



November 6-9, 2022

Hilton Minneapolis

Minneapolis, Minnesota

ANNUAL MEETING

CHALLENGES AND TIPS FOR RESEARCHING DEI TOPICS

November 8, 2022

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Antitrust Notice

- The Casualty Actuarial Society is committed to adhering strictly to the letter and spirit of the antitrust laws. Seminars conducted under the auspices of the CAS are designed solely to provide a forum for the expression of various points of view on topics described in the programs or agendas for such meetings.
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- It is the responsibility of all seminar participants to be aware of antitrust regulations, to prevent any written or verbal discussions that appear to violate these laws, and to adhere in every respect to the CAS antitrust compliance policy.



Agenda

- Introductions
- SIR DEI Committee Approaches
- CAS Race and Insurance Pricing Research Initiative
- SOA Research Institute: DEI Research
- Discussion and Next Steps



SIR: Framing the Challenges



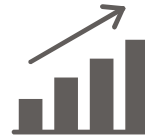
Awareness & Buy-in

Talent:
Practitioners &
Pipelining

Data Access &
Implementation



Baselining,
resource development,
partnership creation



Diversifying inputs
diversifies outputs



Promoting Industry-
wide Action

Where Are You Going, Where Have You Been



Awareness & Buy-in

Talent: Practitioners & Pipelining

Data Access & Implementation



Baselining,
resource development,
partnership creation

- Stakeholder surveying
- Overlay with best practices
- Drive value and credible action
- Empower more open discourse
- Identify content and talent gaps to build partnerships

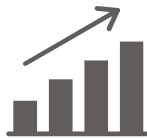
As Good as It Gets, or Better?



Awareness & Buy-in

**Talent:
Practitioners &
Pipelining**

Data Access &
Implementation



Diversifying inputs
diversifies outputs

- Appetite for diverse perspectives
- Authentic relationships & talent sources
- The many benefits of bridging into academia
- Who has the opportunity to influence the process?
- The very meaning of innovation

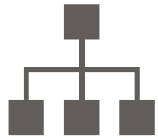
The Chicken and the Egg



Awareness & Buy-in

Talent:
Practitioners &
Pipelining

Data Access &
Implementation



Promoting Industry-
wide Action

- Cost-benefit analysis of admitting change is needed vs implementing the change
- Eschewing “close to the vest” thinking while respecting proprietary information
- Who has the opportunity to influence implementation?
- Collective action to effect change



CAS Race and Insurance Pricing Research

Mallika Bender, FCAS, MAAA

Staff Actuary – Diversity, Equity & Inclusion

Casualty Actuarial Society

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Where Does DEI Research Fit at CAS?

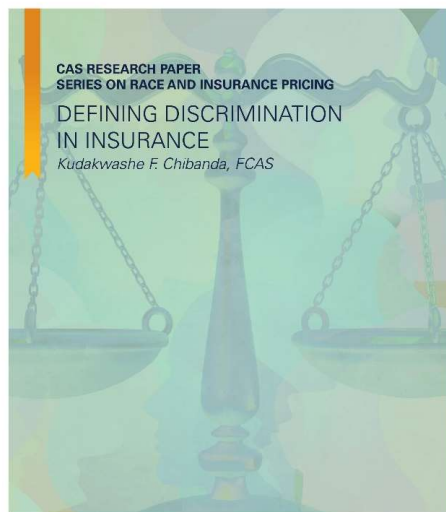
- Phase 1 – DEI Research managed by DEI Staff Actuary and Board DEI Committee, with input from Research Actuary (Staff) and VP Research (Volunteer)
 - Pro – volunteers and staff were highly familiar with the issues being researched
 - Cons – informal processes that could have been managed with more structure
- Phase 2 – DEI Research managed by DEI Staff Actuary within CAS Research Council led by Research Actuary and VP Research
 - Benefit from formal process and structure, while maintaining direct connection to DEI Committee



