JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

Diversity and Inclusion in OSH Research

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Land Acknowledgement

We humbly acknowledge that Johns Hopkins University is located on the traditional and contemporary homelands of indigenous peoples. Our campus resides on unceded lands of the Piscataway and Susquehannock peoples. We recognize the enduring presence of more than 7,000 indigenous peoples in Baltimore City, including the Piscataway, Lumbee, and Eastern Band of Cherokee community members. As we gather from places across the country and globe, we honor and recognize indigenous people of our homelands.

Together, we acknowledge the history of genocide and ongoing systemic inequities while respecting treaties made on this territory as a step towards reconciliation and strengthening relationships with indigenous peoples. We give thanks to the past, present and future stewards of this land and respect all tribal nation's sovereignty and right to self-determination. We aim to hold ourselves and the university community accountable to tribal nations.

DEI in Occupational Research

How do we define diversity, equity and inclusion in research?

How do we reach underrepresented populations in the conduct of research?

How do we grow diversity in the research workforce?

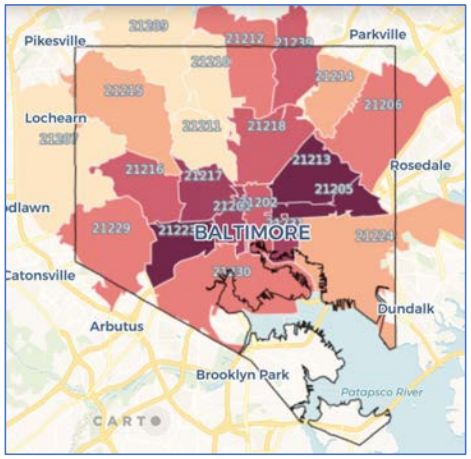
Johns Hopkins POE CENTER Total Worker Health

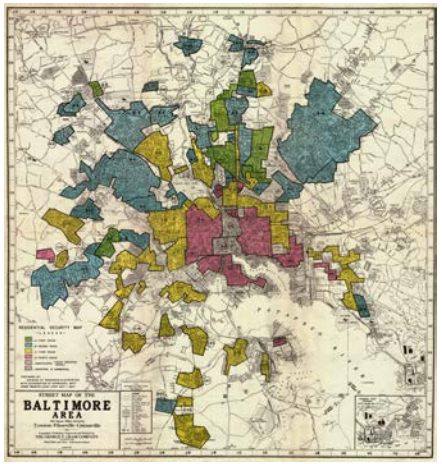
Background: Legacy of Bethlehem Steel

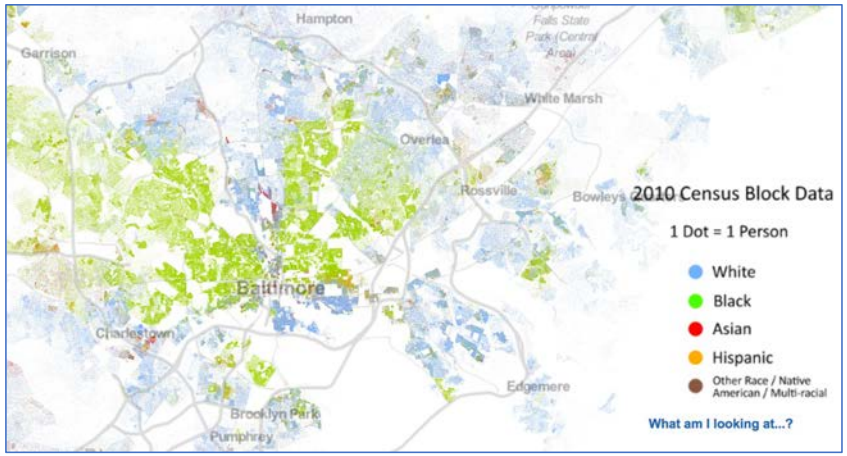
Images: *Baltimore Sun*

Community Context

- Community-based research
- Inner-city Baltimore:
  - Legacy of disinvestment







Maps: Asthma rates, via Capital News Service; Residential Security Map, via Sheridan Library; Racial Dot Map – virginia.edu (2010 Census)
Image: npr.org

