

Yuzhou Wang

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CURRENT POSITION

Texas A&M University

Assistant Professor, Zachry Department of Civil and Environmental Engineering

College Station, TX, USA

Aug 2025 – Present

- Core Research Area: Air Quality Modeling; Air Pollution Exposure; Machine Learning; Large Language Model; Environmental Policy; Environmental Health

EDUCATION

University of California, Berkeley

Postdoc

Berkeley, CA, USA

Jul 2023 – Jul 2025

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

University of Washington

Ph.D. in Environmental Engineering

Seattle, WA, USA

Sep 2017 – Jun 2023

- Dissertation: *Understanding and addressing ambient air pollution exposure inequality*
- Advisor: Julian D. Marshall
- Other Committee Members: Timothy V. Larson, Lianne Sheppard, Alex Turner

Tsinghua University

B.E. in Environmental Engineering

B.A. in Business Administration

Beijing, China

Aug 2013 – Jun 2017

Aug 2014 – Jun 2017

PUBLICATIONS (*corresponding author; student mentored underlined)

Peer-reviewed papers

- Neeldip Barman, Lucas Mendoza, **Yuzhou Wang**, Zainab Arub, Shivam Saxena, Piyush Bhardwaj, Joshua Apte, Julian Marshall, Srinidhi Balasubramanian, Chandra Venkataraman*. “Mitigation strategies for critically polluted PM_{2.5} regions using spatially targeted airsheds: Application to the Indo-Gangetic Plain, India.” *npj Clean Air*, Accepted. 2026
- Azar Abadi, Kyle Brumfield, Moiz Usmani, Gemma Jiang, TC Chakraborty, **Yuzhou Wang**, Zhijie Zhou, Cenlin He, Minghao Qiu, Jennifer Stowell, Douglas Fritz, Sunil Kumar, Qiang Guo, Ying Xiong, Georgia Destouni, Qian Xiao, Xindi Hu, Kelvin Fong, Yun Hang, John Nielsen-Gammon, Rima Habre, Jennifer Bratburd, Christopher Tessum, Antarpreet Jutla, Rita Colwell, Gabriel Filippelli, Thanh Nguyen*. “Developing Scenario-Based Strategies for Health, Climate, and Environmental Preparedness: The One Health, One Earth Approach.” *GeoHealth*, 10(4), e2025GH001674. DOI: 10.1029/2025GH001674. 2026. [[Link](#)]
- Yuzhou Wang**, Julian Marshall, Joshua Apte*. “US ambient air monitoring network has inadequate coverage under new PM_{2.5} 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](#)

- 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](#)]

5. **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](#)
6. **Yuzhou Wang**, Joshua Apte, Jason Hill, Cesunica Ivey, Regan Patterson, Christopher Tessum, Julian Marshall*. “Location-specific strategies for eliminating US national racial-ethnic PM_{2.5} 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](#)
7. **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](#)
8. **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 NO₂ and PM_{2.5} air pollution in the United States.” *Atmospheric Environment*, 241, 117470. DOI: 10.1016/j.atmosenv.2020.117470. 2020. [[Link](#)]
9. 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](#)]

Submitted papers

10. Srinidhi Balasubramanian, [Lucas Rojas Mendoza](#), Neeldip Barman, **Yuzhou Wang**, Zainab Arub, Shivam Saxena, Bujin Bekbulat, Piyush Bhardwaj, Julian D. Marshall, Joshua S. Apte*, Chandra Venkataraman*. “Meeting India’s clean air goals needs a spatially differentiated multi-scale, multi-sector mitigation approach.” *Environmental Science & Technology*. Under Review.
11. [Alan Gonzalez](#), [Heewon Yim](#), Kyle McCary, Xiangxinyue Meng, Ajith Thenoor Chandran, Yue Zhang, **Yuzhou Wang***. “Modeling decadal organosulfates to improve estimations of aerosol hygroscopicity in the United States.” *Environmental Science & Technology*. Under Review.
12. [Heewon Yim](#), [Alan Gonzalez](#), Alana Dodero, Sahir Gagan, Kyle McCary, Sining Niu, Jie Zhang, Yue Zhang*, **Yuzhou Wang***. “Quantifying personal care product emissions, temporal profiles, and air-quality impacts using measurement-constrained Chemical Transport Modeling.” *Environmental Science & Technology*. Revise & Resubmitted.
13. Ajith Thenoor Chandran, Xiangxinyue Meng, Kyle McCary, [Alan Gonzalez](#), [Heewon Yim](#), Qi Ying, **Yuzhou Wang**, Maria Zawadowicz, Yue Zhang*. “New particle formation and organic-driven growth enhance cloud condensation nuclei and cloud droplet number concentrations in a subtropical forest.” *npj Climate & Atmospheric Science*. Under Review.
14. [Lucas Mendoza](#), Neeldip Barman, **Yuzhou Wang**, Joshua Apte, Srinidhi Balasubramanian, Julian Marshall, Chandra Venkataraman. “Evaluating multi-scale heterogeneity in PM_{2.5} exposures for India using an annualized reduced complexity model.” *Environmental Science & Technology*. Under Review.

