Who Bears the Burden of Climate Inaction?

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***Brookings Papers on Economic Activity* Conference**

26 September 2025

Motivation and Approach

- Measure the costs of *inaction* and their distribution
- Compare the relative magnitudes of the key vectors

Comparing many types of household costs, we find:

- Burdens from climate inaction in the United States are already significant
- Lower-income households and certain geographies are disproportionately affected
- Weather events and wildfires are far more important than heat

Estimated Annual Average Household Costs
(in 2023 dollars)

Category	More Conservative (Average)	Less Conservative (Average)	90th Percentile Costs	90th Percentile County
Insurance Costs	$73	$250	$399	$399
Indirect Insurance Costs	$30	$102	$163	$163
Energy Costs: Quantity Increase	$10	$10	$32	$27
Energy Costs: Price Increase	$3	$4	$82	$8
Indirect Energy Costs	$2	$4	$73	$7
Costs Borne by Governments	$12	$49	$75	$84
Crop Losses	$0	$0	$0	$0
Mortality Costs: Heat	$−1	$−1	$−1	$−2
Mortality Costs: Wildfire Smoke	$88	$140	$200	$189
Mortality Costs: Natural Disasters	$2	$13	$13	$13
TOTAL	**$219**	**$571**		**$888**

Source: Authors' calculations

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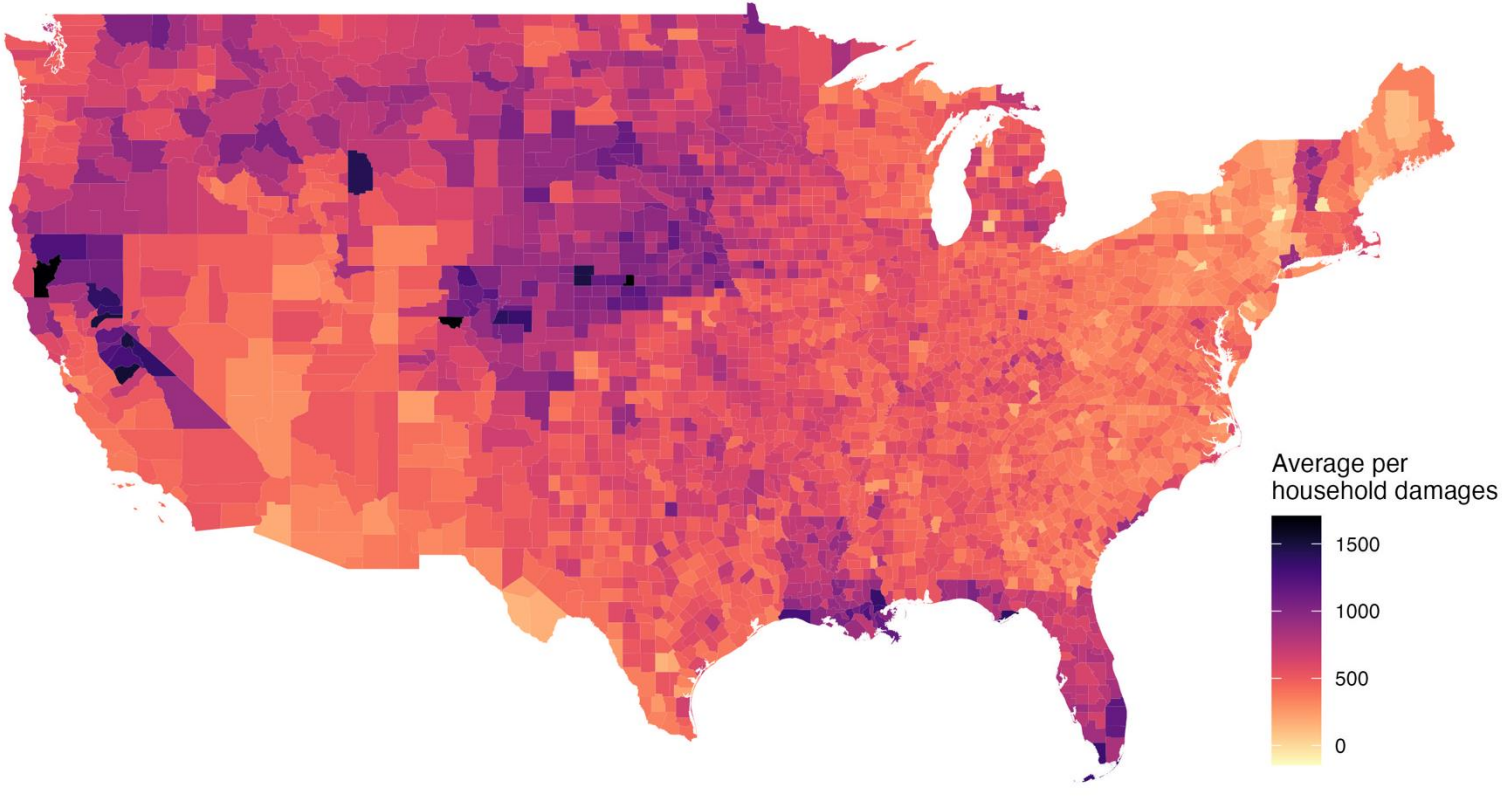
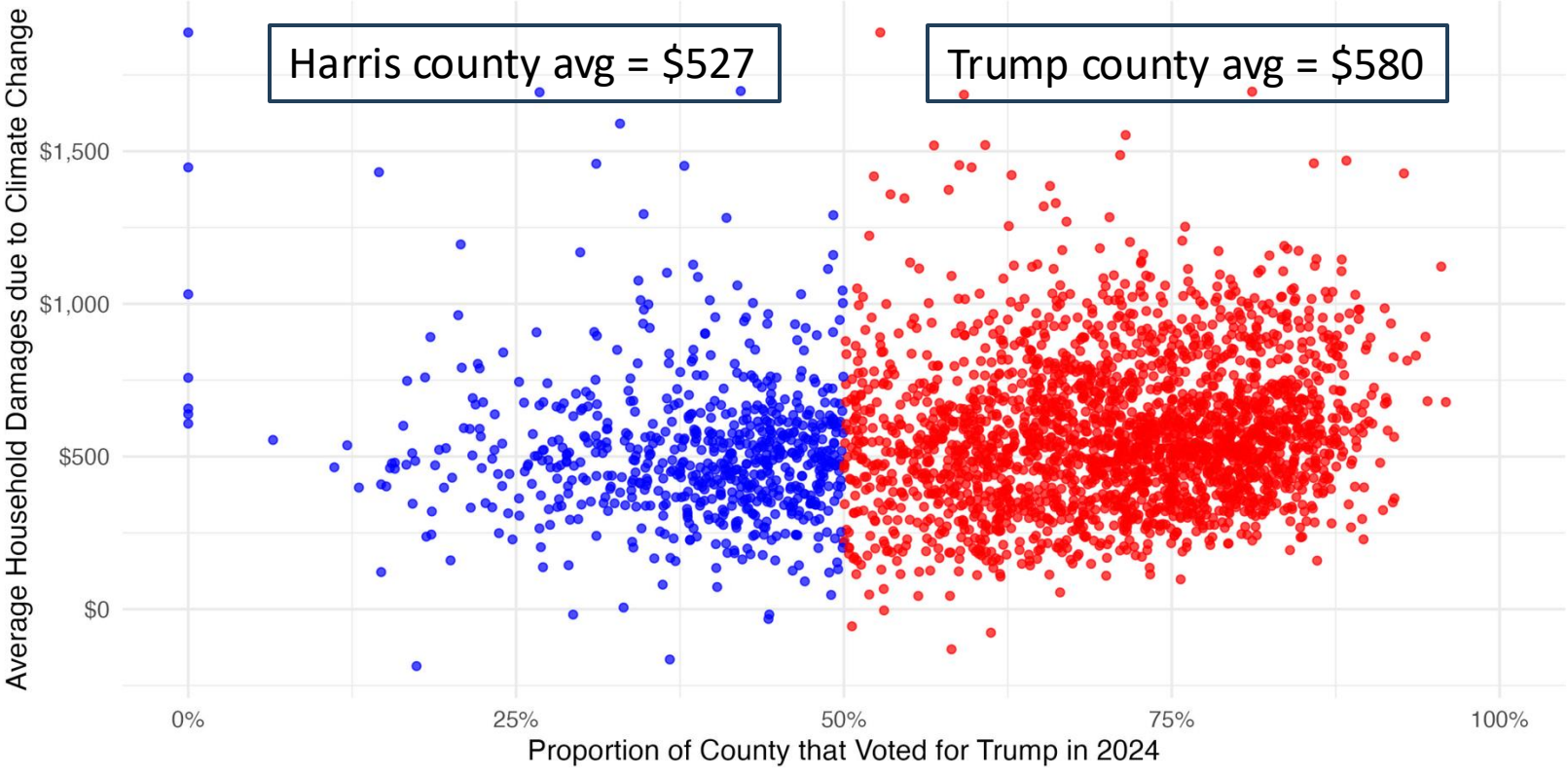
Estimated Annual Average Household Costs
(in 2023 dollars, by county, less conservative estimate)



Effects Almost Identical by Political Party
(in 2023 dollars, by county, less conservative estimate)



