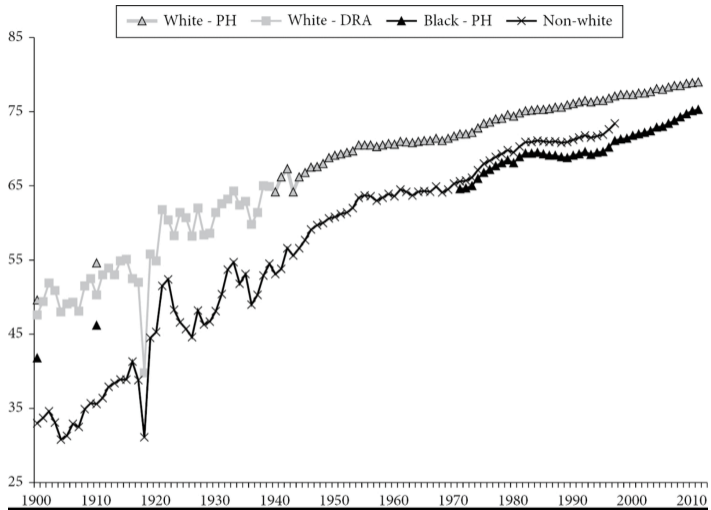


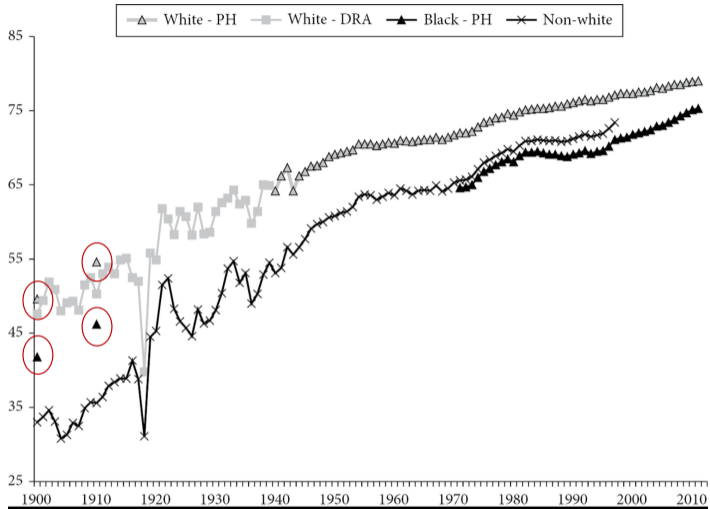
# Racial Health Inequality in Medicine and Economics

Marcella Alsan  
Harvard Kennedy School and NBER

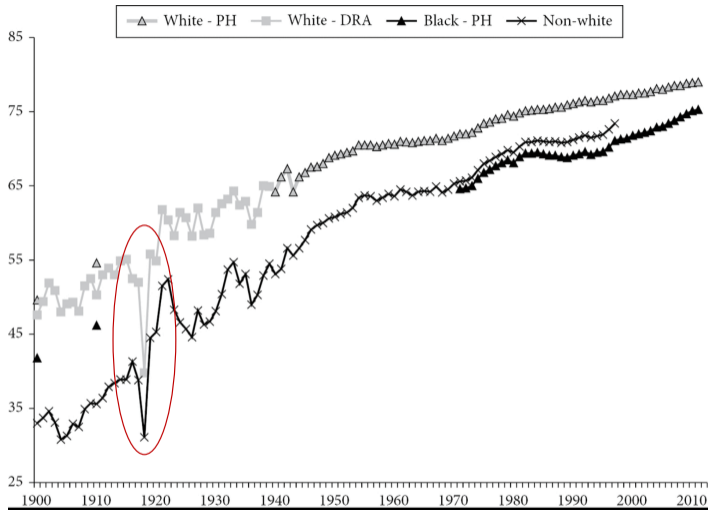
ASHEcon Annual Conference, 2021



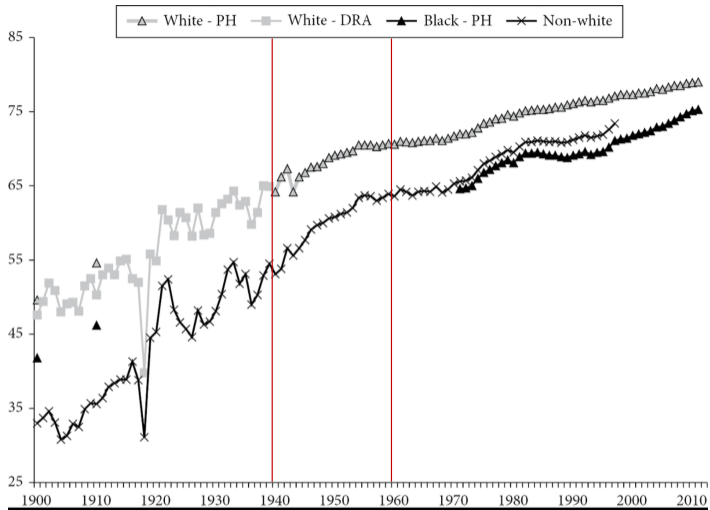
Life Expectancy - Boustan and Margo



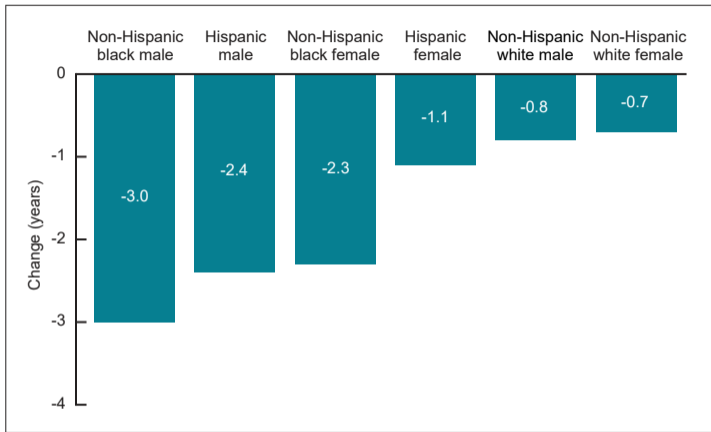
Life Expectancy - Boustan and Margo



Life Expectancy - Boustan and Margo



Life Expectancy - Boustan and Margo



NOTES: Life expectancies for 2019 by Hispanic origin and race are not final estimates; see Technical Notes. Estimates are based on provisional data from January 2020 through June 2020.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality data.

