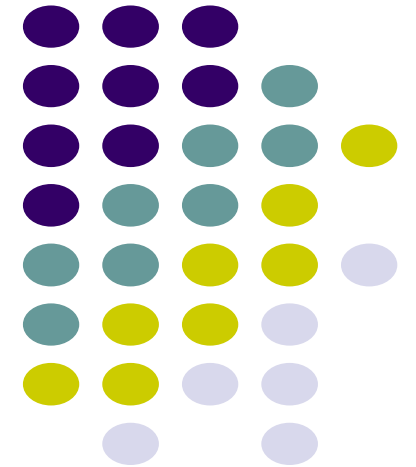


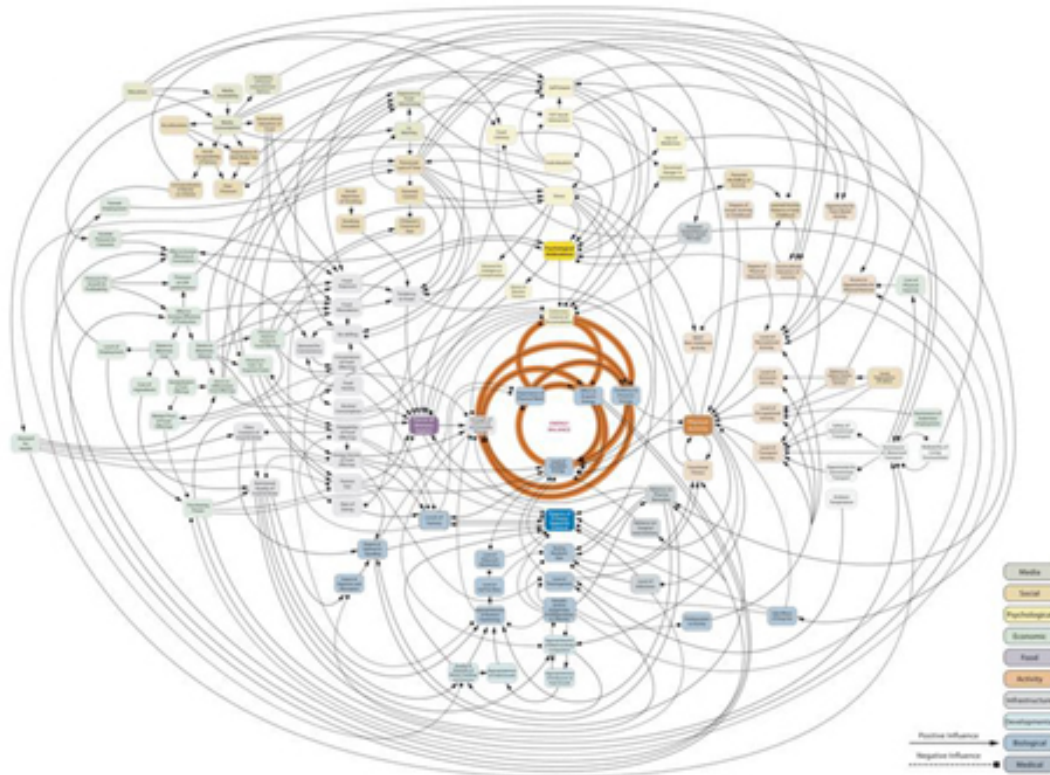
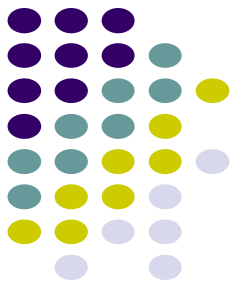
A Systems Science Perspective on Education and Health