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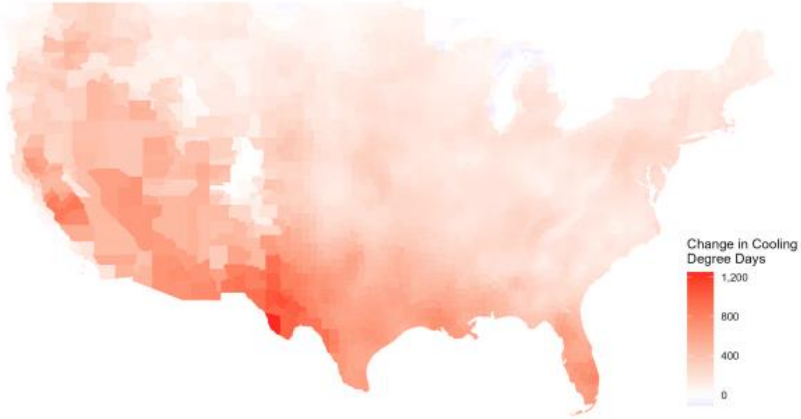
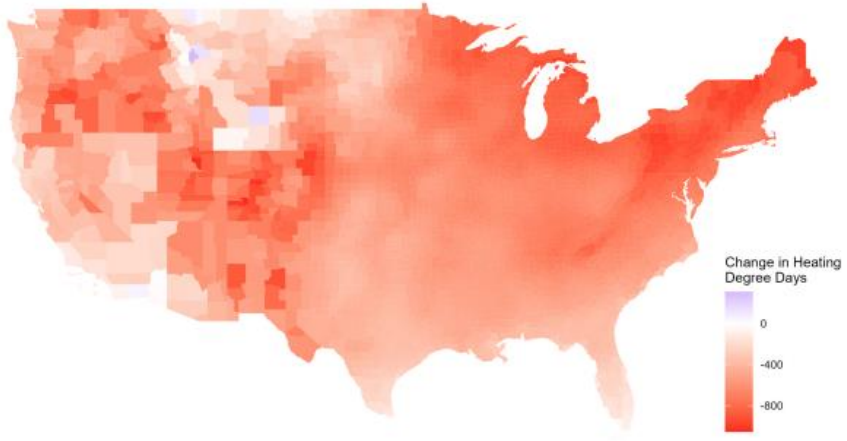
Climate Change at Work in the United States: Changes in CDD and HDD, 2020-2024 v. 1981-1990

CDD:

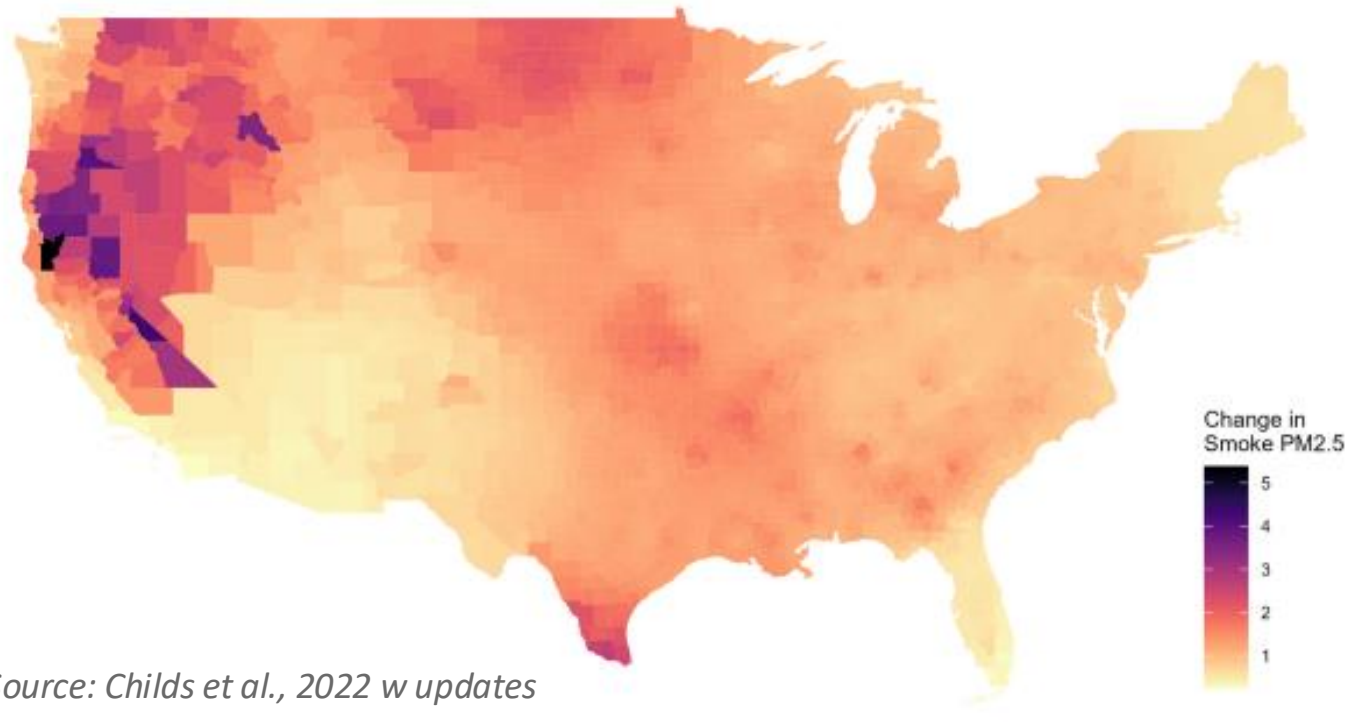


HDD:



