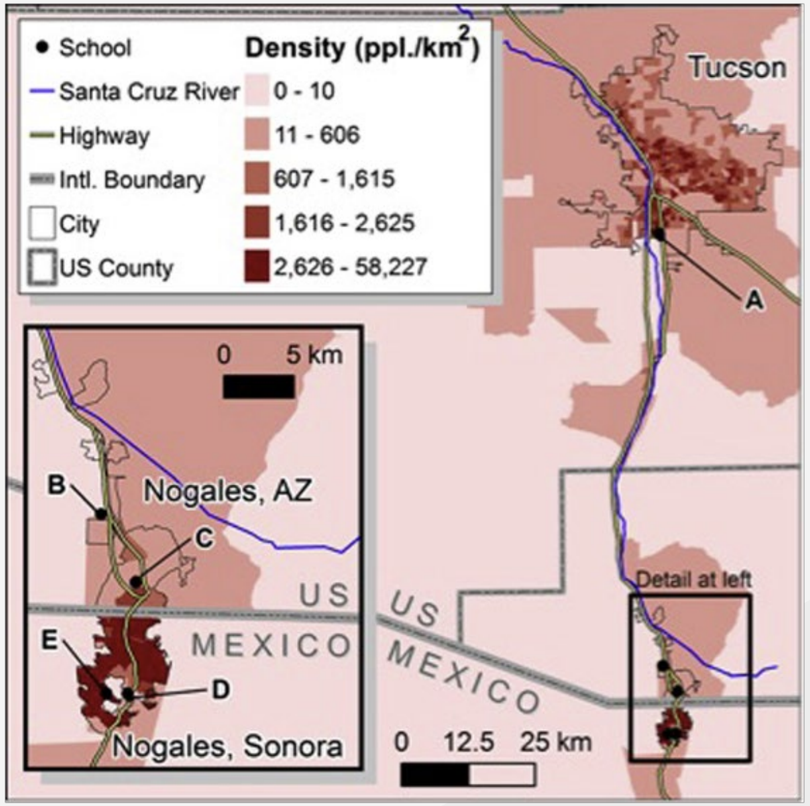


2018

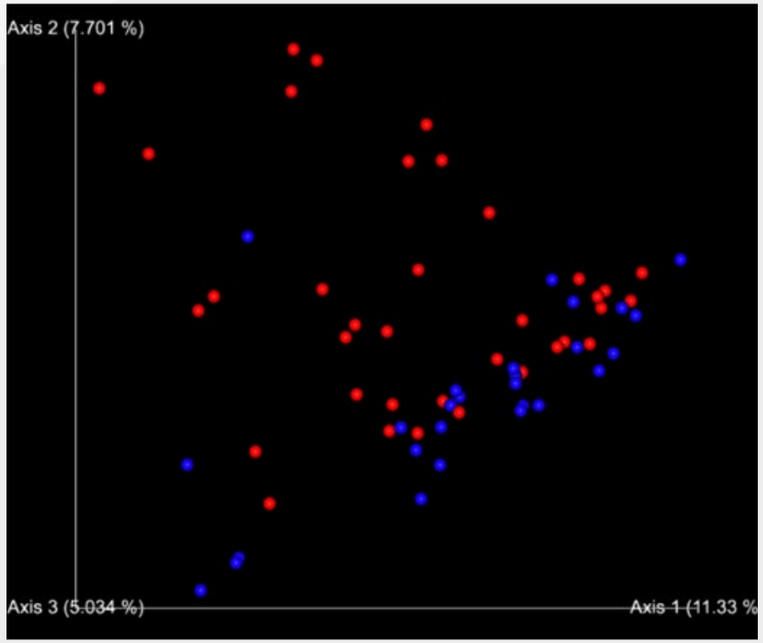
Rubio et al., Environ Res (2022)


EMERGENCY

OPPORTUNITY #3 : CONSIDER CUMULATIVE IMPACTS



	Asthma, ever	
School	**OR (95% CI)**	***P* value**
Tucson, Ariz		
A	4.89 (2.72-8.80)	<.001
Nogales, Ariz		
B	3.47 (1.88-6.42)	<.001
C	4.13 (1.78-9.60)	.001
Nogales, Sonora		
D	1.36 (0.68-2.71)	.32
E	ref	ref
P value	<.0001	