Community-based Research

Journal of Asthma

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/ijas20

Comprehensive home environmental intervention did not reduce allergen concentrations or controller medication requirements among children in Baltimore

Torie L. Grant, Meredith C. McCormack, Roger D. Peng, Corinne A. Keet, Ana M. Rule, Meghan F. Davis, Michelle Newman, Susan Balcer-Whaley & Elizabeth C. Matsui

Effect of home exposure to *Staphylococcus aureus* on asthma in adolescents

Contents lists available at ScienceDirect

International Journal of Hygiene and Environmental Health

journal homepage: www.elsevier.com/locate/ijheh

School environmental conditions and links to academic performance and absenteeism in urban, mid-Atlantic public schools

J.D. Berman[a,*,1], M.C. McCormack[b], K.A. Koehler[c], F. Connolly[d], D. Clemons-Erby[c], M.F. Davis[c], C. Gummerson[b], P.J. Leaf[e], T.D. Jones[f], F.C. Curriero[a]

Contents lists available at ScienceDirect

Environmental Research

journal homepage: www.elsevier.com/locate/envres

Indoor air quality in inner-city schools and its associations with building characteristics and environmental factors

Ehsan Majd[a], Meredith McCormack[b], Meghan Davis[a], Frank Curriero[a], Jesse Berman[c], Faith Connolly[d], Philip Leaf[e], Ana Rule[a], Timothy Green[a], Dorothy Clemons-Erby[a], Christine Gummerson[b], Kirsten Koehler[a,*]

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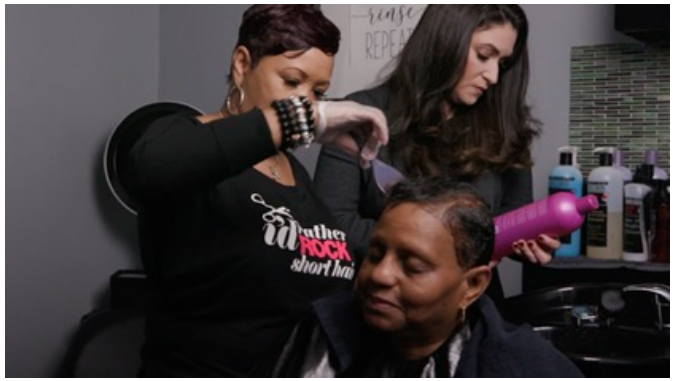
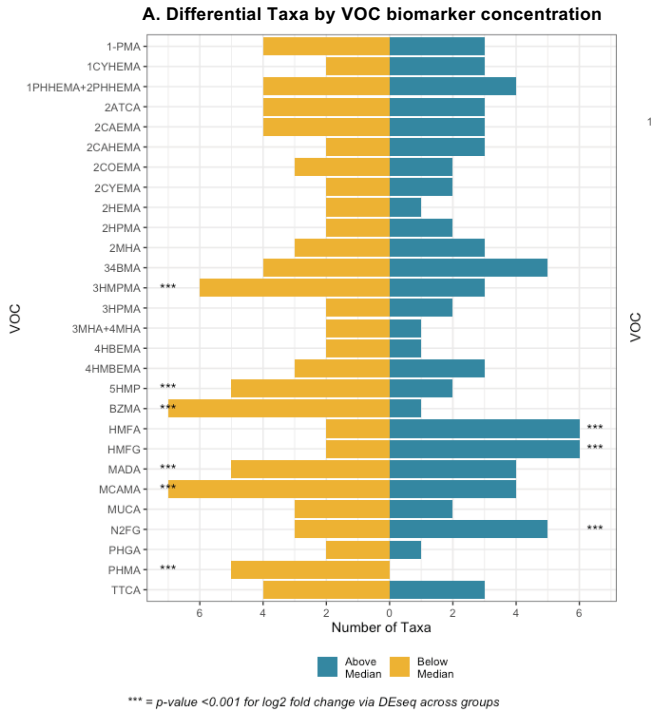
Hairdressers Example