Source: Burke et al., 2024; ERA5

Climate Change at Work in the United States: Changes in PM from Wildfire Smoke, 2020-2024 v. 2006-2010



Source: Childs et al., 2022 w updates

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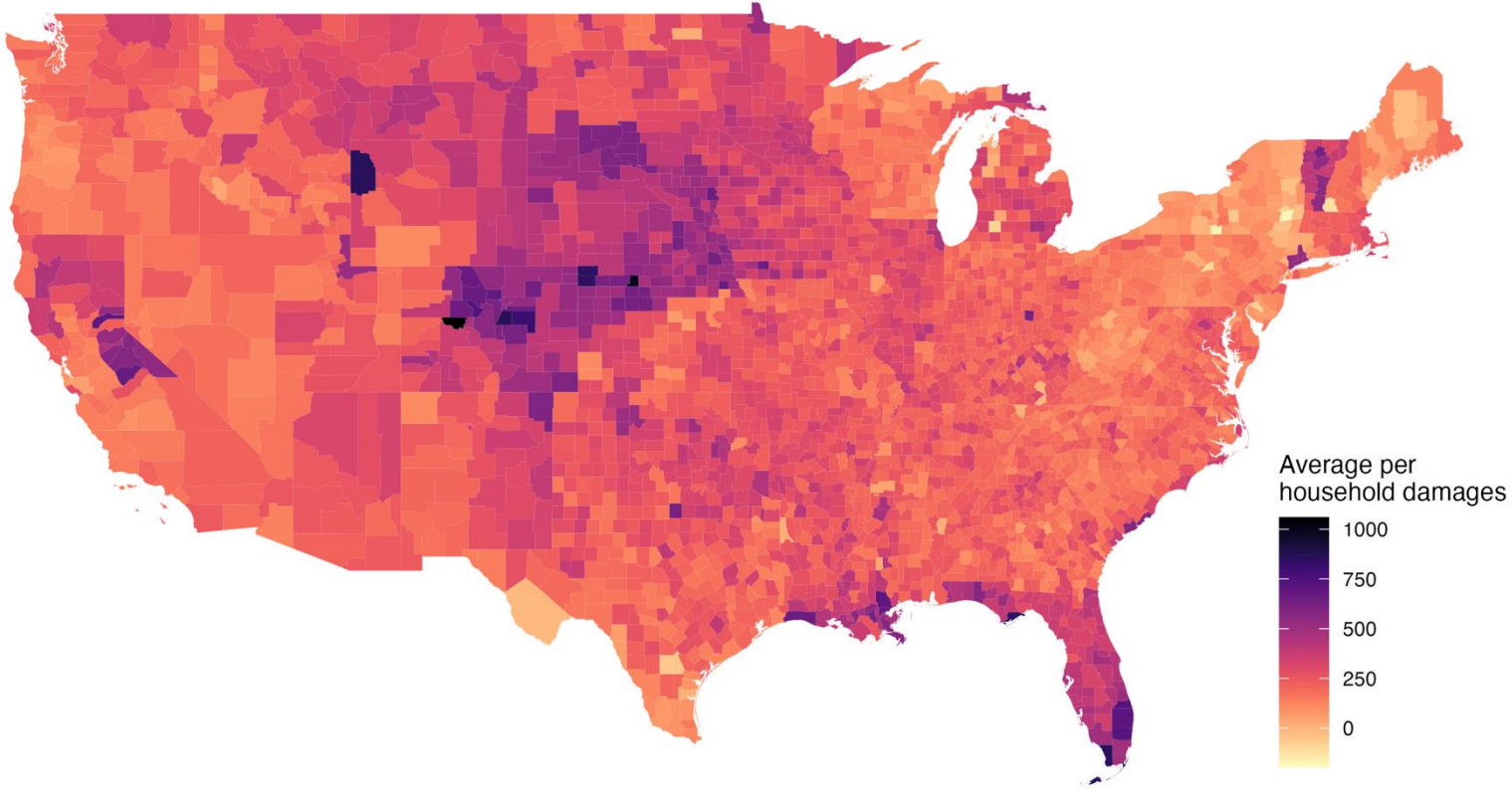
How much of observed changes are due to climate change?

- We generate a “less” and “more” conservative estimate, attributing a fraction of changes to climate change.
- For temperature, attribution is based on climate modelling, which overpredicts heat increases => full attribution
- For storms, we use a range of 6 percent attribution (based on insurance) to one-third (based on historical evolution of damage).
- For wildfire, 50 to 80 percent is attributed, based on the scientific literature.