## 2019-20 Change in Life Expectancy - NCHS

# Outline

- ▶ The Conceptualization of Race in Economics and Medicine
- ▶ Historical Connections and Current Challenges
- ▶ Diversity in the Professions
- ▶ Potential Avenues for Research

# Race in Economics and Medicine



Medicine

Economics

- Genetics

## Medicine

- Genetics

## Economics

- Preferences

## Medicine

- Genetics
- Algorithms

## Economics

- Preferences

## Medicine

- Genetics
- Algorithms

## Economics

- Preferences
- Models

## Medicine

- Genetics
- Algorithms

## Economics

- Preferences
- Models

THE  
NEW ORLEANS  
MEDICAL AND SURGICAL JOURNAL.

MAY, 1851.

Part First.

ORIGINAL COMMUNICATIONS.

I.—REPORT ON THE DISEASES AND PHYSICAL PECULIARITIES  
OF THE NEGRO RACE.

By SAMUEL A. CARTWRIGHT, M.D., Chairman of the Committee appointed by the  
Medical Association of Louisiana to report on the above subject.

(Read at the Annual Meeting of the Association, March 18th, 1851.)

*Gentlemen:*—On the part of the Committee, consisting of Doctors  
Copes, Williamson, Browning and myself, to investigate the diseases  
and physical peculiarities of our negro population, we beg leave  
TO REPORT —

## “Peculiarities”

- ▶ “Before going into the peculiarities of their diseases, it’s necessary to glance at the anatomical and physiological differences between the negro and the white man.”
- ▶ “Debasement of the mind... unable to take care of themselves...no letters...no buildings, roads, or improvements, or monuments of any kind are any where found [in Africa] to indicate they have ever been awakened from their apathy and sleepy indolence.”

# Pathologizing inequity



The whip was integral to southern slave life, creating its own raft of health issues, often permanent in nature. (Image courtesy of the Library of Congress Prints and Photographs Division, LC-USZC4-2524.)

- ▶ **Drapetomania** – A mental illness causing those who were enslaved to abscond.
- ▶ **Dysaesthesia aethiopica** – An illness causing insensibility to pain and leading to wanton destruction of property.
- ▶ **Treatment**
  - ▶ for Drapetomania – “experience...was decidedly in favor of whipping them out of it, as a preventive measure.”
  - ▶ for Dysaesthesia aethiopica – “have the patient well washed...slap the oil in with a broad leather strap”

# Racial bias in algorithms

*The NEW ENGLAND JOURNAL of MEDICINE*

## Hidden in Plain Sight — Reconsidering the Use of Race Correction in Clinical Algorithms

Darshali A. Vyas, M.D., Leo G. Eisenstein, M.D., and David S. Jones, M.D., Ph.D.

- ▶ Reviewed the use of race as incorporated into algorithms used to guide treatment in cardiology, nephrology, obstetrics, urology, oncology, endocrinology, and pulmonology.
- ▶ The explicit use of race in algorithms almost invariably makes patients with otherwise similar lab or clinical findings less likely to receive screening, close surveillance, and speedy referrals or interventions if they are Black or Hispanic.
- ▶ Recent work by Obermeyer, Powers, Vogeli, and Mullainathan found even without explicit reference to race, bias in algorithm used to estimate disease severity based on prior costs (which are higher for White patients) leading to more referrals.



# The Conceptualization of Race

## Medicine

- Genetics
- Algorithms

## Economics

- Preferences
- Models

*Journal of Economic Perspectives—Volume 19, Number 4—Fall 2005—Pages 207–224*

## Eugenics and Economics in the Progressive Era

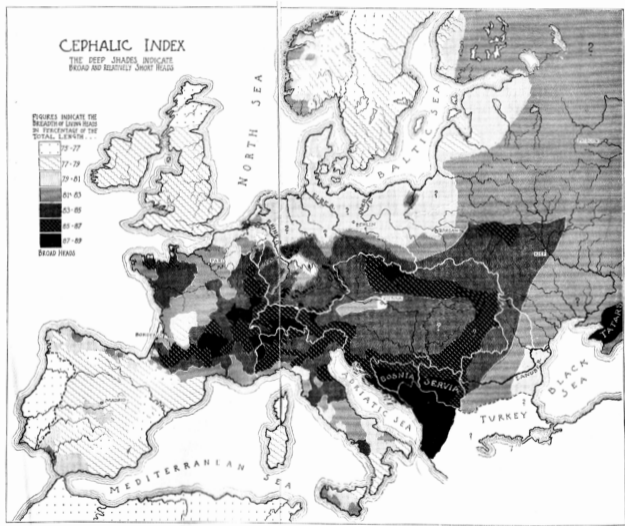
Thomas C. Leonard

- ▶ "We must strain out of the blood of the race more of the taint inherited from a bad and vicious past, before we can eliminate poverty...from our social life. The scientific treatment which is applied to physical diseases must be extended to mental and moral disease, and a wholesome surgery and cautery must be enforced...for the good of all."

– Francis Walker, former president of MIT and the AEA's founding president

# William Z. Ripley

"Races of Europe"



# The mid-20th century: George Stigler (1965)

## The Problem of the Negro



*"The task of our time has been to make the Negro discontented with himself, not with the white man"*

By GEORGE J. STIGLER

The leaders of Negro thought in America have done the members of their race one substantial service and one much greater disservice.