Working papers

15. [Alan Gonzalez](#), **Yuzhou Wang***. “Population Exposure to Future Concentrations of Criteria Air Pollutants in Texas”
16. **Yuzhou Wang**, [Cassidy Barrientos](#), Ling Jin, Libby Koolik, Julian Marshall, [Lucas Rojas Mendoza](#), Alper Unal, Chandra Venkataraman, Yuhang Wang, Joshua Apte*. “Advancing state-level air quality management with new source-receptor tools.” [[Preprint Link](#)]

17. **Yuzhou Wang**, et al. “An air quality AI assistant for risk communication”
18. **Lucas Mendoza**, **Yuzhou Wang**, Libby Koolik, Joshua Apte. “Analyzing sources and spatial scales of air pollution disparities for California air basins.”
19. **Cassidy Barrientos**, **Yuzhou Wang**, Ling Jin, Libby Koolik, **Lucas Rojas Mendoza**, Alper Unal, Joshua Apte “Cross comparison of air quality tools and datasets and impacts on disparity estimates.”
20. **Cassidy Barrientos**, **Yuzhou Wang**, Ling Jin, Libby Koolik, **Lucas Rojas Mendoza**, Alper Unal, Joshua Apte “Co-benefit of air quality and climate from controlling industrial facilities in California.”
21. **Cassidy Barrientos**, **Yuzhou Wang**, Yejia Liao, Ling Jin, Joshua Apte “Fine scale air quality modeling for ambient NO_x.”

AWARDED GRANTS

- 2026 **PI**. National Academies of Sciences, Engineering, and Medicine (NASEM). “Gulf Research Program Early Career Fellowship - Community Track” \$76,000 (Total)
- 2026 **PI**. Texas A&M University Center for Environmental Health Research (TiCER). “Mobility-Informed Air Pollution Exposure and Hospital Admissions in Texas” \$50,000 (Total)
- 2026 **PI**. Texas A&M University Targeted Proposal Teams. “Multi-Source Integration of New Satellites, Low-Cost Sensors, and Human Mobility for Precision Air Pollution Exposure Assessment” \$50,000 (Total)
- 2026 **Co-Investigator**. U.S. Department of Housing and Urban Development. Community Development Block Grant Mitigation. PI: Jaimie Masterson. \$501,813 (Total); \$41,406 (Wang’s portion)
- 2026 **Contributor**. The National Institute of Environmental Health Sciences (NIEHS). “Effects of an Intervention on Shipping-Related Air Pollution and Health” PI: Eun-Sug Park. \$1,586,605 (Total); \$24,717 (Wang’s portion)

PRESENTATIONS

Conference presentations

- 2025 “New Source-Receptor Tools for State-Level Air Quality Management” In AGU Fall Meeting (Talk)
- 2025 (Invited) “Leveraging Machine Learning and Large Language Models for Air Quality Modeling and Communication.” In EnviBayes Workshop on Complex Environmental Data 2025 (Talk)
- 2024 “Gaps and disparities in U.S. ambient air monitoring network under new PM_{2.5} 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 NO₂ and PM_{2.5} 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)