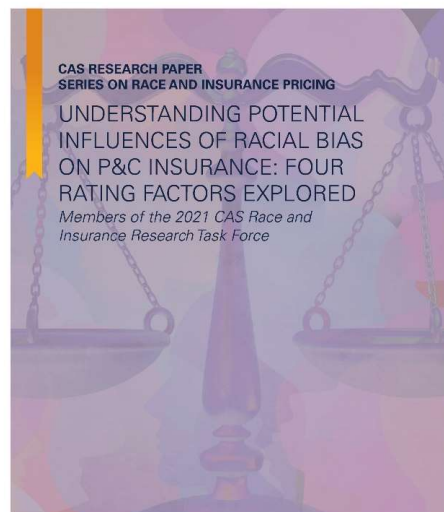


CAS Research Series on Race and Insurance Pricing

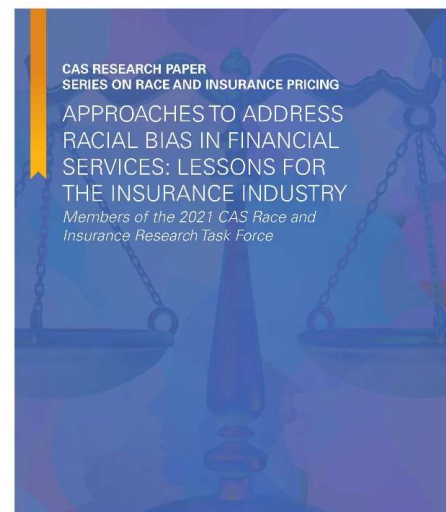
<https://www.casact.org/publications-research/research/research-paper-series-race-and-insurance-pricing>



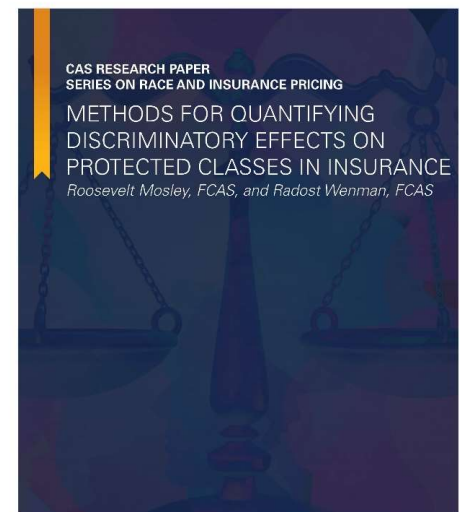
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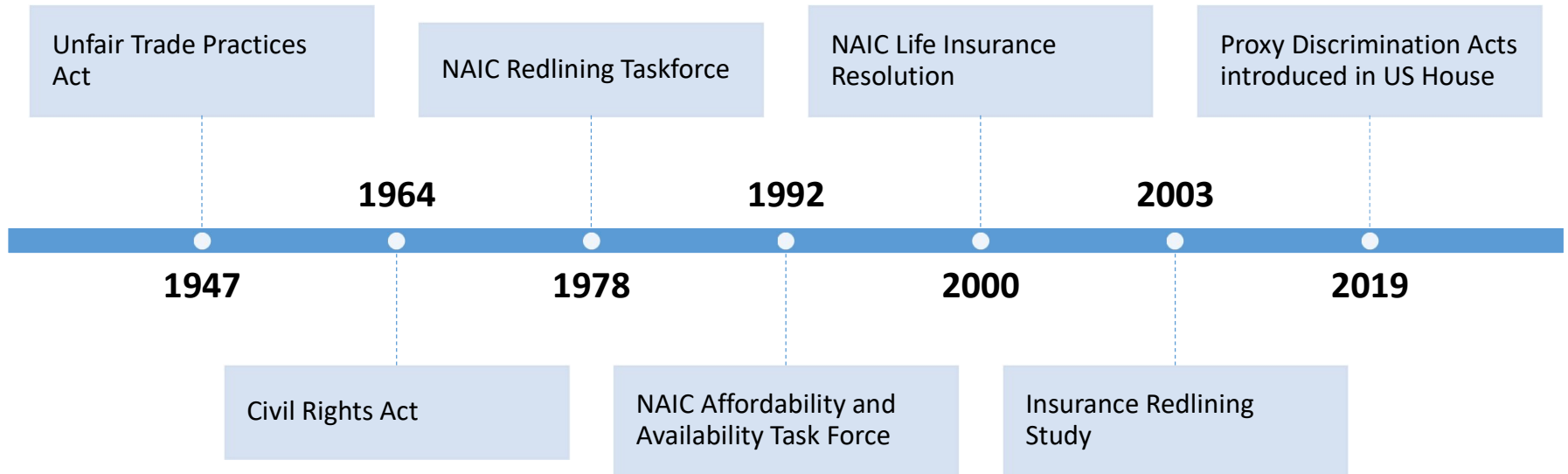
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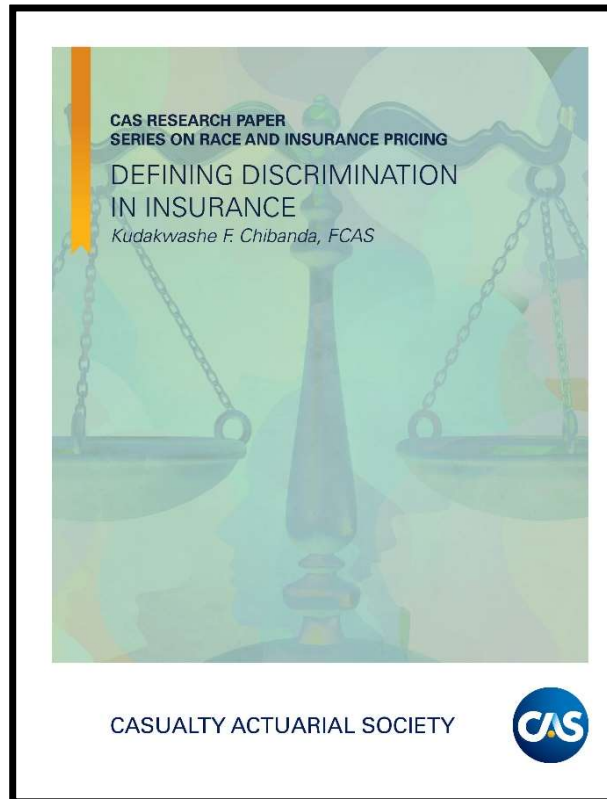
Race – A Recurring Focus in the US