The service was to arouse discontent with the pace at which the social, political, and economic status of the Negro was rising. That the Negro has been becoming wealthier, better educated, more fully enfranchised, and less improperly treated by his white brethren is not seriously arguable. But the disservice still to be served is immense, and no man may say that the year of 1940 or 1950 is the maximum that should be aimed at in raising the Negro's status.

Now is the rising of discontent an easy or an unambiguous act. Long standing loyalties become almost fossilized in their persons, and a consistent and sustained and even dramatic challenge to the loyalties is required. Here will the leaders of the challenge, who disturb the comfortable flow of customary events, be treated with civility or respect—they are indeed deliberate trouble-makers.

The trouble is apparently the threshold of progress. A society does not regard quality, or amount.

Dr. Stigler, a former president of the American Economic Association, is the Charles J. Walgreen Professor of American Institutions at the University of Chicago.

The great disservice of the leaders of Negro opinion was to direct the discontent at the white population. It was proper to demand political rights that only a majority could confer. It was proper to ask the white population to assist in the rise of the Negro—a small though restitution for the unremittable mistakes of the past. But it was a terrible disservice to identify the white man as the main obstacle to the rise of the Negro.

### Wrong Target

It was a disservice because it must lead to hatred, and hatred to violence, and violence to the frustration of the remaining compromise and endurance of the white man. Could the stream of demonstration, growing in size and in audacity, approved or at least tolerated by the political, industrial, and religious leaders of the nation, have any other message for a semi-literate Negro

stranger in a shop, than that evil prejudice of the white man was the fundamental cause of his low status? Was he to be a martyrdom, disappearing unthinkingly the demonstration of the principle of the dignity of all men from the proposition that every lumbago of his life was due to white oppression?

But the disservice was terrible for a more insidious reason. It was false as a guide to improvement. The past is not for us to relive, and no amount of restitution for past injustice by the white man could solve the basic problem of the Negro in America. That problem is that on average he lacks a desire to improve himself, and lacks a willingness to discipline himself to this end. The task of our time has been to make the Negro discontented with himself, not with the white man.

### Educational Needs

Consider education. It would be easy to note a Ph.D. for every young Negro in America—such a handsome restitution for past denial of educational rights! Good educational facilities, better facilities than whites have, are indeed a moral responsibility of the community to the Negro. The real task, however, is to make the Negro discontented with himself, not with the white man.

It would be easy to note a Ph.D. for every young Negro in America—such a handsome restitution for past denial of educational rights! Good educational facilities, better facilities than whites have, are indeed a moral responsibility of the community to the Negro. The real task, however, is to make the Negro discontented with himself, not with the white man.

- ▶ "No amount of restitution for past injustice...could solve the basic problem of the Negro...**that on average he lacks a desire to improve himself, and... a willingness to discipline himself to this end.** The task of our time has been to make the Negro discontented with himself, not with the white man."
- ▶ "The Negro...is excluded from many occupations by the varied barriers the prejudice can raise, and these must and will be struck down. But **he is excluded from more occupations by his own inferiority as a worker, again on average.** Lacking education...a tenacity of purpose...a willingness to work hard, he will not be an object of employers' competition"

# Discrimination models in economics

## Tastes and averages

- ▶ Taste-based and statistical discrimination models aim to understand differences in treatment across groups, conditional on similar economically-relevant attributes
- ▶ Both are from the vantage point of the majority group.
  - ▶ David Williams and colleagues on *Everyday Discrimination Scale and Major Experiences of Discrimination*
- ▶ Latter approach assumes relevant attributes vary across groups.
  - ▶ As Phelps (1972) writes: “[T]he employer who seeks to maximize expected profit will discriminate against blacks or women if he believes them to be **less qualified...on the average than whites and men**, respectively”
- ▶ Omit the importance of implicit or unconscious bias

## Race as exogenous, individuals vs. institutions

- ▶ “Economists...are viewed as the objective scientists, with the tools to identify solutions; presumably absent ‘passion.’ But if you start with a model that **has race as exogenous**, racial differences cannot be objectively approached. The model begins with a fallacy that **assumes racial differences as a natural order.**” – William Spriggs, open letter to economists
- ▶ The models omit the role institutions, culture, and their interactions may have in perpetuating the unequal distribution of the attributes themselves.
- ▶ “A substantial body of evidence suggests that limiting the study of discrimination to the actions of potentially prejudiced individuals dramatically understates the extent to which people experience discrimination...the extent to which discrimination may account for social inequality; and...to which discrimination may play a role in markets for labor, credit, and housing, as well as in other contexts.” – Mario L. Small and Devah Pager (*JEP*, 2020)

# Understanding race as endogenous

Slide adapted from Dr. Chandra Jackson (NIH) and Williams et al. (*Annu. Rev. Public Health*, 2019)

## Race is not a risk factor

Race is primarily the social interpretation of one's phenotype, nationality or ethnicity

## Racism is the risk factor

Racism is a system of structuring opportunity and assigning value based on race

## Racism operates on many levels

- Institutional: processes that are embedded in laws, policies, and practices that support the differential advantage/disadvantage of groups
  - Individual-level: discrimination and micro-aggressions
- Internalized: self-hatred due to your race (e.g., believing and behaving as if you are less than others)

# Historical Connections and Current Challenges

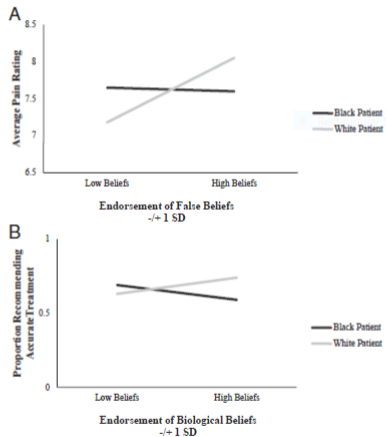


## Medical exploitation and motivated beliefs: Dr. Marion Sims



Dr. Marion Sims - "Father of Gynecology." Statue removed from Central Park, 2018

## (Not) treating pain



- ▶ Interviewed laypeople and medical residents and students. Gave medical students clinical vignettes.
- ▶ 9% of all med students believed that Blacks' nerve endings are less sensitive than Whites (20% among laypeople), translated into differential hypothetical treatment.
- ▶ Meta-analysis of 14 studies in the *American Journal of Emergency Medicine* found that compared to White patients, Black patients were 40% less likely to receive medication to ease acute pain and Hispanic patients were 25% less likely.