Other invited talks & seminars

- 2026 “Tackling Air Pollution: New Models, Methods, and Policies” In the University of Texas San Antonio - Department of Civil and Environmental Engineering
- 2025 “Leveraging Machine Learning and Large Language Models for Air Quality Modeling and Communication”, EnviBayes Workshop on Complex Environmental Data 2025
- 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 NO₂ and PM_{2.5} air pollution in the United States.” Center for Air, Climate, & Energy Solutions Science Meeting

AWARDS AND HONORS

- 2026 Gulf Research Program Early-Career Research Fellowship, National Academies of Sciences, Engineering, and Medicine
- 2025 OneEarth OneHealth RCN Retreat Travel Awards
- 2017 Research Excellence Award, Tsinghua University
- 2016 Academic Progress Award, Tsinghua University
- 2016 Summer Research Abroad Fellowship, Tsinghua University
- 2016 Study Aboard Fellowship, Tsinghua University
- 2014 Volunteer Award, Tsinghua University
- 2013 First Prize, National Physics Olympiad (<0.01%)
- 2013 Second Prize, National Mathematical Olympiad
- 2013 Third Prize, National Chemistry Olympiad

TEACHING EXPERIENCE

Texas A&M University

- Instructor. Fundamentals of Air Quality (EVEN412, Upper-Level Undergraduate). Fall 2025; Fall 2026
- Instructor. Engineering Aspects of Air Pollution (CVEN 607, Graduate). Spring 2026

University of Washington/University of California, Berkeley

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

MENTORING EXPERIENCE AT TEXAS A&M UNIVERSITY

Current Doctoral Students

- Heewon Yim (Civil and Environmental Engineering)
- Alan Gonzalez (Civil and Environmental Engineering)

Current MS Students

- Reyna Burns (Civil and Environmental Engineering)
- Malvika Koushik (Computer Science and Engineering)
- Yesu Lokesh (Computer Science and Engineering)

Current Undergraduate Students

- Kielinski, Mason (Civil and Environmental Engineering)

PhD Committee

- Aaron Brown (Statistics)
- Amitesh Sabut (Civil and Environmental Engineering)
- Ziqi Zhou (Geography)

OTHER MENTORING EXPERIENCE

Graduate students

- Lucas Mendoza (Jul 2023 - Jul 2025, University of California, Berkeley): “*Air pollution management and intervention tool for India*” and “*Sources and spatial scales of air pollution exposure disparities in California*”
- Cassidy Barrientos (Dec 2023 - Jul 2025, University of California, Berkeley): “*A reduced-form air quality model and source receptor matrix in California*”

Undergraduate students

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

OTHER PROFESSIONAL EXPERIENCE

Postdoctoral Scholar

Department of Civil and Environmental Engineering, University of California, Berkeley

Berkeley, CA, USA

July 2023 – present

Graduate Research Assistant

Department of Civil and Environmental Engineering, University of Washington

Seattle, WA, USA

August 2017 – June 2023

Research Assistant

Center for Neighborhood Knowledge, University of California, Los Angeles

Los Angeles, CA, USA

July 2016 – September 2016

Research Assistant

Center for Earth System Science, Tsinghua University

Beijing, China

October 2015 – June 2017

Research Assistant

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

Beijing, China

June 2015 – August 2015

PROFESSIONAL ASSOCIATIONS

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

Member of the American Geophysical Union, 2023-present

ACADEMIC & COMMUNITY SERVICE

Proposal Reviewer:

- National Science Foundation (NSF), Computer and Information Science and Engineering (CISE), 2026

Department Service:

- Member, AREN Faculty Search Committee, 2026
- Reviewer, EVEN 400 Capstone Design Course, 2025

Journal Reviewer:

- *Nature Sustainability; Nature Cities; Nature Mental Health; Nature Communications; Environmental Science & Technology; Environmental Science & Technology Air; One Earth; Earth's Future; 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*

Professional Organization Committee:

- Member, AGU GeoHealth Early Career Committee
- Member, AGU GeoHealth Meetings Committee

Conference Paper & Presentation Reviewer:

- Transportation Research Board Annual Meeting - 2024
- American Geophysical Union Fall Meeting - 2023; 2024; 2025

Conference Convener & Chair:

- 2025 AGU Annual Meeting, oral and poster session “Computational Methods and Tools for Air Quality Exposure Assessments and Solutions”
- 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.