Source: NAIC – Milestones in Racial Discrimination within the Insurance Sector; August 2020
https://content.naic.org/sites/default/files/inline-files/HistoricalContextOutline_Final_0.pdf



Defining Discrimination in Insurance



Author: Kudakwashe Chibanda, FCAS

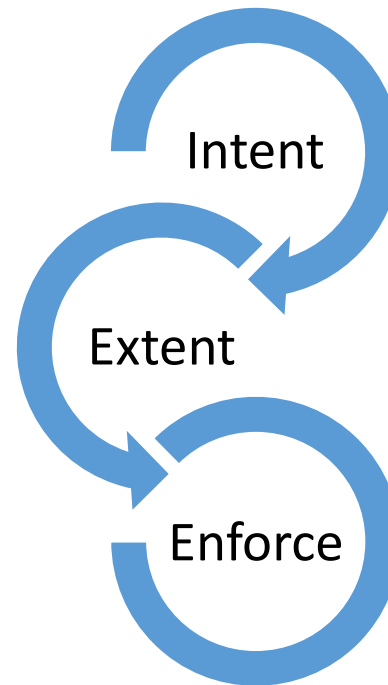
Purpose: To provide clarity on new and old terminology being used in insurance industry discussions on racial bias.



Defining Discrimination in Insurance

Report explores history, context, definitions and inconsistencies in usage of common terms.

- Protected Class
- **Unfair Discrimination**
- **Proxy discrimination**
- Disparate impact
- Disparate treatment
- Disproportionate impact

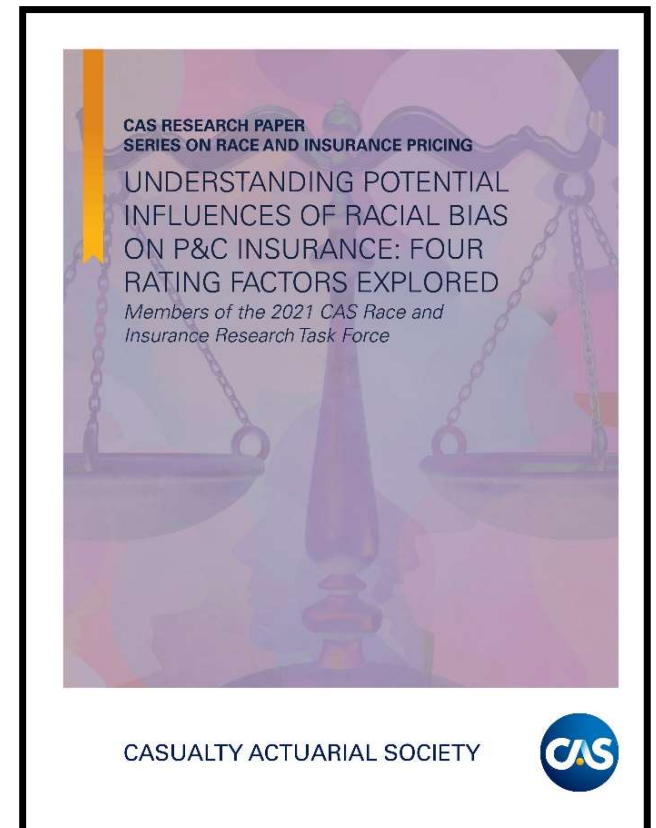




Understanding Potential Influences of Racial Bias on P&C Insurance: Four Rating Factors Explored