Matt Kasman, PhD
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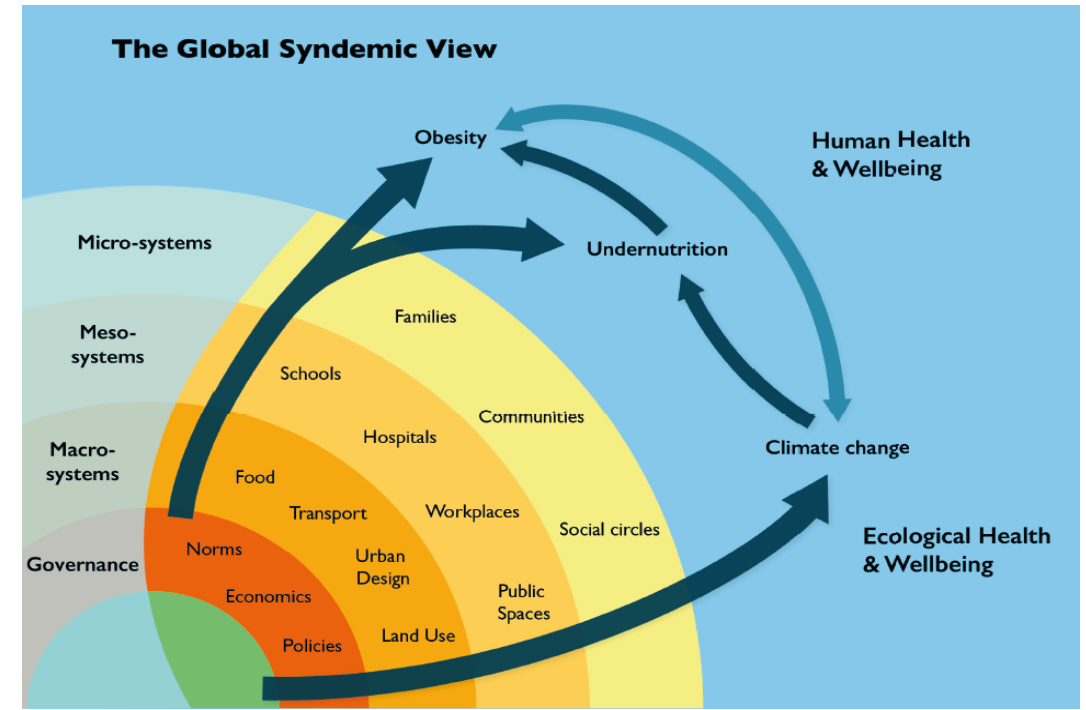


Disclosure: statements in this presentation represent my own views. I have no conflicts of interest related to the issues discussed here.

Health outcomes part of broader systems of social life



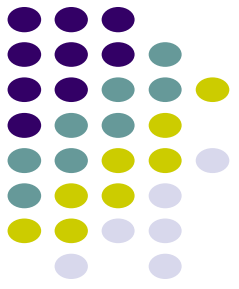
Source: Foresight - Tackling obesity: future choices - http://www.foresight.gov.uk/Obesity/Obesity_final/index.html



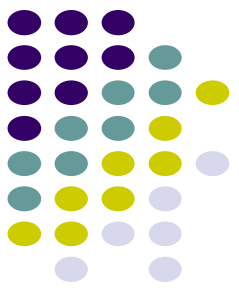
Source: The Global Syndemic of Obesity, Undernutrition, and Climate Change: *The Lancet* Commission report

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(18\)32822-8/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(18)32822-8/fulltext)

Focus on connections between education and health



- Education and health outcomes are linked in three ways
 1. Direct connections between education and health outcomes
 - Effects of educational settings and interactions
 2. Indirect connections between education and health outcomes
 - Effects of educational outcomes (e.g. college attendance)
 3. Health outcomes as a determinant of educational outcomes
 - Ways in which health affects educational attainment
- All three of these can be productively studied using systems science research approaches



Direct effects of education on health

- Example: COMPACT (Childhood Obesity Modeling for Prevention and Community Transformation) collaboration
- Suggestive evidence on how educators can be incorporated in successful childhood obesity prevention efforts
- Opportunity: additional work in this area as well as explorations of influences on additional health outcomes



Original Article

Activating a Community: An Agent-Based Model of Romp & Chomp, a Whole-of-Community Childhood Obesity Intervention

Matt Kasman, Ross A. Hammond, Benjamin Heuberger , Austen Mack-Crane, Rob Purcell, Christina Economos, Boyd Swinburn, Steven Allender, Melanie Nichols

First published: 25 July 2019 | <https://doi.org/10.1002/oby.22553>

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Disclosure: The authors declared no conflict of interest.