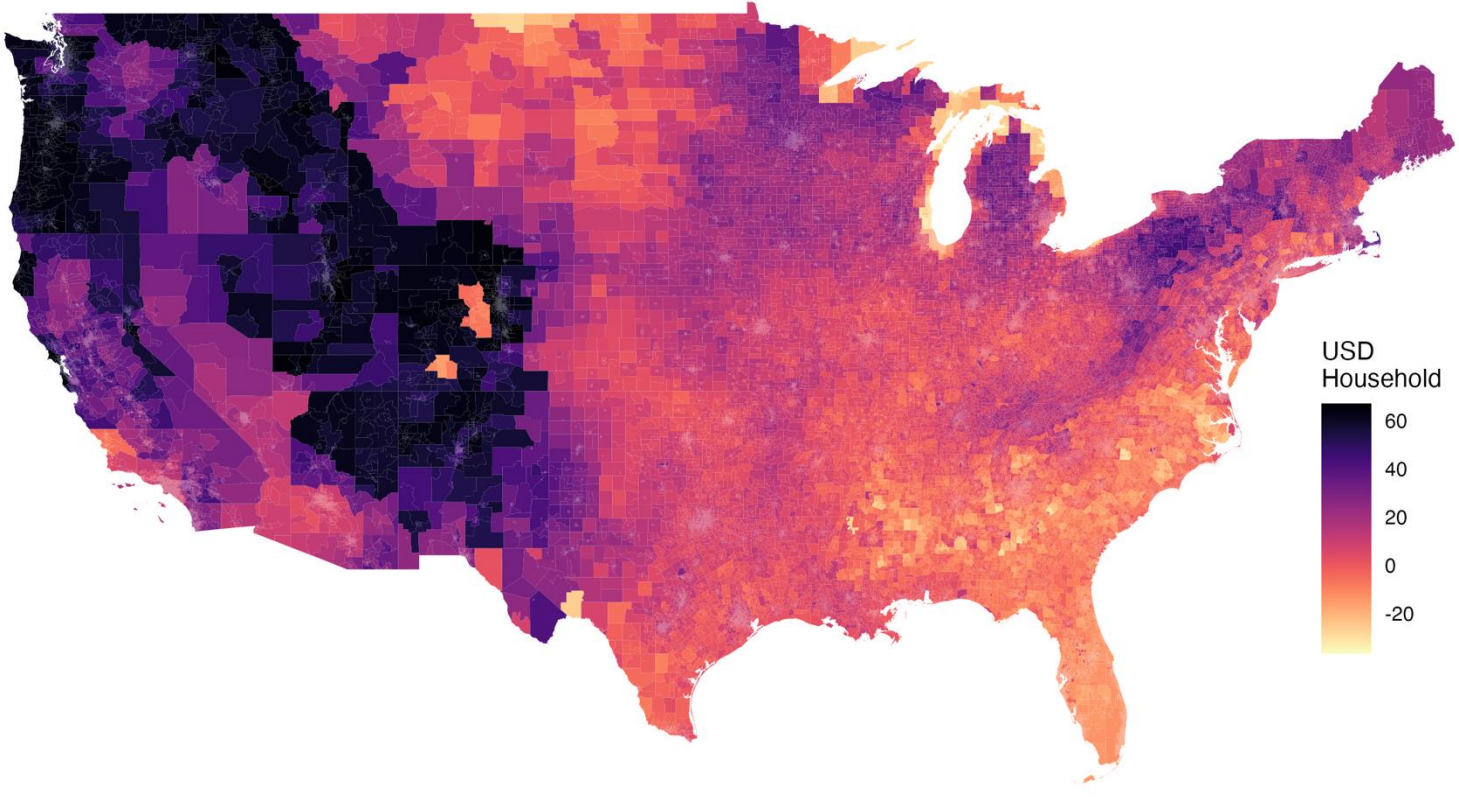
Methods and Data

- Use current literature as a guide
- Different estimation/calculation approach by vector
- This allows a wholistic comparison, but findings are not parallel in method

