



## Minghao Qiu

Postdoctoral Scholar, Earth System Science

### Bio

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#### BIO

I am a postdoctoral scholar at Stanford University, working with Marshall Burke as a part of the ECHO (Environmental Change and Human Outcomes) Lab. My research interest is in environmental and energy policies with a global focus on issues involving air pollution, climate change and energy systems. I use causal inference, machine learning, and atmospheric chemistry modeling to study the sustainability challenges at the intersection of energy, pollution and climate using real-world data.

I received my PhD degree from MIT's Institute for Data, Systems, and Society on September 2021, advised by Noelle Selin. I also worked closely with my committee members: Valerie Karplus, Cory Zigler and Colette Heald. I received bachelor degrees in environmental sciences and economics from Peking University in Beijing.

#### HONORS AND AWARDS

- Outstanding Student Presentation Awards (OSPA), American Geophysical Union Fall Meeting (2021)
- Fellow, Martin Family Society of Fellows for Sustainability (2020)
- Young Scientists Summer Program, IIASA (2019)

#### STANFORD ADVISORS

- Marshall Burke, Postdoctoral Faculty Sponsor

#### LINKS

- Personal site: <https://mhqiu.github.io/>

### Publications

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#### PUBLICATIONS

- **Antagonism between ambient ozone increase and urbanization-oriented population migration on Chinese cardiopulmonary mortality.** *Innovation (Cambridge (Mass.))*  
Sun, H. Z., Zhao, J., Liu, X., Qiu, M., Shen, H., Guillas, S., Giorio, C., Staniaszek, Z., Yu, P., Wan, M. W., Chim, M. M., van Daalen, K. R., Li, et al  
2023; 4 (6): 100517
- **Unraveling complex causal processes that affect sustainability requires more integration between empirical and modeling approaches.** *Proceedings of the National Academy of Sciences of the United States of America*  
Schlüter, M., Brelsford, C., Ferraro, P. J., Orach, K., Qiu, M., Smith, M. D.  
2023; 120 (41): e2215676120
- **The contribution of wildfire to PM<sub>2.5</sub> trends in the USA.** *Nature*  
Burke, M., Childs, M. L., de la Cuesta, B., Qiu, M., Li, J., Gould, C. F., Heft-Neal, S., Wara, M.

2023

- **Air quality related equity implications of U.S. decarbonization policy.** *Nature communications*  
Picciano, P., Qiu, M., Eastham, S. D., Yuan, M., Reilly, J., Selin, N. E.  
2023; 14 (1): 5543
- **Drought impacts on the electricity system, emissions, and air quality in the western United States.** *Proceedings of the National Academy of Sciences of the United States of America*  
Qiu, M., Ratledge, N., Azevedo, I. M., Diffenbaugh, N. S., Burke, M.  
2023; 120 (28): e2300395120
- **Impacts of wind power on air quality, premature mortality, and exposure disparities in the United States.** *Science advances*  
Qiu, M., Zigler, C. M., Selin, N. E.  
2022; 8 (48): eabn8762
- **Daily Local-Level Estimates of Ambient Wildfire Smoke PM<sub>2.5</sub> for the Contiguous US.** *Environmental science & technology*  
Childs, M. L., Li, J., Wen, J., Heft-Neal, S., Driscoll, A., Wang, S., Gould, C. F., Qiu, M., Burney, J., Burke, M.  
2022
- **Statistical and machine learning methods for evaluating trends in air quality under changing meteorological conditions** *ATMOSPHERIC CHEMISTRY AND PHYSICS*  
Qiu, M., Zigler, C., Selin, N. E.  
2022; 22 (16): 10551-10566
- **Using snapshot measurements to identify high-emitting vehicles** *ENVIRONMENTAL RESEARCH LETTERS*  
Qiu, M., Borken-Kleefeld, J.  
2022; 17 (4)
- **Improving Evaluation of Energy Policies with Multiple Goals: Comparing Ex Ante and Ex Post Approaches** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*  
Qiu, M., Weng, Y., Cao, J., Selin, N. E., Karplus, V. J.  
2020; 54 (24): 15584-15593
- **The contribution of the Beijing, Tianjin and Hebei region's iron and steel industry to local air pollution in winter** *ENVIRONMENTAL POLLUTION*  
Yang, H., Tao, W., Liu, Y., Qiu, M., Liu, J., Jiang, K., Yi, K., Xiao, Y., Tao, S.  
2019; 245: 1095-1106