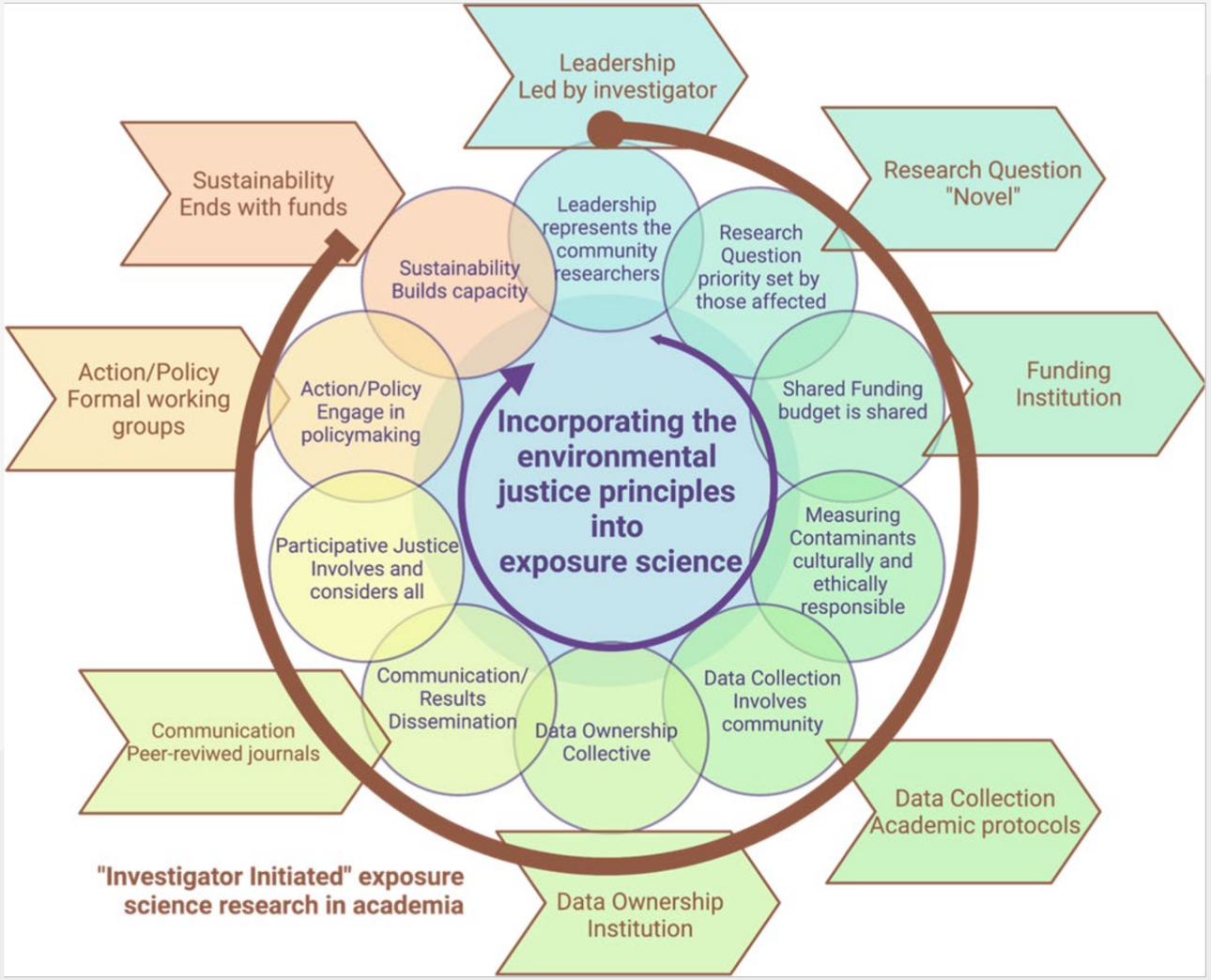
US Mexico

BEAMS
CROSSING BORDERS TO PREVENT ASTHMA
CRUZANDO FRONTERAS PARA PREVENIR EL ASMA

Carr et al., JACI In Practice (2017), Benton et al. in Preparation

Funded byP01 AI148104

OPPORTUNITY #4 : REDEFINE RESEARCH APPROACH



Van Horne et al., JESEE (2022)

THANK YOU

pbeamer@arizona.edu