# The Tuskegee Study of Untreated Syphilis in the Negro Male

Alsan and Wanamaker (*QJE*, 2018)



- ▶ Used an interacted triple-difference framework to test hypothesis; comparing across race and sex, before versus after the study disclosure, interacted with a measure of geographic proximity to the study site.
- ▶ Find increases in mistrust, lowered utilization and higher mortality from chronic diseases in the years following the disclosure.
- ▶ Explains about 35% of the racial gap in adult male life expectancy in 1980.

# “Beyond Tuskegee”

*The NEW ENGLAND JOURNAL of MEDICINE*

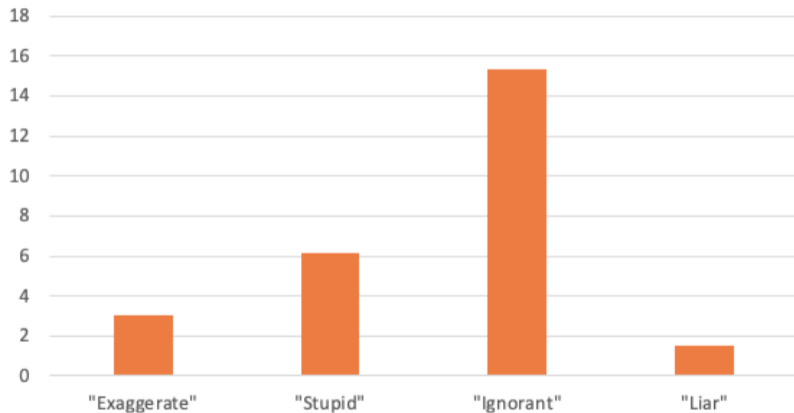
## **Beyond Tuskegee — Vaccine Distrust and Everyday Racism**

Simar Singh Bajaj, and Fatima Cody Stanford, M.D., M.P.H., M.P.A.

- ▶ “Every day, Black Americans have their pain denied, their conditions misdiagnosed, and necessary treatment withheld by physicians. In these moments, those patients are probably not historicizing their frustration by recalling Tuskegee, but rather contemplating how an institution sworn to do no harm has failed them.”

# Physician bias and racial disparities in veteran health

Eli, Logan and Miloucheva (NBER working paper, 2020)



Black-to-white ratio of receiving negative comments from assessing physicians



**JAMA** 

@JAMA\_current



No physician is racist, so how can there be structural racism in health care? An explanation of the idea by doctors for doctors in this user-friendly podcast from the great [@DrKatzNYCHH](#) and [@ehIJAMA!](#)



### Structural Racism for Doctors—What Is It?

Many physicians are skeptical of structural racism, the idea that economic, educational, and other social systems ...

[edhub.ama-assn.org](https://edhub.ama-assn.org)

8:00 AM · Feb 24, 2021 · Sprinklr

# The Great Migration



Family arriving from rural South to Chicago, 1920

Source: Schomburg Center for Research in Black Culture, New York Public Library (1168439)

# Great Migration - educational and income gains

Black et al. (*AER*, 2015)

TABLE 2—EARNINGS (*in 2010 dollars*) AND EDUCATION BY RESIDENCE IN 1970,  
AFRICAN AMERICANS BORN IN THE DEEP SOUTH, 1916–1932

	Men's wage and earnings	Men's total personal income	Men's education	Women's education
<i>Born in Georgia or South Carolina</i>				
Mean for individuals residing in the South	26,684	29,675	6.96	7.98
Coefficient on "residing in the North"	18,214*** (758)	20,150*** (795)	2.05*** (0.11)	1.41*** (0.09)
Observations	5,084	5,084	5,084	6,208
<i>Born in Alabama or Mississippi</i>				
Mean for individuals residing in the South	25,806	29,123	7.22	8.20
Coefficient on "residing in the North"	20,988*** (762)	22,224*** (841)	1.80*** (0.10)	1.47*** (0.09)
Observations	5,023	5,023	5,023	6,142
<i>Born in Louisiana</i>				
Mean for individuals residing in the South	28,359	31,502	7.24	8.19
Coefficient on "residing in the North"	17,931*** (1,304)	19,545*** (1,298)	2.19*** (0.18)	1.98*** (0.16)
Observations	2,143	2,143	2,143	2,513



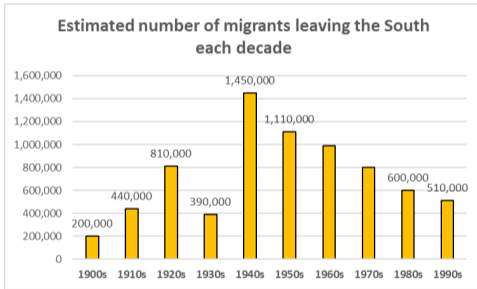
# Great Migration - health losses

Black et al. (*AER*, 2015)

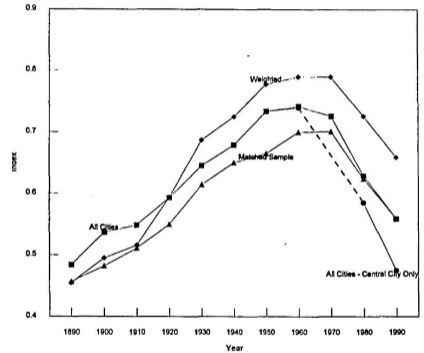
TABLE 4—IMPACT OF LIVING IN THE NORTH ON SURVIVAL TO AGE 70 AND AGE 75 CONDITIONAL ON SURVIVAL TO AGE 65, MEN AND WOMEN BORN IN THE DEEP SOUTH

