

# Adopting a Community Science Model of Team Science for Addressing Environmental Inequities

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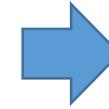
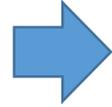
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*Ms. Arlene Sparks, Community Based Organization Partners, Dare2Dream*

# Problem: Multiple Crises in Flint, MI



- Democracy Crisis (EM Law)
- Water Crisis (more than just lead)
- Public Health Crisis
- Scientific and Public Narrative Crisis

# Scholarship of Team Science

- The field of team science is emergent (Stokols et al. 2008)
- Studies complex problems using a collaborative and transdisciplinary model (Stokols et al. 2008)
- Requires that researchers invent new science together by exploring research questions at the intersection of their respective fields, conducting joint research projects and ‘developing methodologies that can be used to re-integrate knowledge’” (Gray 2008: S124)
- A team science model is generally used in academic, government, and industrial research settings

# What Counts as Team Science?

- Some scholars define that a team science approach to complex problems consists of projects that have more than 50 investigators and/or research awards greater than five million dollars (Stokols et al. 2008)
- Few would deny that poverty and racial problems in the context of environmental justice struggles are indeed complex, but rarely will even large research teams working on these topics enjoy multimillion-dollar research awards

# Limitations of the Scholarship of Team Science

- The institutional foundation of team science limits the degree to which power can adequately be addressed
- It has yet to make adequate space for incorporating publics as potential team members (Wallerstein et al. In Press)

# Participatory Team Science ≠ CBPR

- Tebes (2018) advances participatory team science, which aims to incorporate members of the public into team science research teams
- Within this approach, teams are said to be both “bridging” between disciplines and “navigating” across differing the worldviews of scientists and publics (Tebes 2018: 14)
- Both value equity, shared power, and public expertise
- In a participatory team science model public stakeholder input **does not** need to be incorporated throughout the entire research process

# CEnR/CBPR

- Community Based Participatory Research (CBPR) works to address power imbalances by promoting real ~~citizen~~ resident power and control over the research process
- Kellogg Community Based Public Health Initiative



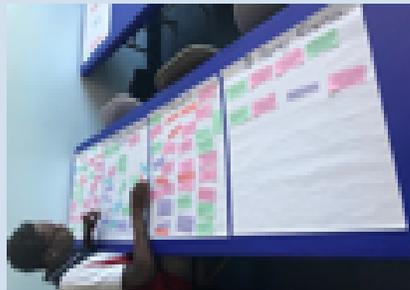
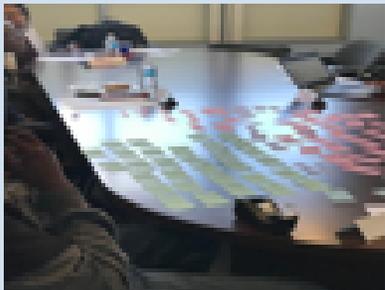
# Overview of Study (Conceptualization/ Implementation)

- Community Narrative Writing Group
- Community Engagement Fellowship
- Listening Tour
- Community-Academic Partnership serving as Consultant and Development/Implementation Team
- Creation of Steering Committee and other Community Leadership Roles
- Mixed Methods, Community Based Participatory Research



# Approach

- **Conceptualization:** Community meetings/events, interviews, Community Narrative Group, content analysis, funding support
- **Implementation:** leadership structure (steering committee, research team), (11) Focus groups, purposive sampling, guide, surveys (demographic/trust), recruitment, data analysis (participant engagement as Ambassadors), coding/themes/synthesis
- **Action Recommendations:** Community input, community-wide dissemination, policy recommendations, Flint-based theory, direction for new research