Authors: 2021 CAS Race and Insurance Research Task Force

Purpose: Explore the impacts of racially biased policies and practices outside of the system of insurance as it relates to commonly used insurance rating factors.





Understanding Potential Influences of Racial Bias on P&C Insurance: Four Rating Factors Explored

- Credit-Based Insurance Scores
- Geographical Location
- Homeownership
- Motor Vehicle Records

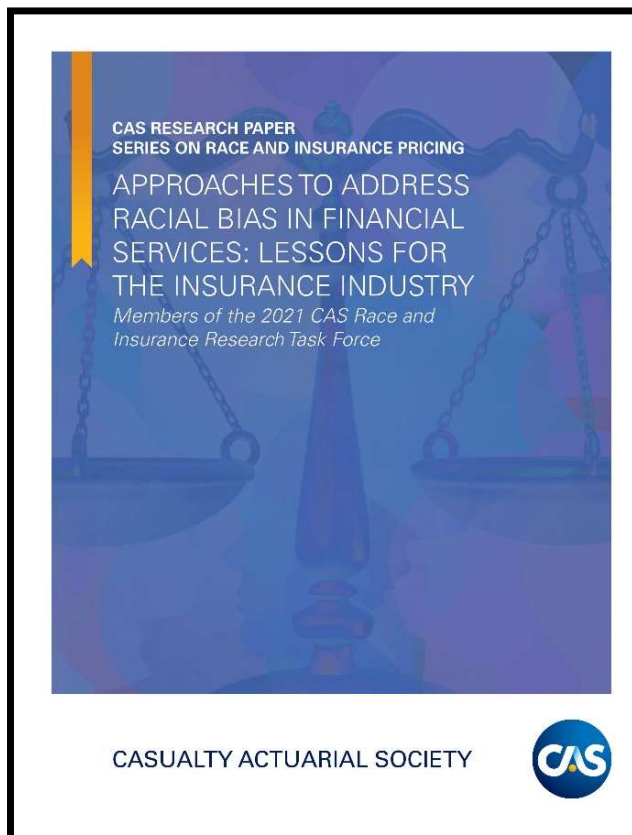
Lending
Discrimination

Segregation

Pre-Textual
Traffic Stops



Approaches to Address Racial Bias in Financial Services: Lessons for the Insurance Industry



By: 2021 CAS Race and Insurance Research Task Force

Purpose: Learn from solutions implemented in (non-insurance) financial services sectors to address racial bias.





Approaches to Address Racial Bias in Financial Services: Lessons for the Insurance Industry

- Mortgage Lending
- Personal Lending
- Commercial Lending
- Credit Scoring System