[Meta-Analysis](#) > [Child Obes.](#) Nov/Dec 2018;14(8):537-552. doi: 10.1089/chi.2018.0032.

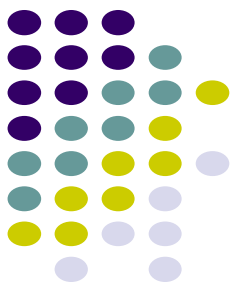
Epub 2018 Sep 6.

Engaging Coalitions in Community-Based Childhood Obesity Prevention Interventions: A Mixed Methods Assessment

Ariella R Korn ¹, Erin Hennessy ¹, Alison Tovar ², Camille Finn ¹, Ross A Hammond ³, Christina D Economos ¹

Affiliations + expand

PMID: 30188181 PMCID: [PMC6249669](#) DOI: [10.1089/chi.2018.0032](https://doi.org/10.1089/chi.2018.0032)



Indirect effects of education on health

- Example: college enrollment
- College attendance affects a number of life outcomes, including health
- Simulation models can provide insight into how programs, policies, and practices determine whether and where people attend college
- Opportunity: additional extension and application of these models, research into other educational outcomes

What Levels of Racial Diversity Can Be Achieved with Socioeconomic-Based Affirmative Action? Evidence from a Simulation Model

Sean F. Reardon
Rachel Baker
Matt Kasman
Daniel Klasik
Joseph B. Townsend

Abstract

This paper investigates to what extent socioeconomic status (SES)-based affirmative action in college admissions can produce racial diversity. Using simulation models, we investigate the racial and socioeconomic distribution of students among colleges under the use of race- or SES-based affirmative action policies, or targeted, race-based recruitment policies. We find, first, that neither SES-based affirmative action nor race-targeted recruiting on their own produce levels of racial diversity achieved by race-based affirmative action. However, the two policies in combination, although likely expensive, may yield racial diversity comparable to race-based affirmative action. Second, the use of affirmative action policies by some colleges reduces the diversity of similar-quality colleges without such policies. Third, the combination of SES-based affirmative action and race recruiting results in fewer academically-overmatched Black and Hispanic students than under race-based affirmative action, but the schools that use both also see a reduction in the academic achievement of enrolled students. © 2018 by the Association for Public Policy Analysis and Management.

INTRODUCTION

In its 2013 *Fisher v. University of Texas at Austin* (Fisher I) decision, the Supreme Court upheld the concept of race-conscious affirmative action but issued a challenge to university administrators and scholars: In order to use race-based affirmative action, they must show "that no workable race-neutral alternatives would produce the educational benefits of diversity" (Fisher v. University of Texas at Austin, 2013, p. 11). After the Fisher case returned in 2015, the Court again emphasized the need for "regular evaluation of data" to ensure "that race plays no greater role than is necessary" (Fisher v. University of Texas at Austin, 2016, p. 11). Both decisions acknowledged that racial diversity is a legitimate goal of public university admissions policies, but the Court expressed skepticism about whether race-based affirmative action policies would continue to be necessary to achieve that goal; this paper answers that question.