	Men			Women		
	OLS	IV estimation		OLS	IV estimation	
		First stage	Second stage		First stage	Second stage
	(1)	(2)		(3)	(4)	
<i>Panel A. Survival to age 70</i>						
Mean of the dependent variable	0.825	0.44	0.825	0.898	0.42	0.898
Live in North	0.0033** (0.0016)		-0.071** (0.030)	0.0001 (0.0010)		-0.048*** (0.018)
Born on railroad line		0.050*** (0.0019)			0.060*** (0.0017)	
Observations	364,988	364,988	364,988	463,192	463,192	463,192
<i>Panel B. Survival to age 75</i>						
Mean of the dependent variable	0.631	0.44	0.631	0.768	0.42	0.768
Live in North	0.0050** (0.0020)		-0.070* (0.038)	-0.0016 (0.0021)		-0.123*** (0.030)
Born on railroad line		0.057*** (0.0023)			0.067*** (0.0020)	
Observations	253,254	253,254	253,254	322,125	322,125	322,125

# The Great Migration and segregation



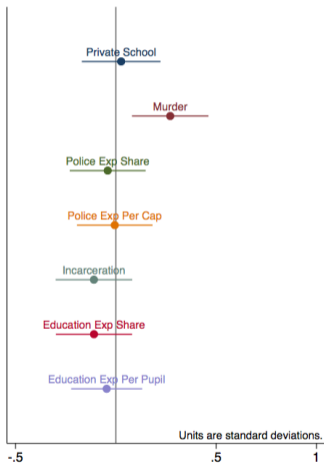
Estimated number of migrants leaving the south (Source: University of Washington America's Great Migrations Project)



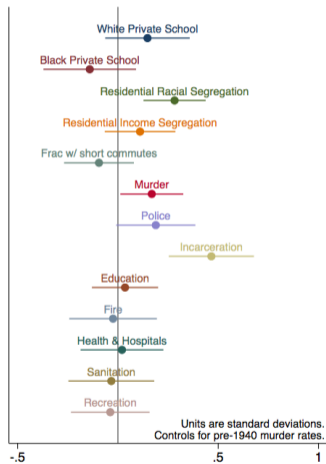
Dissimilarity over time (Source: Cutler et al. (*JPE*, 1999))

# The Great Migration and present-day outcomes

Ellora Derenoncourt (working paper, 2021)



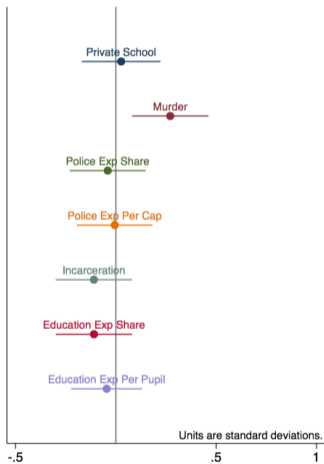
(a) Effects on pre-1940 mechanisms



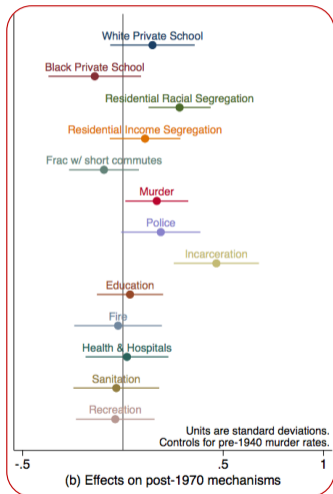
(b) Effects on post-1970 mechanisms

# The Great Migration and present-day outcomes

Ellora Derenoncourt (working paper, 2021)



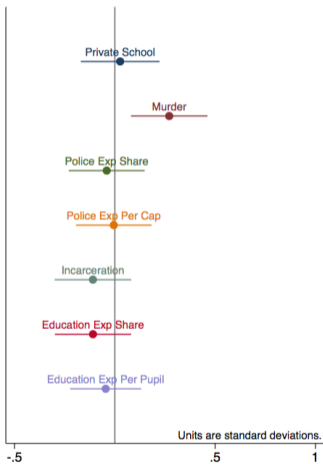
(a) Effects on pre-1940 mechanisms



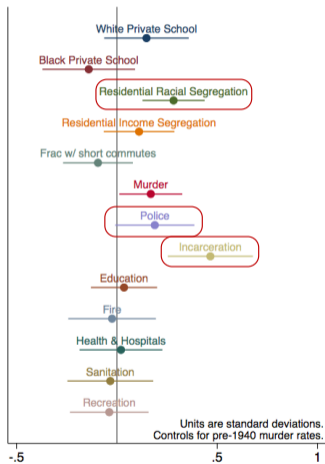
(b) Effects on post-1970 mechanisms

# The Great Migration and present-day outcomes

Ellora Derenoncourt (working paper, 2021)



(a) Effects on pre-1940 mechanisms

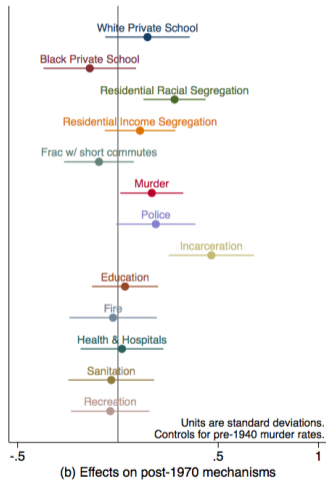
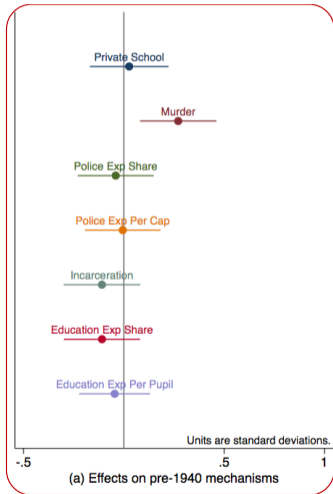