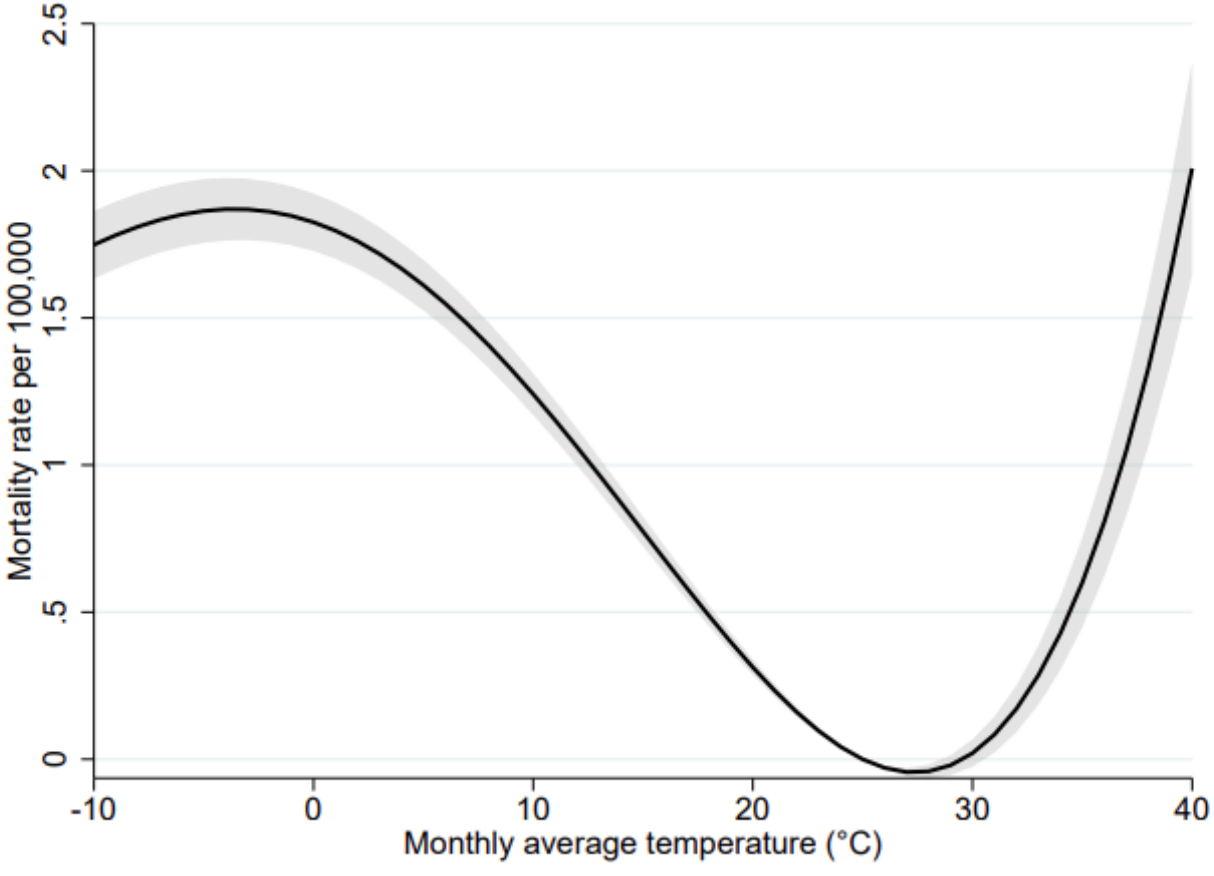
Findings: Home Insurance (by Geography)



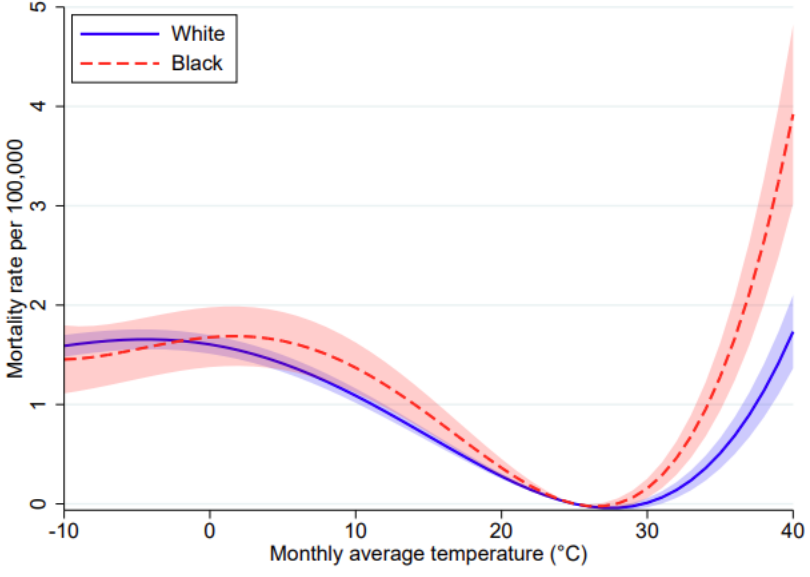
Findings: Energy Use (All)
2020-2024 v. 1981-1990

