

# Yuzhou Wang

Davis Hall, Berkeley, CA 94720, USA

Email: [yuzhouw@berkeley.edu](mailto:yuzhouw@berkeley.edu) | Website: <https://yuzhou-wang.github.io>

Twitter: @YuzhouYWang | LinkedIn: <https://www.linkedin.com/in/yuzhouwang>

## EDUCATION

---

### University of California, Berkeley

Berkeley, CA, USA

Postdoc

Jul 2023 – Present

- Research Area: Air Quality Modeling; Air Pollution Exposure; Environmental Policy; Machine Learning
- Advisor: Joshua S. Apte

### University of Washington

Seattle, WA, USA

Ph.D. in Environmental Engineering

Sep 2017 – Jun 2023

- Dissertation: *Understanding and addressing ambient air pollution exposure inequality*
- Thesis Committee: Julian D. Marshall (Chair), Timothy V. Larson, Lianne Sheppard, Alex Turner

### Tsinghua University

Beijing, China

B.E. in Environmental Engineering

Aug 2013 – Jun 2017

B.A. in Business Administration

Aug 2014 – Jun 2017

## PUBLICATIONS

---

### Peer-reviewed papers

1. **Yuzhou Wang**, Julian Marshall, Joshua Apte. “US ambient air monitoring network has inadequate coverage under new PM<sub>2.5</sub> standard.” *Environmental Science & Technology Letters*, 11(11), 1220–1226. DOI: 10.1021/acs.estlett.4c00605. 2024. [[Link](#)]  
Highlighted in [ACS Press](#); [C&EN](#); [EOS](#); [Inside Climate News](#); [Berkeley Science Review](#)
2. Siyu Zhu, Zhi Li, Mengye Chen, Yixin Wen, Zhong Liu, George Huffman, Theresa Tsoodle, Sebastian Ferraro, **Yuzhou Wang**, Yang Hong. “Evaluation of IMERG climate trends over land in the TRMM and GPM eras.” *Environmental Research Letters*, 20, 014064. DOI: 10.1088/1748-9326/ad984e. 2024. [[Link](#)]
3. **Yuzhou Wang**, Joshua Apte, Jason Hill, Cesunica Ivey, Dana Johnson, Esther Min, Rachel Morello-Frosch, Regan Patterson, Allen Robinson, Christopher Tessum, Julian. Marshall. “Air quality policy should quantify effects on disparities.” *Science*, 381, 6655. DOI: 10.1126/science.adg9931. 2023. [[Link](#)]  
Highlighted in [The New York Times](#); [The Associated Press](#); [The Washington Post](#); [National Public Radio](#)
4. **Yuzhou Wang**, Joshua Apte, Jason Hill, Cesunica Ivey, Regan Patterson, Christopher Tessum, Julian Marshall. “Location-specific strategies for eliminating US national racial-ethnic PM<sub>2.5</sub> exposure inequality.” *Proceedings of the National Academy of Sciences*, 119 (4), e2205548119. DOI: 10.1073/pnas.2205548119. 2022. [[Link](#)]  
Highlighted in [Popular Science](#); [UW News](#)
5. **Yuzhou Wang**, Yafeng Wang, Hao Xu, Yaohui Zhao, Julian Marshall. “Ambient air pollution and socioeconomic status in China.” *Environmental Health Perspectives*, 130 (6), 067001. DOI:10.1289/EHP9872. 2022. [[Link](#)]  
Highlighted in [UW News](#)
6. **Yuzhou Wang**, Matthew Bechle, Sun-Young Kim, Peter Adams, Spyros Pandis, Arden Pope, Allen Robinson, Lianne Sheppard, Adam Szpiro, and Julian Marshall. “Spatial decomposition analysis of NO<sub>2</sub> and PM<sub>2.5</sub> air pollution in the United States.” *Atmospheric Environment*, 241, 117470. DOI: 10.1016/j.atmosenv.2020.117470. 2020. [[Link](#)]

7. Jacob Lefler, Joshua Higbee, Richard Burnett, Majid Ezzati, Nathan Coleman, Dalton Mann, Julian Marshall, Matthew Bechle, **Yuzhou Wang**, Allen Robinson, Arden Pope. “Air pollution and mortality in a large, representative US cohort: multiple-pollutant analyses, and spatial and temporal decompositions.” *Environmental Health* 18(101), 1-11. DOI: 10.1186/s12940-019-0544-9. 2019. [[Link](#)]