(b) Effects on post-1970 mechanisms

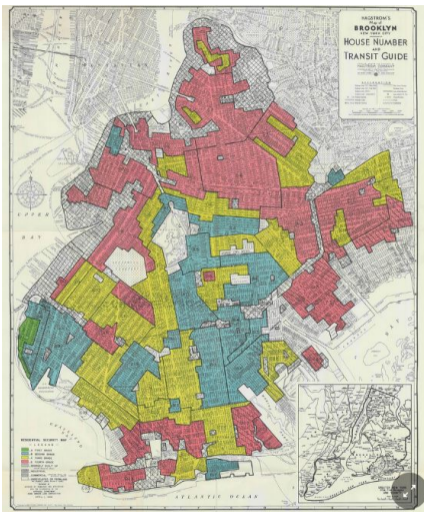
# The Great Migration and present-day outcomes

Ellora Derenoncourt (working paper, 2021)

► Derenoncourt (2021)



# 1930s redlining: federal Home Owners' Loan Corporation (HOLC)



- ▶ Krieger et al. *AJPH* 2020 and *Am. J. Epid* 2020 find that redlining associated with preterm birth in NYC and later cancer diagnosis in Mass.
- ▶ RD study by Aaronson et al. (2021) found that redlining (maps) causally led to higher poverty rates and teenage pregnancies; ongoing work explores effects on child health

"Colored infiltration a definitely adverse influence on neighborhood desirability." - HOLC appraiser in Brooklyn  
Source: *New York Times* Upshot (2017)

## SEGREGATED SPACES, RISKY PLACES:

### The Effects of Racial Segregation on Health Inequalities

THOMAS A. LAVEIST  
DARRELL GASKIN  
ANTONIO J. TRUJILLO

JOINT CENTER FOR POLITICAL AND ECONOMIC STUDIES  
SEPTEMBER 2011

- ▶ “Segregation continues to be a predictor of significant health disparities – as measured by divergent rates of infant mortality – in comparisons between African Americans and whites and between Hispanics and whites.”
- ▶ “After controlling for concentrated poverty, health status advantages for whites were diminished... Thus, to reduce or eliminate racial and ethnic health disparities, policy makers should address the problems associated with concentrated poverty.”



# 13th amendment and the carceral state

▶ Archibong and Obikili (2020)

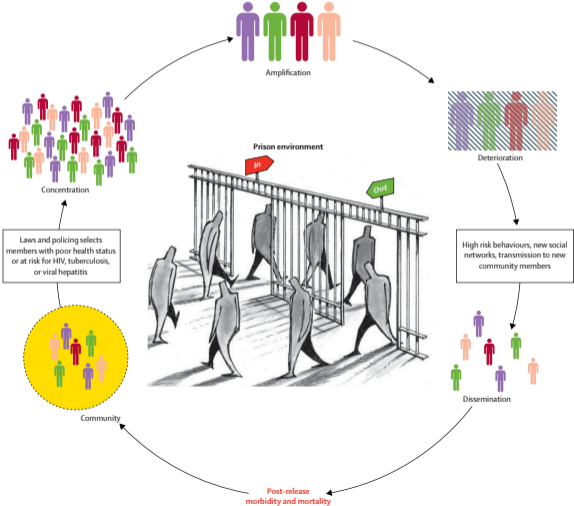


**Mass Incarceration:** 13th amendment freed those enslaved and prohibited slavery, with the exception of slavery as punishment for a crime.

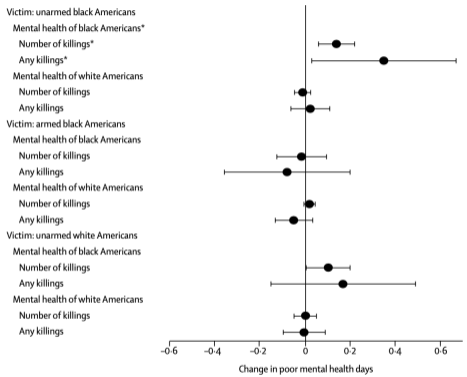
- ▶ Historical patterns whereby prison population responded to reduced supply from outmigration (Myers 1990) or from demand shocks (Archibong and Obikili 2020).
- ▶ Black men are 5.8 times more likely to be in prison than White men, and Black women are 1.8 times more likely to be in prison than White women (Bureau of Justice Statistics 2020)
- ▶ Currently, 10% of Black children have a parent in jail/prison (Morsy and Rothstein 2016).

# Corrections and community health

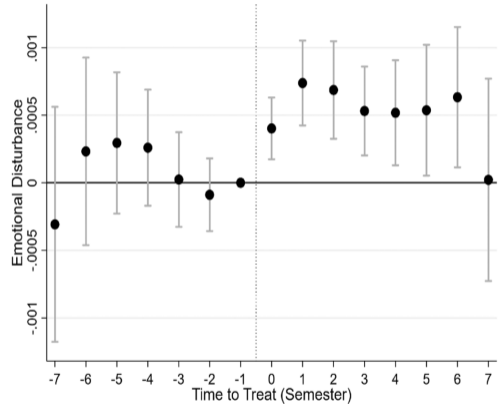
Kamarulzaman et al. (*The Lancet*, 2016)



# Spillover effects of police killings



Changes in poor mental health days by victim and respondent race, Bor, Venkataramani, Williams, and Tsai, (*The Lancet*, 2018)



Effect on emotional disturbance among LA high school students, Ang (*QJE*, 2021)

## Discrimination → biology

Growing evidence that (self-reported) discrimination is associated with:

- ▶ Inflammation (Lewis et al. 2010)
- ▶ Coronary artery calcification (Lewis et al. 2006)
- ▶ Dysregulation in cortisol (Zieders et al. 2014)
- ▶ Carotid intima-media thickness (Troxel et al. 2003)
- ▶ Nighttime blood pressure (Beatty and Matthews 2009)

*"It's as if you're playing the game Jenga... They pull out one piece at a time, at a time, and another piece and another piece, until you sort of collapse"* – Arline Geronimus

Diversity and concluding comments

# Does diversity matter for health?

Alsan, Garrick, Graziani (AER, 2019)



**Recommendation 1: Increase the Racial and Ethnic Diversity of the U.S. Physician Workforce**



The AMA works to increase the number of minority physicians to reflect the diversity of the U.S. population through its policies and advocacy work.