It seems clear that no obvious proxy for race could ever fully replicate the racial diversity achieved using race explicitly in the admissions process—such alternative would necessarily be a noisy measure of race and so a less efficient means of selecting a racially diverse set of students. However, in addition to percent plans, there are two potential race-neutral alternative admissions policies that might yield racial diversity at selective universities that have been explored. These are affirmative action based on socioeconomic status (SES) rather than race, and recruitment efforts

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MAY 26, 2020

Data-driven approaches to subsidizing college enrollment costs

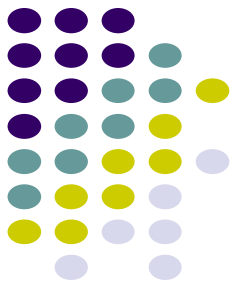
Matt Kasman



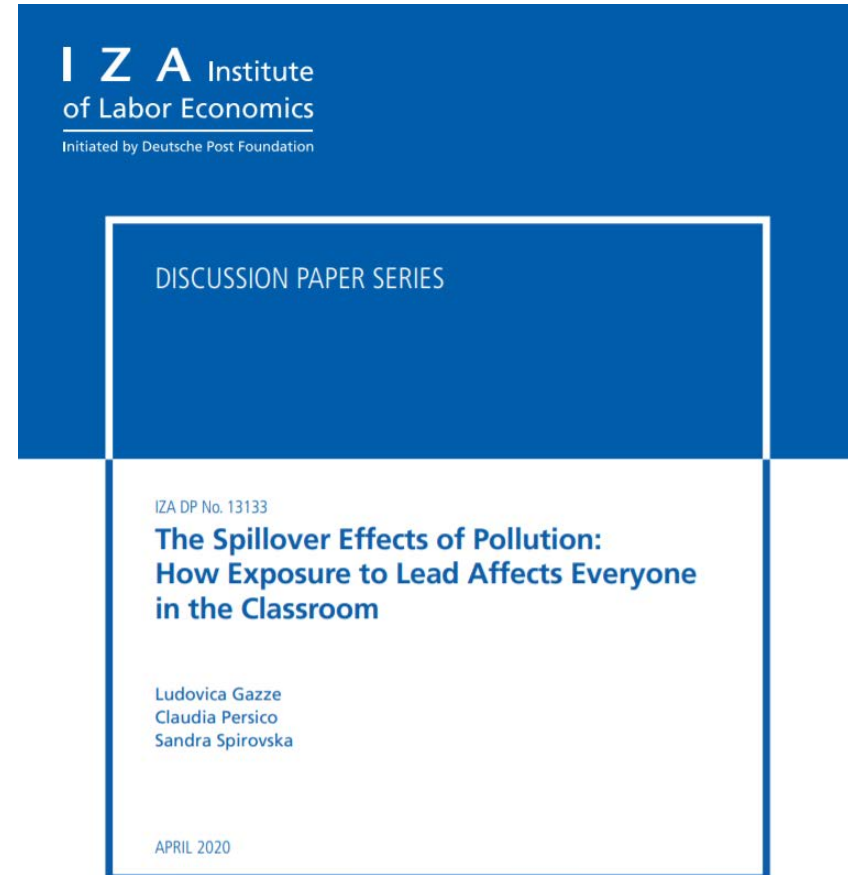
 Download the full brief

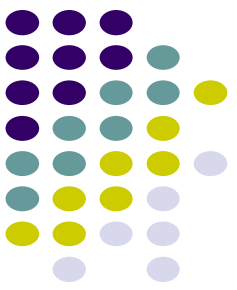


Influence of health on educational outcomes



- Nascent body of research causally linking health and educational outcomes
- Opportunity: as research in this area grows, systems science approaches can help:
 - illuminate key dynamics
 - disentangle interconnected causal mechanisms
 - identify promising policies and interventions





Summary and Next Steps

- Systems science can play a useful role in helping to understand the complex, dynamic relationships between health and educational activities and outcomes
- To facilitate this research we can:
 - Build familiarity with and enthusiasm for using systems science approaches to health and education
 - Increase capacity for systems science research
 - Open formal and informal lines of communication between systems science modelers, researchers, policymakers, intervention experts, and practitioners