Brennan Williams

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Education

Ph.D. Economics, University of Virginia — Expected May 2022
M.A. Economics, University of Virginia — 2018
B.S. Mathematics and Economics, University of Miami — 2016

Interests

Environmental Economics, Public Economics, Labor Economics

Job Market Paper

"Distant Early Warning: Forecasts and the Long-Term Effects of Hurricane Exposure"
with John Voorheis (U.S. Census Bureau)

Works in Progress

"Who Weathers the Storm? The Unequal Effects of Hurricanes in the United States"
with Jonathan Colmer and John Voorheis

"Air Pollution and Economic Opportunity in the United States"
with Jonathan Colmer and John Voorheis

"Are you Experienced? Learning and Adaptation to Hurricanes in the United States"
with Jonathan Colmer and John Voorheis

Affiliations

Research Associate, Environmental Inequality Lab — 2020 - Present
Special Sworn Status, U.S. Census Bureau — 2018 - Present

Honors and Awards

Washington Center for Equitable Growth Academic Grant — 2021
Bankard Pre-Doctoral Fellowship, University of Virginia — 2021
Environmental Resilience Institute (ERI) Rapid Response Grant, University of Virginia — 2018
Snavely Prize for Outstanding Summer Paper, University of Virginia — 2018

Presentations

Association of Environmental and Resource Economics (AERE), Summer Conference — 2021
U.S. Census Bureau, Census Economic Research Brown Bag — 2021
University of Virginia, 8th Economics Research Colloquium — 2021

Teaching

Teaching Assistant, University of Virginia (2017 - 2021)
ECON 2010, Principles of Microeconomics
ECON 2020, Principles of Macroeconomics
ECON 3010, Intermediate Microeconomics
ECON 3430, Economics of Sustainability and the Environment

References

Jonathan Colmer, *Assistant Professor of Economics* — j.colmer@virginia.edu
Leora Friedberg, *Associate Professor of Economics* — lfriedberg@virginia.edu
Jay Shimshack, *Professor of Public Policy and Economics* — jay.shimshack@virginia.edu
John Voorheis, *Principal Economist* — john.l.voorheis@census.gov

Abstracts

Distant Early Warning: Forecasts and the Long-Term Effects of Hurricane Exposure

Environmental conditions during gestation meaningfully affect human capital at birth, resulting in long-run economic consequences. We study the later-life effects of prenatal hurricane exposure for more than 1.4 million individuals born in the U.S. between 1980 and 1994, using administrative and survey data from the IRS and U.S. Census Bureau combined with satellite-derived hurricane data. We estimate that plausibly exogenous exposure to dangerous hurricane winds during gestation has no effects on later-life economic outcomes when hurricanes are forecasted, despite evidence from past work that hurricanes adversely affect birth outcomes. This suggests that early life effects do not always lead to later life losses and that compensating interventions may be possible. However, we estimate that prenatal exposure to hurricanes outside of the forecasted area is associated with substantial losses: a $4,500 reduction in yearly adult earnings and a 5.4 percentile reduction in economic mobility. Back-of-the-envelope calculations suggest that in the absence of forecasts, total earnings lost from prenatal exposure would be $33 billion over the sample period. This highlights the value of advanced information in mitigating the translation of environmental shocks into economic damages.

Who Weathers the Storm? The Unequal Effects of Hurricanes in the United States

Little is known about the distributional consequences of climate shocks. Combining spatially continuous data on hurricane exposure with a 25-year panel of individual-level tax returns, linked to demographic information and residential histories, we provide systematic evidence on the distributional effects of hurricanes in the United States. We first estimate that hurricane exposure is associated with small reductions in total income and earnings on average. These effects are dampened by increases in transfers. However, the average effects mask substantial heterogeneity. Low-income Black and Hispanic individuals experience much larger marginal reductions in total income and earnings.

Air Pollution and Economic Opportunity in the United States

Neighborhoods are an important determinant of economic opportunity in the United States. Less clear is how neighborhoods affect economic opportunity. Here we provide early evidence on the importance of environmental quality in shaping economic opportunity. Combining 36 years of satellite derived PM2.5 concentrations measured over roughly 8.6 million grid cells with individual-level administrative data provided by the U.S. Census Bureau and Internal Revenue Service (IRS), we first document a new fact: early-life exposure to particulate matter is one of the top 5 predictors of upward mobility in the United States. Next, using regulation-induced reductions in prenatal pollution exposure following the 1990 Clean Air Act Amendments, we estimate significant increases in adult earnings and upward mobility. Combining our estimates with new individual-level measures of pollution disparities at birth our estimates can account for up to 20% of Black-White earnings gaps, and 25% of the Black-White gap in upward mobility estimated in Chetty et al. (2018). Combining our estimates with experiment-induced reductions in pollution exposure from the Moving to Opportunity (MTO) experiment, we can account for 15% of the total neighborhood earnings effect estimated in Chetty et al. (2016). Collectively, these findings suggest that disparities in environmental quality may play a meaningful role in explaining observed patterns of income inequality and economic opportunity in the United States.

Are you Experienced? Learning and Adaptation to Hurricanes in the United States

Hurricanes are one of the most powerful forces of nature on the planet. Capable of delivering sustained wind speeds in excess of 180 mph, the potential for destruction is enormous. However, the translation of this natural energy into economic damages and loss of life is not guaranteed. Individuals make choices that affect the degree to which they are protected from the consequences of exposure. However, without perfect information individuals are unable to optimize. In this paper we explore whether people learn from experience. Using individual-level administrative data from

the U.S. Census Bureau and Internal Revenue Service (IRS), combined with individual exposure to hurricane-strength winds over the life-cycle, we evaluate the degree to which individual experience with hurricanes affects the translation of these environmental shocks into individual losses. We estimate that individual experience of hurricanes dampens losses, suggesting that protection from natural disasters may be an experience good, and that, consequently, individuals may under-invest in private self-protection.