### Working papers

8. **Yuzhou Wang**, Lucas Mendoza, Ling Jin, Joshua Apte. “A reduced-form air quality model for policy assistant in California.”
9. **Yuzhou Wang**, Joshua Apte. “A seasonal air quality model with machine learning”
10. Bujin Bekbulat, **Yuzhou Wang**, Jignesh Patel, Christopher Tessum, Joshua Apte, Julian Marshall. “InMAP Source Receptor Matrix 2.0: Updated reduced complexity air pollution modeling in contiguous US.”
11. Lucas Mendoza, **Yuzhou Wang**, Libby Koolik, Joshua Apte. “Analyzing sources and spatial scales of air pollution disparities for California air basins.”
12. Lucas Mendoza, **Yuzhou Wang**, Neeldip Barman, Joshua Apte, Srinidhi Balasubramanian, Julian Marshall, Chandra Venkataraman. “Evaluating multi-scale heterogeneity in PM<sub>2.5</sub> exposures for India using an annualized reduced complexity model.”
13. Srinidhi Balasubramanian, Lucas Mendoza, **Yuzhou Wang**, Neeldip Barman, Joshua Apte, Julian Marshall, Chandra Venkataraman. “Air Pollution management and intervention tool for India (PAVITRA): Making a case for multi-scale multi-sector air quality management.”
14. Neeldip Barman, Lucas Mendoza, **Yuzhou Wang**, Joshua Apte, Srinidhi Balasubramanian, Julian Marshall, Chandra Venkataraman. “An airshed approach to mitigating extreme PM<sub>2.5</sub> levels in India.”

## PRESENTATIONS

---

### Conference presentations

- 2024 “Gaps and disparities in U.S. ambient air monitoring network under new PM<sub>2.5</sub> standard” In AGU Fall Meeting (Poster)
- 2024 “Addressing gaps and disparities in ambient air quality monitoring in the US.” In ISEE Annual Conference (Talk)
- 2023 “How would emission reductions in federally-defined disadvantaged communities reduce national air pollution exposure disparities?” In AGU Fall Meeting (Poster)
- 2023 “How would emission reductions in federally-defined disadvantaged communities reduce national air pollution exposure disparities?” ISEE Annual Conference (Talk)
- 2022 “Addressing U.S. racial-ethnic inequality in air pollution exposure.” ISEE Annual Conference (Talk)
- 2021 “Ambient air pollution and socioeconomic status in China.” ISEE Annual Conference (Talk)
- 2020 “Spatial decomposition analysis of NO<sub>2</sub> and PM<sub>2.5</sub> air pollution in the United States.” ISEE Annual Conference (Talk)
- 2019 “National disparities of air pollution exposure level by socioeconomic status in China.” ISEE Annual Conference (Poster Discussion)

### Invited talks & seminars

- 2025 “Tackling Air Pollution: New Models, Methods, and Policies” In the University of Wisconsin-Madison - Department of Civil and Environmental Engineering
- 2025 “Tackling Air Pollution: New Models, Methods, and Policies” In the Texas A&M University - Zachry Department of Civil and Environmental Engineering
- 2025 “Tackling Air Pollution: New Models, Methods, and Policies” In Stanford University -

## Atmospheric Composition and Climate Lab

- 2024 “How to Address Disparities in Exposure to Ambient Air Pollution?” In the University of California, Berkeley - SHE/EQUIS Lab
- 2023 “Location-specific strategies for eliminating US national racial-ethnic PM2.5 exposure inequality.” In Environmental Defense Fund - Air Pollution Inequity Research Seminar
- 2023 “Introduction and application of reduced-form air quality models” Indian Institute of Technology Bombay
- 2023 “InMAP application: Location-specific strategies for eliminating racial-ethnic PM2.5 exposure inequality.” In the Center for Study of Science, Technology, and Policy
- 2023 “Addressing racial-ethnic inequality in air pollution.” In the University of Washington - DEI Town Hall
- 2022 “Addressing racial-ethnic inequality in exposure to PM2.5.” In the University of California, Berkeley - Civil and Environmental Engineering
- 2022 “Addressing U.S. racial-ethnic inequality in ambient air pollution exposure.” In the University of Washington - Atmospheric Physics & Chemistry Seminar
- 2018 “Spatial decomposition analysis of NO<sub>2</sub> and PM<sub>2.5</sub> air pollution in the United States.” Center for Air, Climate, & Energy Solutions Science Meeting

## TEACHING EXPERIENCE

---

Instructor. Air Quality Modeling Workshop. Feb 2023, Oct 2023, and Dec 2023

- Led three 2-10 day workshops on applications and development of reduced-form air quality modeling.
- Involving 40+ graduate students and research scientists from five research institutions: University of California Berkeley; University of Washington; Howard University; Indian Institute of Technology Bombay; Center for Study of Science, Technology and Policy.