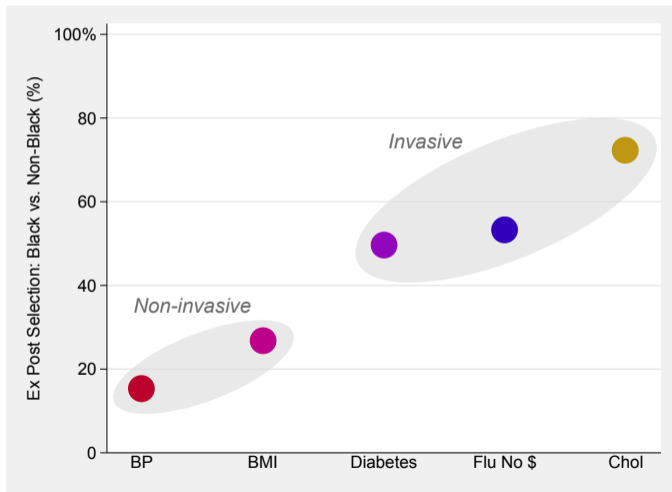


*The healthcare workforce and its ability to deliver quality care for racial and ethnic minorities can be improved substantially by increasing the proportion of underrepresented U.S. racial and ethnic minorities among health professionals.*

- ▶ A study to examine a recommendation of leading medical institutes, to diversify the physician workforce, on health behaviors.
- ▶ Tests whether Black men increase their take-up of preventive care when randomly assigned to a Black vs. non-Black male doctor.
- ▶ Two stages, first to identify if photo alone would lead to preference for specific physician, second stage to test match.

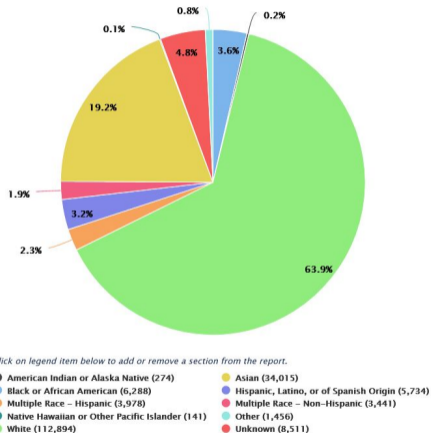
# Effect of Black MD for non-invasive and invasive tests

▶ Flu project overview



# Increasing diversity in medicine

Figure 15. Percentage of full-time U.S. medical school faculty by race/ethnicity, 2018.



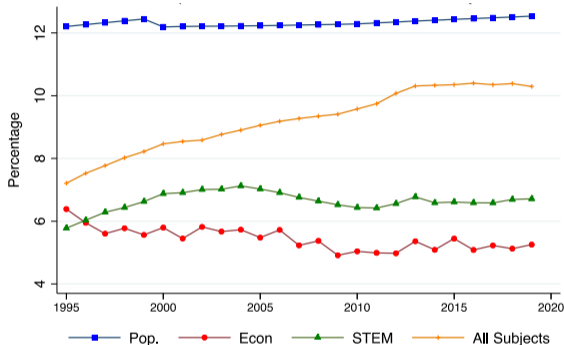
- ▶ Black share of medical school faculty rose from 3.1% in 2003 to 3.6% in 2018
- ▶ Black share of medical school graduates, however, was lower in 2018 (6.2%) than it was in 1995 (6.4%)
- ▶ Fewer Black men matriculated to medical school in 2014 (515) than in 1978 (542)

AAMC Diversity in Medicine (2008, 2019), "Altering the Course: Black Males in Medicine" (2015)



# Increasing diversity in economics

AEA Committee on the Status of Minority Groups in the Economics Profession (2020)



Black share of population and degrees awarded by subject, 1995-2019

- ▶ In 2018-19, Black Americans comprised 2.8% (13), Hispanic Americans 5.8% (27) and Native Americans 0% (0) of Economics PhDs awarded to U.S. citizens/permanent residents.

## Increasing the supply of research

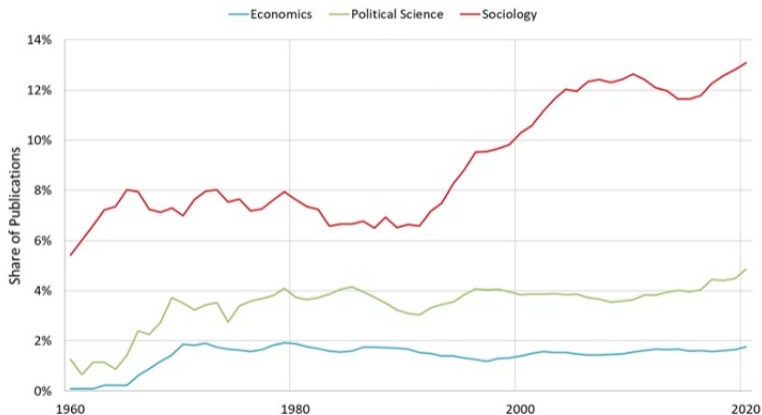
Krieger, Boyd, De Maio, and Maybank (*Health Affairs* blog, 2021)