Hairdresser's Study (HAIR)

Goal of the studies—
Main study: Characterize VOC exposures among salon workers serving Black/Latina clients
Substudy: Explore differences in nasal microbial communities by VOC exposures





Manuscript in revision

Johns Hopkins

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Total Worker Health

Lessons Learned from HAIR

- Primarily female workforce coming from different cultural contexts
  - Black v. Latina

Pearls:

- Strive to reflect the diversity of the study population in the research team composition
  - Team: Latina, Black, White

Residual challenges:

- Different products preferred at Black v. Latina salons (difficult to disentangle in analysis)

Lesliam Quirós-Alcalá

with
Lydia Louis, Magdalena Fandino Del Rio, & Kathryn Dalton

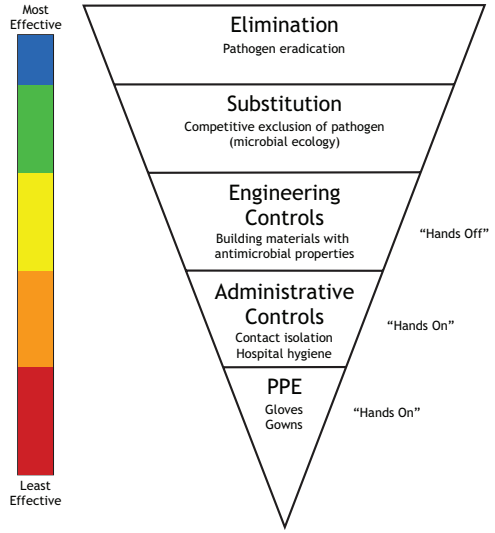
Human and Animal HCW Examples

Animal Assisted Intervention Programs (AAI)

Goal of the studies—

Main study: Infection control strategies for hospital-based AAI programs

Substudy: Qualitative study to explore use of AAI as wellbeing support for healthcare workers



AAI Worker: "We know that if our staff are happier and less stressed, that our patients are as well, that carries over to better patient care."

HCW: "I can't remember a time when a particularly difficult day has coincided with a dog being available for me to go visit. It's not like I get to choose the pet therapy over my work."

AAI Worker: "I found that if I'm walking the dog around the unit, a lot of the staff feel like I'm taking the dog away from their patient."

Dalton *ARIC* 2020;
Dalton *People & Animals* 2021

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Lessons Learned from AAI-Qualitative (AAIQ)

- Workforce difficult to reach
  - Competing obligations on time (pre-COVID)
  - Professionally diverse

Pearls:

- Research team flexibility (mode and timing of interview)
- Gentle persistence

Residual challenges:

- Low diversity based on report of race/ethnicity

Kathryn Dalton

Veterinary and Animal Care Workers

Goal of the studies—

Main study: Veterinary and animal care workers' response to the COVID-19 pandemic

Substudy: Compare mental health responses among Black persons and People of Color to White people

	Burnout	Abusive Clients	Overworked / Long Hours	Stress
White	98 (15.3%)	200 (31.3%)	133 (20.8%)	215 (33.7%)
Non-White	8 (16.0%)	12 (24.0%)	7 (14.0%)	16 (32.0%)
Prefer Not to Say	1 (4.55%)	8 (36.4%)	5 (22.7%)	5 (22.7%)
Total	107	220	145	236

Table 1. Job and Demographic Characteristics (N = 1,577)

Characteristics	*n (%)*
Job role	
Small animal medicine veterinarian	600 (38)
Small animal medicine technician/assistant	496 (32)
Small animal medicine support staff	77 (5)
Medicine – other veterinarian	80 (5)
Medicine – other technician/assistant	0 (0)
Medicine – other support staff	3 (0)
Animal shelter/control	122 (8)
Zoo/wildlife	47 (3)
Other[a]	129 (8)
Time in job, years	
Minimum	0
Median (IQR)	5 (2 to 12)
Maximum	46
Leadership role	
Yes	895 (57)
Age, years	
Under 40 years	816 (52)
40 years or older	755 (48)
Prefer not to say	4 (0)
Gender	
Male	156 (10)
Female	1,395 (89)
Other/prefer not to say	23 (1)

[a]Laboratory animal, industry, government, academia, or other professions.
Abbreviations: IQR, interquartile range.