Government
Intervention

Bias Testing &
Monitoring

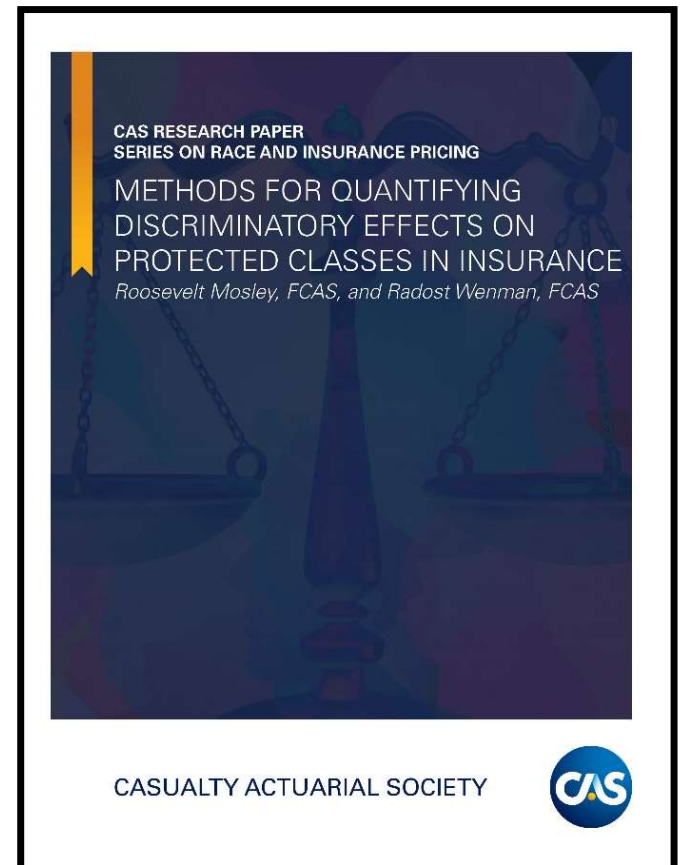
New Product
Innovation



Methods for Quantifying Discriminatory Effects on Protected Classes in Insurance

By: Roosevelt Mosley, FCAS & Radost Wenman, FCAS

Purpose: Encourage discussions about potential algorithmic bias in insurance and explore methods to identify, measure, and mitigate bias in predictive models.





Methods for Quantifying Discriminatory Effects on Protected Classes in Insurance

- Fairness Definitions in Modeling
 - Demographic Parity / Independence
 - Equal Opportunity / Separation
 - Calibration / Sufficiency
- Bias Mitigation Techniques
 - Pre-processing / Inputs
 - In-Processing / Modeling
 - Post-Processing / Predictions



<https://www.casact.org/publications-research/research/research-paper-series-race-and-insurance-pricing>

QUESTIONS?



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SOA Research Institute DEI Research

Lisa Schilling, FSA, EA, FCA, MAAA



Strategic Research Programs and Research Topics



Innovation & Technology
Highlights the evolution of technology as it applies to the actuarial profession and industry.



Aging and Retirement
Focuses on understanding aging and its impact on retirement risks and retirement plan issues.



Catastrophe and Climate
Studies the impact of catastrophic events, changing climate patterns and events.



Diversity, Equity and Inclusion
Explores issues unique to various dimensions of population diversity on industry-relevant topics.



Health Care Cost Trends
Focuses on the forces that shape health care cost, use and changes over time.



Mortality and Longevity
Mortality experience, improvement, & predictions; population mortality, socioeconomic drivers of mortality.

Anatomy of a Research Project



Avoiding Unfair Bias in Insurance Applications of Artificial Intelligence

Outlines a framework for avoiding or mitigating risks of unfair bias when developing insurance industry AI models.

Developed from interviews with industry leaders on this topic.

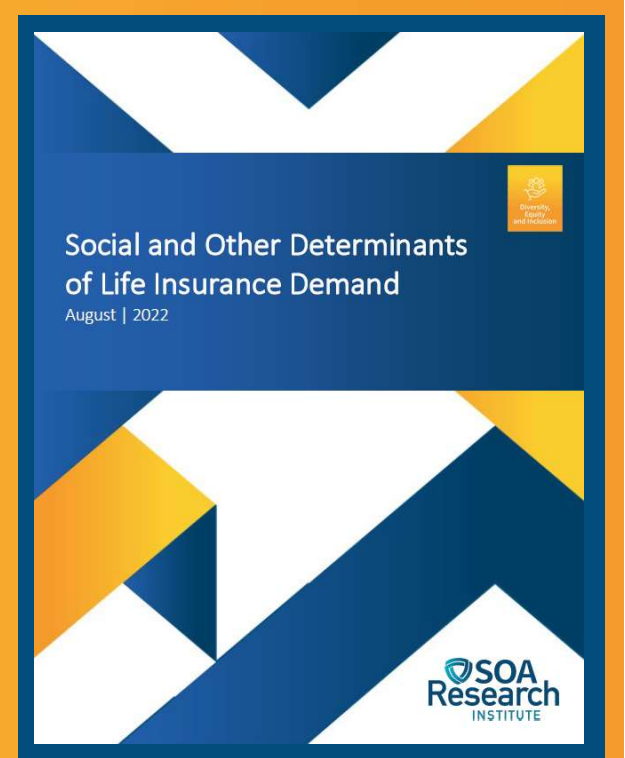
<https://www.soa.org/resources/research-reports/2022/avoid-unfair-bias-ai/>



Social and Other Determinants of Life Insurance Demand

Uses multi-scale geographically weighted regression to explore 19 variables for correlation to life insurance premium purchase.