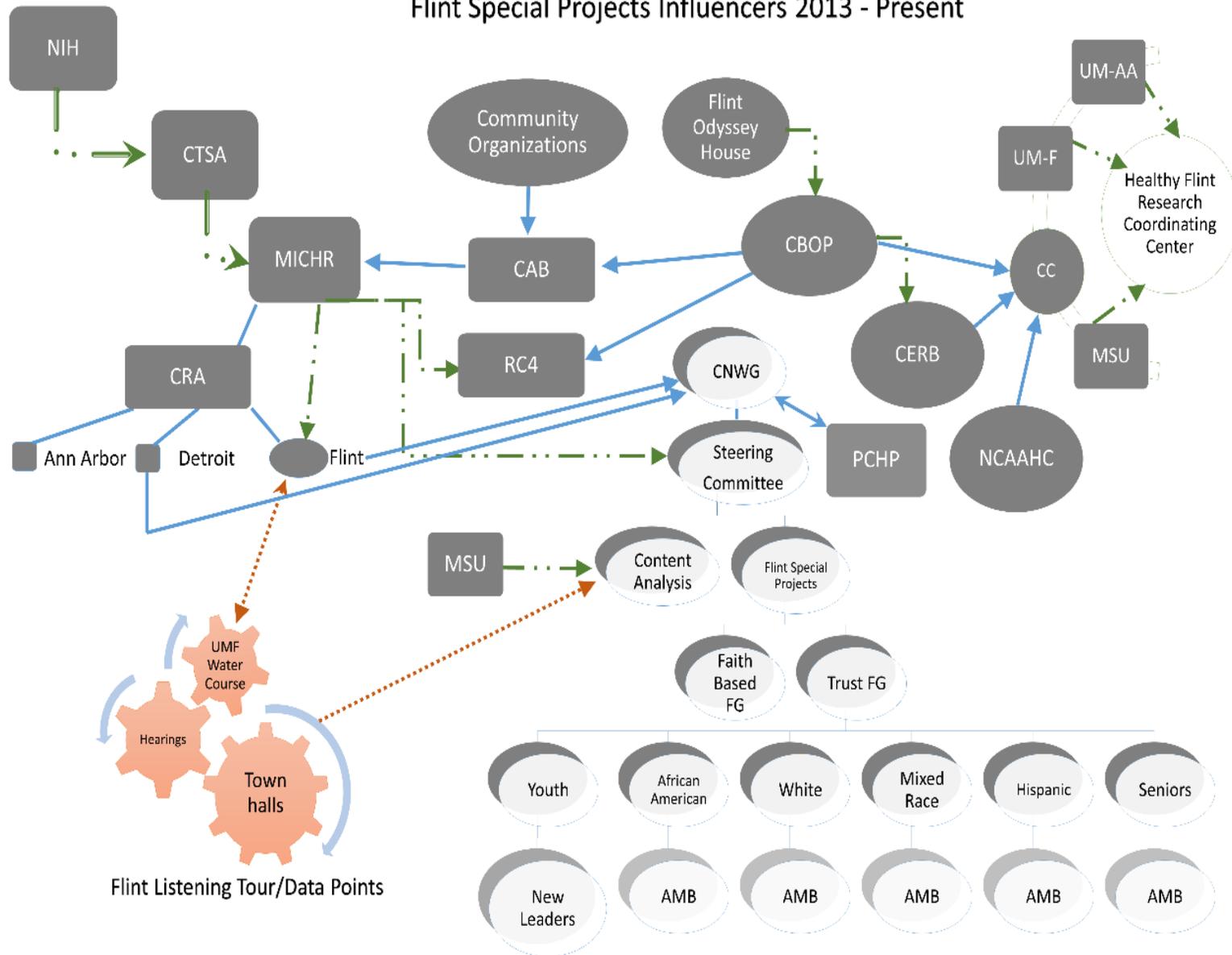
		N in Sample	% in Sample	% in Flint
Gender	Male	73	51.8	48.0
	Female	67	47.5	52.0
	No Response	1	0.7	-
Race	African American	111	76.6	53.9
	White	28	19.3	39.9
	Other	6	4.1	6.2
Employment	Employed	66	50.8	-
	Not Employed	50	38.5	22.2
	Retired	12	9.2	-
	Other	2	1.5	-
Education	Not a HS graduate	41	32.8	16.0
	HS graduate	33	26.4	34.9
	Some college	22	17.6	37.2
	Associates Degree	7	5.6	**
	Certificates	2	1.6	-
	Skilled labor	1	0.8	-
	Bachelor's Degree	9	7.2	11.9
	Advanced Degree	10	8.0	-
Length of Residency	Less than 1 year	4	3.8	-
	1 to 5 years	15	14.2	-
	10 or more years	29	27.4	-
	Lifetime	58	54.7	-

## Characteristics of participants across the focus group projects

Note: \*\* ACS data for "Some college" and "Associates Degree" are combined.