## MENTORING EXPERIENCE

---

### Graduate students

- Lucas Mendoza (Jul 2023 - Present, University of California, Berkeley): “*Air pollution management and intervention tool for India*” and “*Sources and spatial scales of air pollution exposure disparities in California*”
  - o AAAR student poster award
- Cassidy Barrientos (Dec 2023 - Present, University of California, Berkeley): “*A reduced-form air quality model and source receptor matrix in California*”
- Bujin Bekbulat (Nov 2021 - Jun 2023, University of Washington): “*Development of national and regional reduced-complexity air pollution modeling*”

### Undergraduate students

- Kathryn McLaughlin, Darin Avila, and Julia Kashimura (Summer 2021, Princeton University): “*A Python package for calculating concentration changes from emission interventions*”

## PROFESSIONAL EXPERIENCE

---

**Department of Civil and Environmental Engineering, University of California, Berkeley** Berkeley, CA, USA  
**Postdoctoral Scholar** July 2023 – present

- Developed a data-driven, high-resolution, and computationally efficient machine-learning air quality model to predict air pollution concentrations from emissions, collaborating with the US and California Environmental Protection Agencies, Office of Environmental Health Hazard Assessment.
- Led a project to quantify and address the gaps and disparities in regulatory air quality monitoring under the new air quality standard, utilizing remote sensing data, empirical models, and raw observational data.

- Mentored PhD students to investigate policies for effective air quality controls in California and India, using high-resolution reduced-complexity air quality models.

**Department of Civil and Environmental Engineering, University of Washington**  
**Graduate Research Assistant**

Seattle, WA, USA  
 August 2017 – June 2023

- Led a cross-institutional research team to develop a multi-objective optimization approach to design the emission intervention policy for achieving the largest environmental and public health benefits.
- Led an interdisciplinary team to utilize statistical machine learning approaches to infer the relationship between air pollution and socioeconomic status in China.
- Developed a spatial decomposition algorithm to attribute the spatial origins of air pollution concentrations for every census block.

**Center for Neighborhood Knowledge, University of California, Los Angeles**  
**Research Assistant**

Los Angeles, CA, USA  
 July 2016 – September 2016

- Analyzed the relationship between retail development from 1990 and 2010 and tract-level socioeconomic status

**Center for Earth System Science, Tsinghua University**  
**Research Assistant**

Beijing, China  
 October 2015 – June 2017

- Built an hourly-based semi-empirical PM2.5 forecast statistical model based on backward trajectory, background concentration, and meteorological data in three megacities in China.

**Policy Research Center for Environment and Economy, Ministry of Environmental Protection**  
**Research Assistant**

Beijing, China  
 June 2015 – August 2015

- Assisted in evaluating the implementation of “*Air Pollutant Emission Standards for Flat Glass Industry.*”

## PROFESSIONAL ASSOCIATIONS

---

Member of the International Society for Environmental Epidemiology, 2023-present

Member of the American Geophysical Union, 2023-present

## ACADEMIC & COMMUNITY SERVICE

---

### Journal Reviewer:

- *Nature Sustainability*
- *Nature Cities*
- *Nature Communications*
- *Environmental Science & Technology*
- *One Earth*
- *Environmental Pollution*
- *GeoHealth*
- *Environmental Research Letters*
- *Journal of Transport Geography*
- *BMC Public Health*
- *Scientific Reports*
- *Environmental Geochemistry and Health*
- *Population and Environment*
- *International Journal of Data Science and Analytics*

### Conference Paper & Presentation Reviewer:

- Transportation Research Board Annual Meeting - 2024
- American Geophysical Union Fall Meeting - 2023; 2024

### Conference Convener & Chair:

- 2024 AGU Annual Meeting, oral and poster session “Innovative Models and Tools to Precisely Quantify and Identify Solutions for Air Pollution Exposure Inequality”

**Public Comment:**

- Written comment on “[Science Advisory Board Project Proposal: SAB Advice on Advancing Environmental Justice Science in Rulemaking](#)”, with Julian Marshall and Joshua Apte. September 2023.
- Written comment on “[Reconsideration of the National Ambient Air Quality Standards for Particulate Matter](#)”, on behalf of the North American Chapter of the International Society for Environmental Epidemiology. March 2023.