Dalton *Health Security* 2022

Lessons Learned from CoVET

Kaitlin Waite
with
Jasmine Randale
Kathryn Dalton

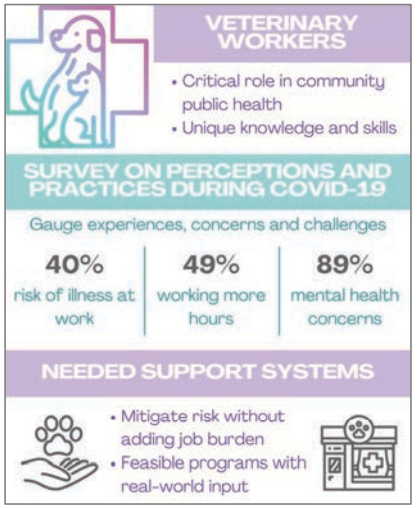
- Low-diversity workforce
  - Most identify as White and female
- Online study with convenience sampling
- Begun while lock-down measures still in place

Pearls:

- Social media outreach to enrich participation under-represented groups
- Followed up with research findings

Residual challenges:

- Likely bias against older, large-animal/rural VACWs
- Small BIPOC sample despite efforts (data analysis perspective)



Infographic: K. Dalton

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Agricultural Workforce Examples

Hog Worker Studies

Goal: Assess microbial exposures

Reported in the past week	At least one respiratory symptom[a] Obs. (groups)	OR (95% CI)
Any hot or dusty barn conditions[c]	225 (31)	4.0 (1.4–12)
Conducted any pesticide application or cleaning activity[d]	229 (31)	3.0 (1.2–7.5)
Administered pigs medicine or shots[e]	223 (30)	6.8 (1.8–25)
Two or three of the above categories[f]	215 (30)	10 (2.2–46)
Used any PPE[g]	226 (31)	0.3 (0.1–1.5)
Washed hands at least 8 times per shift[h]	228 (31)	0.3 (0.1–0.8)

Coffman *AJIM* 2021

Lessons Learned from Hog Workers

- Migrant workforce
  - Language barriers
  - Intimidation/Retaliation

Pearls:
- Proxy sampling for personal airborne assessment
- REACH partnership (CBPR)

Residual challenges:
- Poor linkage to worksite (worker confidentiality)

Thanks to Chris Heaney & team,
Ana Rule & team,
Jill Stewart & team
REACH (Devon Hall)

Dairy Worker Pilot

Goal: Assess microbial exposures

Lessons Learned from Dairy Workers

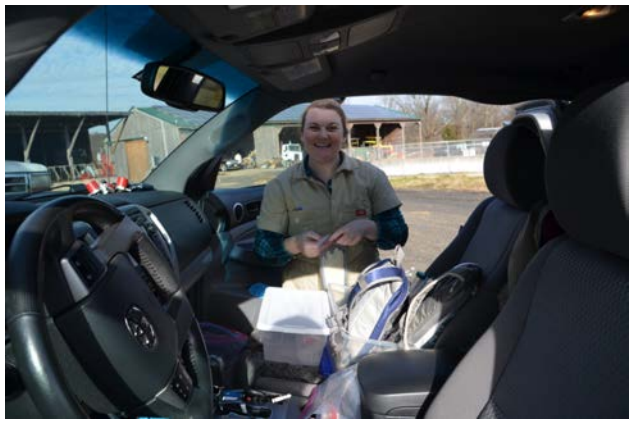
- Workforce difficult to reach
  - Competing obligations on time (pre-COVID)
  - Location (rural)

Pearls:

- Research team knowledge of farms, animal behavior
- Partnership with trusted entity (NEC)

Residual challenges:

- Low diversity based on report of race/ethnicity
- For adult-adolescent worker pairs, few farms available



Thanks to the NEC/NYCAMH team!