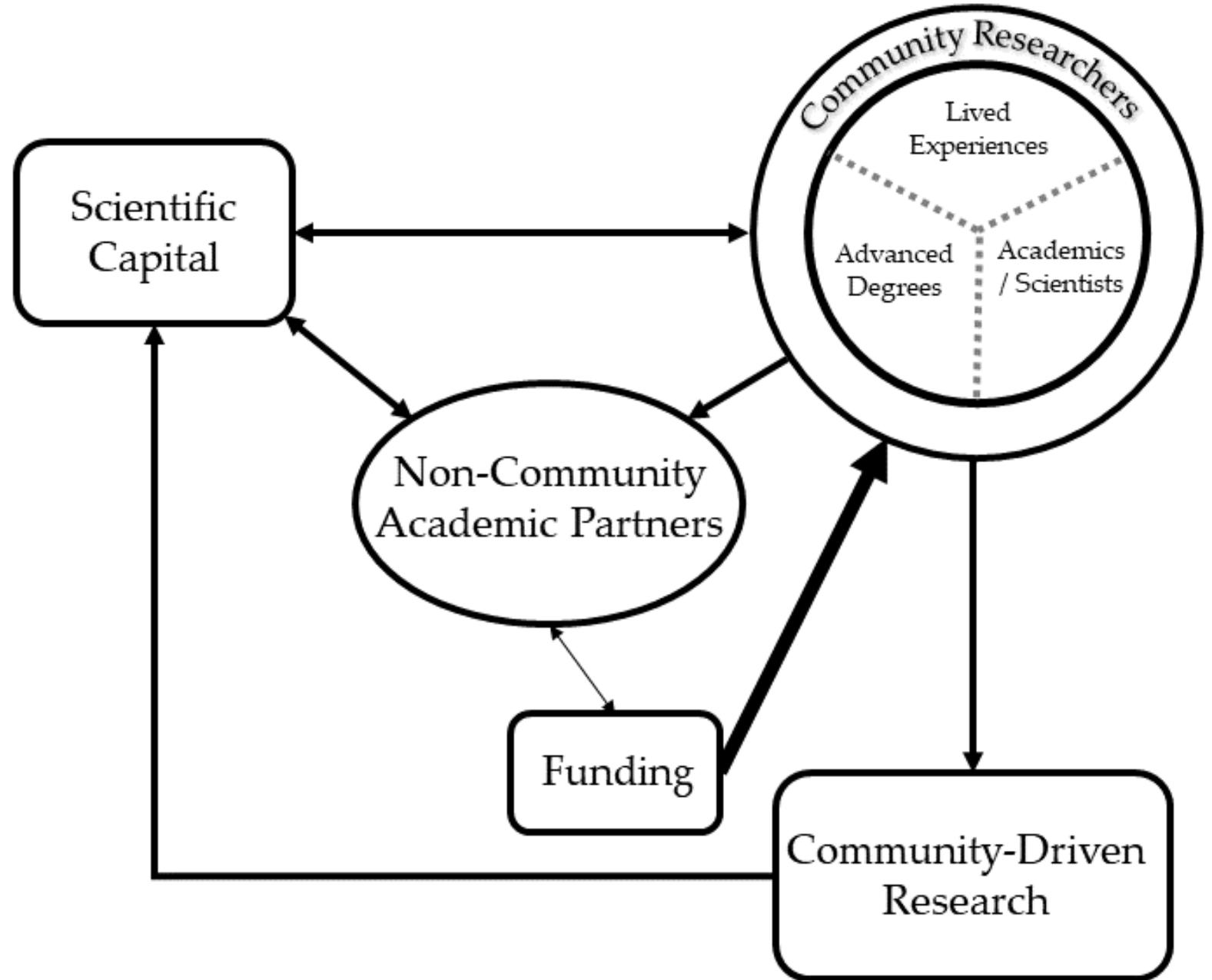
Principle influencers leading to the development and success of the Flint Special Projects research team

### Flint Special Projects Influencers 2013 - Present



Legend:		Flint Entity/Activity
AMB = Ambassadors	CRA = Clinical Research Associate	NIH = National Institutes of Health
CAB = Community Advisory Board	CTSA = Clinical and Translational Science Awards	PCHP = Progress Community Health Partnerships
CBOP = Community Based Organization Partners	FG = Focus Group	UM-AA = University of Michigan – Ann Arbor
CC = Community Core	MICHHR = Michigan Institute for Clinical & Health Research	UM-F = University of Michigan - Flint
CERB = Community Ethics Review Board	MSU = Michigan State University	
CNWG = Community Narrative Writing Group	NCAAHC = National Center of African American Health Consciousness	
	Funding Source =	Data Transfer =
		Connection =

*Community* is the key metric for organizing community-driven research



# Community Science > CBPR

- As a research approach, community science creates a space for theorizing the domain of community-driven research
- While CBPR outlines important principles that draw attention to power between researchers and community members, CBPR does not strive to shift research control entirely to communities
- Instead, CBPR emphasizes equity between researchers and community members, bringing community members to a shared space of decision-making and control.
- CBPR centers academia through an academic/non-academic distinction
- We center community/non-community as the core metric for organizing and understanding community-driven research

# Conclusion

- A critical aspect of resilience for the Flint community is addressing the loss of trust in experts
- Experts failed in their obligation to be objective and concerned about pursuing an ideal of truth as an ethical obligation of science and as a moral obligation of scientists
- In pursuing resilience for Flint residents, scientists must partner with residents to pursue a goal of distributional justice in knowledge production
- We suggest ***community science*** as a mechanism through which trust can be built and/or reconstructed in shared knowledge production

# Thank You

- Research and Community Partners
- Participants
- Flint Community Residents

## Contact

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