<https://www.soa.org/resources/research-reports/2022/determinants-life-insurance/>



Interactions of Health Care Rating Factors with Race, Ethnicity and Socioeconomic Factors

Explores whether tobacco, area, and industry rating factors in one state may be reflecting unintended factors such as race, ethnicity, or socioeconomic status.

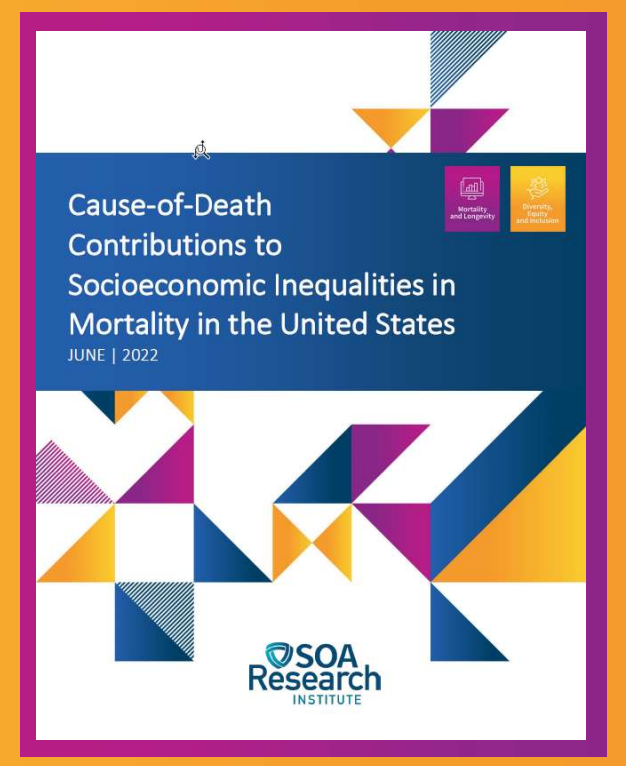
<https://www.soa.org/resources/research-reports/2022/health-care-rating-factors/>



Cause-of-Death Contributions to Socioeconomic Inequalities in Mortality in the U.S.

Seeks to identify particular causes of death that contribute to the growing disadvantage in mortality between populations in the least and most affluent deciles in the United States.

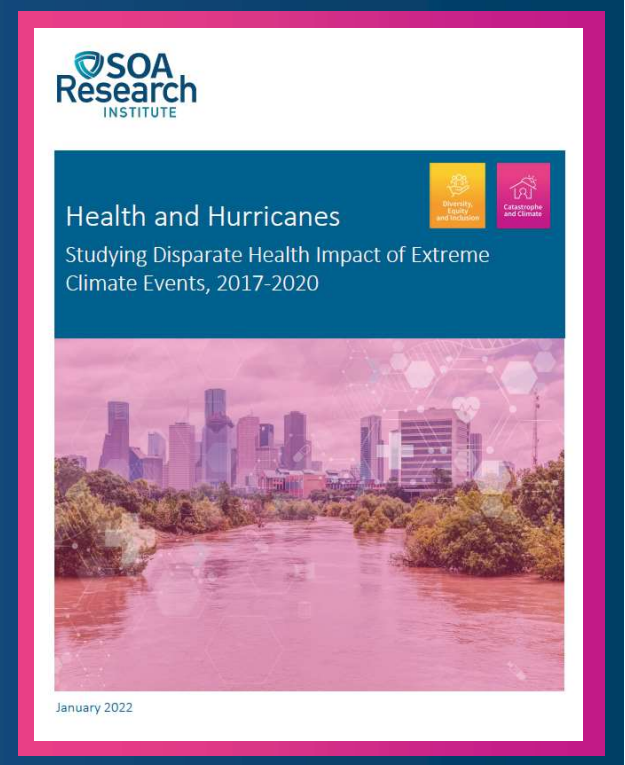
<https://www.soa.org/resources/research-reports/2022/cause-of-death-socioeconomic/>



Health and Hurricanes: Studying Disparate Health Impact of Extreme Climate Events, 2017–2020

Studies the relationship between hurricanes and the observed prevalence of health care utilization or certain health conditions and metrics of socioeconomic vulnerability.

<https://www.soa.org/resources/research-reports/2022/health-hurricanes-impact/>



More DEI Research

<https://www.soa.org/research/topics/dei-research/>



Questions?

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