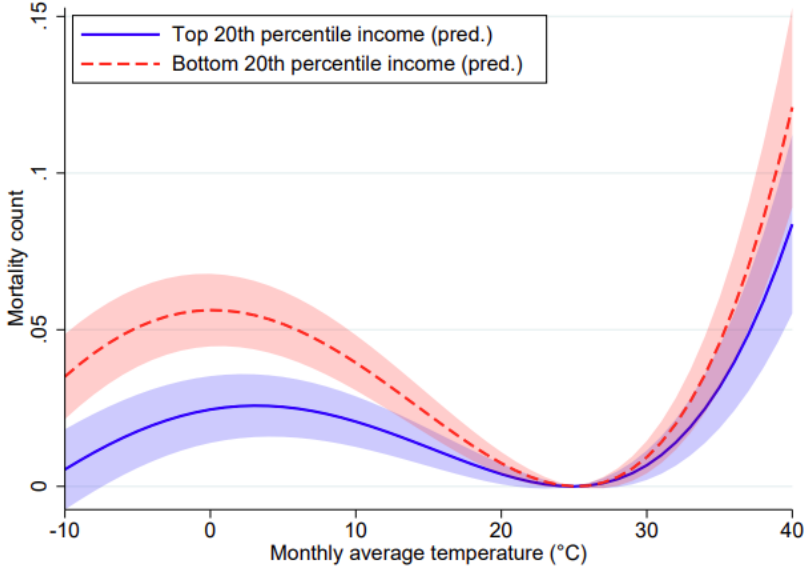


Findings: Mortality from Heat/Cold

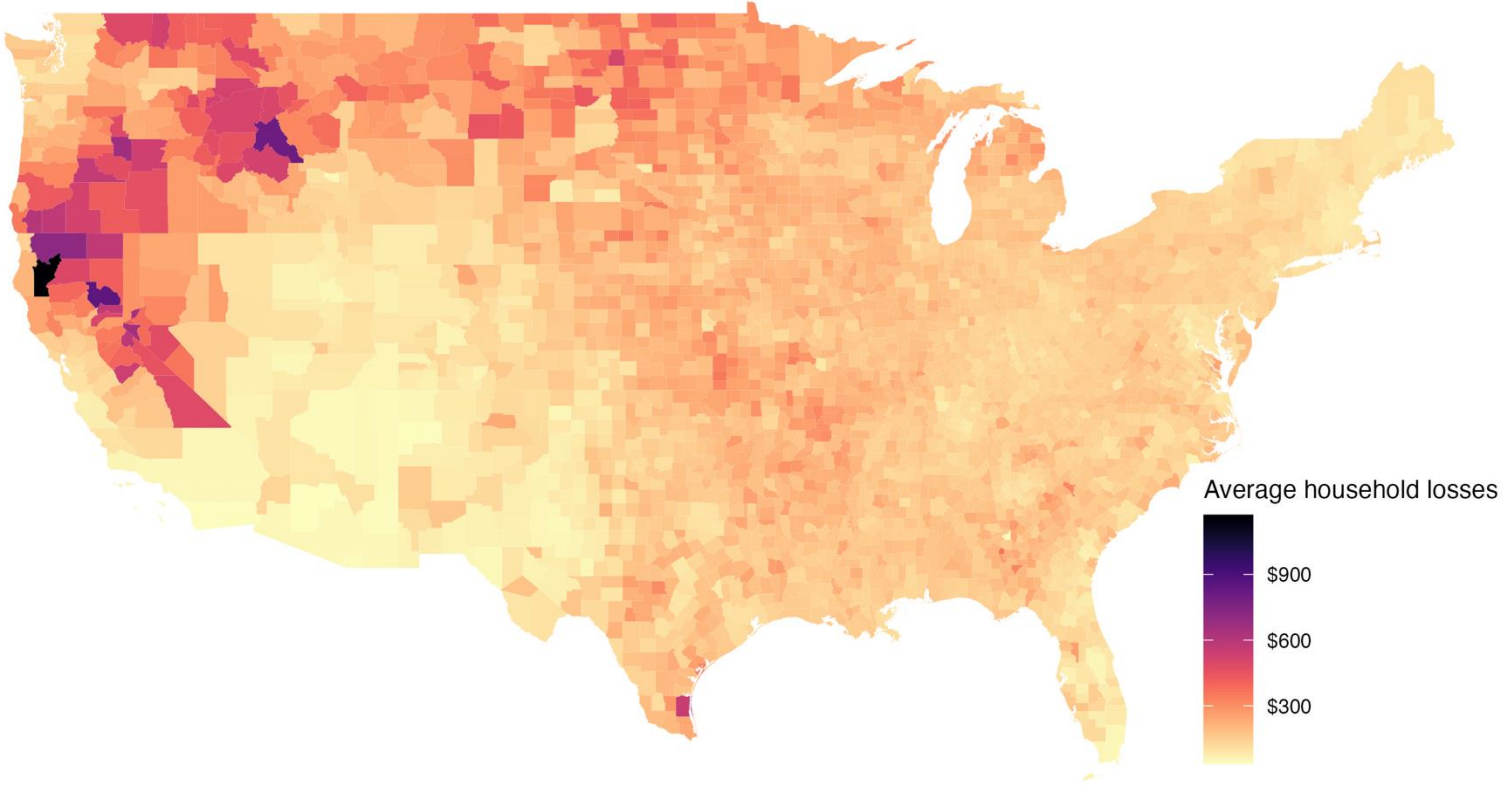


Findings: Mortality from Heat/Cold, by Subgroups





Findings: Mortality from Particulate Exposure



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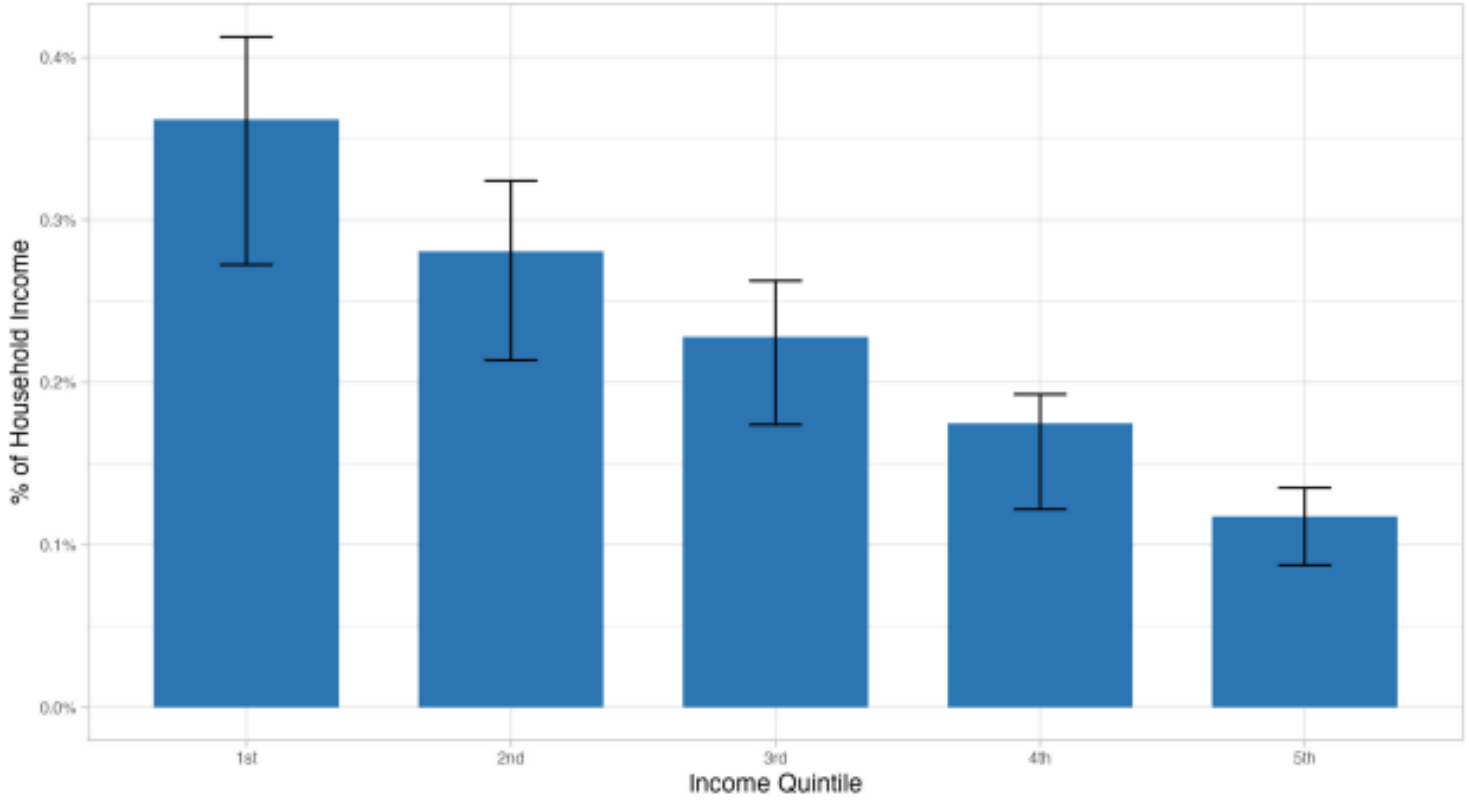
Findings: Mortality from Particulate Exposure (by Quintile)



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Caveats

- Many omissions (detailed in Section 5.2)
  - e.g., no consideration of adaptation, non-mortality health costs
- Undercounting some factors
  - e.g. hurricane excess deaths
- Imperfect accounting of social costs
- Assumptions embedded in value of statistical life
- United States certainly not representative of the world

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Temperature-related costs

small share

99% of Social Cost of Carbon Estimate is Temperature-related

Table 3.1.4: Impact Category Disaggregation of Social Cost of Carbon ($SC\text{-}CO_2$) for 2030 under a 2.0% Near-Term Ramsey Discount Rate (in 2020 dollars per metric ton of CO_2)

	Damage Module		
Impact category	DSCIM	GIVE	Meta-Analysis
Health	$179	$104	-
Energy	-$4	$10	-
Labor productivity	$47	-	-
Agriculture	$4	$103	-
Coastal	$3	$2	-
Total	$233	$219	$238

Source: EPA, 2023

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Key Lessons

- US households are *already* face significant costs from climate change; these are likely to rise over time.
- The scale of the costs of inaction is comparable to the costs of major climate policy interventions.
- Costs disproportionately burden low-income households and vulnerable geographic regions.
- Temperature induced costs are dwarfed by disaster-induced costs.
- We suggest a robust agenda for future research.