	<b>BMJ</b>	<b>JAMA</b>	<b>NEJM</b>	<b>The Lancet</b>
Total # of articles, 1990-2020	78,545	40,411	43,378	63,971
Total # of articles that included the word "racism" anywhere in the text	644 0.8%	145 0.4%	109 0.3%	315 0.5%
Total # of articles that included the word "racism" anywhere in the text and were available for analysis	475	141	109	288
Total # of empirical studies	20 4.2%	11 7.8%	4 3.7%	29 10.1%

Share of publications mentioning racism anywhere in the text, 1990-2020

# Increasing the supply of research

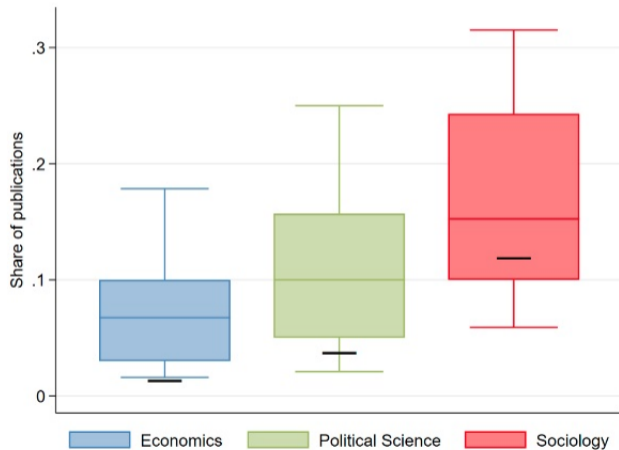
Advani, Ash, Cai, and Rasul (2021)



Share of publications that are race-related, by year and discipline

# Increasing the supply of research

Advani, Ash, Cai, and Rasul (2021)



Economists' estimated shares of race-related research vs. actual shares

## Some next steps

- ▶ Theorists: Incorporating the role of institutions, motivated beliefs and the perspectives of disadvantaged groups in economic models of discrimination
- ▶ Metrics: unit and item non-response of surveys, churn and censoring of claims/EMR data, potential bias of data elements filtered through providers; multiple levels of analysis, correct scale
- ▶ Applied:
  - ▶ Supply side, finance/incentivize equity
  - ▶ Health beyond medical care
- ▶ All: increase grant funding, professorships, and publications?

## On the determinants of racial health inequality

# BLACK MAN IN A WHITE COAT



**A DOCTOR'S REFLECTIONS  
ON RACE AND MEDICINE**

DAMON TWEEDY, M.D.

“When I started medical school and learned about the health outcomes that afflicted black people, I had assumed these differences were chiefly due to genetics. To be sure, there are diseases, such as sickle-cell anemia, lupus and sarcoid, which appear to preferentially target black patients at a biological level. But what had become abundantly clear during my years in medical school and as a doctor, however, were the many ways that **social and economic factors** influence health, and more than anything else, account for the sickness and suffering I have seen.”

Thank you

Additional resources: <https://www.aeaweb.org/about-aea/committees/csmgep>

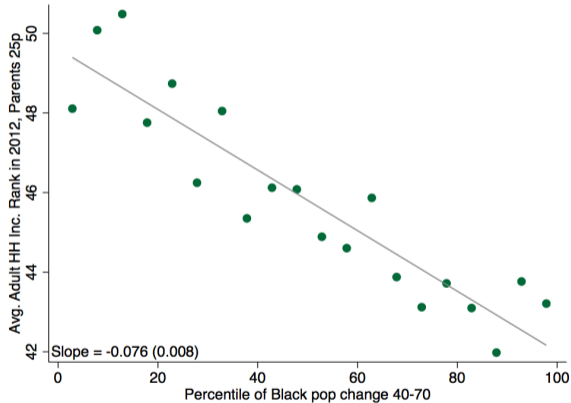
# Appendix Slides



# The Great Migration and Present-day Outcomes

Ellora Derenoncourt (working paper, 2021)

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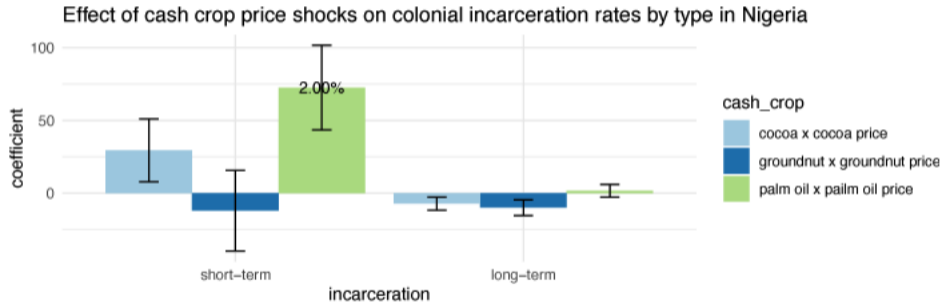


1940-70 Black population change and 2012 upward mobility

# Economic Incentives and Incarceration Rates

Archibong and Obikili (working paper, 2020)

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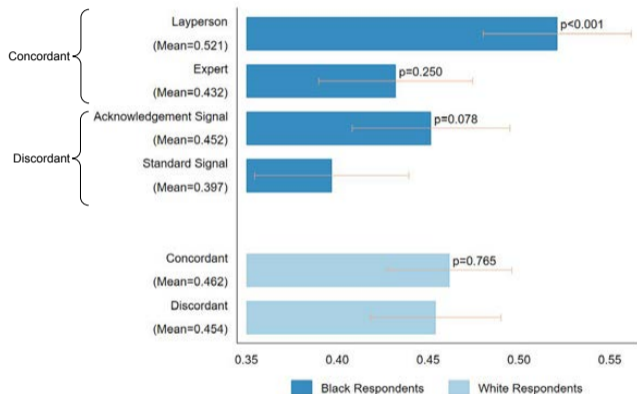


Cash Crop Prices and Incarceration Rates in Colonial Nigeria

# Follow-up work on race-concordance

Alsan and Eichmeyer (NBER working paper, 2021)

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Willingness to Takeup COVID-19 Vaccine by Sender and Signal Arm