

Xinyuan HUANG

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Academic Appointments

Princeton University , Andlinger Center for Energy and the Environment Postdoctoral Research Associate	Princeton, NJ Apr 2024 – Present
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Education

The Pennsylvania State University Department of Civil and Environmental Engineering Ph.D. in Environmental Engineering Dissertation: Climate Policy, Air Quality, and Health: A Multi-scale Assessment of Impacts and Disparities Advisor: Dr. Wei Peng; Co-advisor: Dr. Klaus Keller	University Park, PA Aug 2019 – Mar 2024
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Stanford University Department of Civil and Environmental Engineering M.S. in Environmental Engineering and Science	Stanford, CA Sep 2015 – Jun 2017
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Peking University B.S. in Chemistry, College of Chemistry and Molecular Engineering B.A. in Economics, National School of Development	Beijing, China Sep 2011 – Jul 2015 Sep 2012 – Jul 2015
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Research Interests

Energy systems and integrated assessment modeling
Air pollution and health impacts
Health inequity and environmental justice
Realistic modeling of decarbonization pathways

Peer-reviewed Publications

Xinyuan Huang, Jinyu Shiwang, Klaus Keller, Wei Peng. “Fine-scale population, emissions, and atmospheric dynamics drive health disparity outcomes from energy transition.” *Earth’s Future* (2026)

Jinyu Shiwang, Wei Peng, **Xinyuan Huang**, Gokul Iyer, Vivek Srikrishnan, Klaus Keller. “Technology indicators enable early detection of decarbonization failures.” *Applied Energy* (2026)

Xinyuan Huang, Wei Peng, Alicia Zhao, Yang Ou, Shannon Kennedy, Gokul Iyer, Haewon McJeon, Ryna Cui, Nate Hultman. “Substantial air quality and health co-benefits from combined federal and subnational climate actions in the United States.” *One Earth* (2025)

Wei Peng, Susan Anenberg, John Bistline, ..., **Xinyuan Huang**, et al. “Seizing the policy opportunities for health- and equity-improving energy decisions.” *One Earth* (2025)

Xinyuan Huang, Vivek Srikrishnan, Jonathan Lamontagne, Klaus Keller, and Wei Peng. “Effects of global climate mitigation on regional air quality and health.” *Nature Sustainability* (2023)

Hui Yang, **Xinyuan Huang**, Dan Westervelt, Larry Horowitz, Wei Peng. “Socio-demographic factors shaping the future global health burden from air pollution.” *Nature Sustainability* (2023)

Working Paper and In-Review

Wei Peng*, Aniruddha Deshpande*, **Xinyuan Huang***, Jinyu Shiwan*, Frank Errickson, Gokul Iyer, Daniel H. Loughlin, Christopher G. Nolte, Steven J. Smith, Fabian Wagner, Pengfei Wang, Jie Zhang, Mark Budolfson, Noah Scovronick. “Complex factors influencing US air pollution equity under a Net-Zero transition.” (Revise and resubmit at *Nature Sustainability*)

*These authors contributed equally to this work.

Carla Campos, Yueqi Jiang, Kerem Ziya Akdemir, **Xinyuan Huang**, Dan Loughlin, Kendall Mongrid, Jennie Rice, Nathalie Voisin, Wei Peng. “Impacts of fine-scale power system dynamics on future air quality: A test case on the Western US.” (To be submitted)

Jinyu Shiwan*, Wei Peng, John Bistline, Jamil Farbes, **Xinyuan Huang**, Gokul Iyer, Jesse D. Jenkins, Eladio Knipping, Nicholas Mailloux, Erin Mayfield, Aranya Venkatesh, Qianru Zhu. “Energy technology choices shaping the air quality and health effects of a net-zero transition”. (Revise and resubmit at *Environmental Science and Technology*)

Other Publications

Xinyuan Huang, Alicia Zhao, Ryna Cui, Wei Peng. “Bridging climate and health: A collaborative path to policy-relevant science.” *iScience* (2025)

Alicia Zhao, Ryna Cui, Carla Campos Morales, Jiaxun Sun, Wei Peng, Claire Squire, Kiara Ordonez Olazabal, Xiangjie Chen, **Xinyuan Huang**, Kuishuang Feng, Adriana Bryant, Laura Hinkle, Stephanie Vo, Michelle Faggert, Camryn Dahl, and Nathan Hultman. *U.S. Clean Energy Policy Rollbacks: The Economic and Public Health Impacts Across States*. Policy report. Center for Global Sustainability, University of Maryland. June 2025

Wei Peng, **Xinyuan Huang**, Alicia Zhao, Yang Ou, Shannon Kennedy, Gokul Iyer, Haewon McJeon, Ryna Cui, Nate Hultman. *All-In Climate Action for Improved US Air Quality and Health Benefits*. Policy report. Center for Global Sustainability, University of Maryland and America is All In. December 2023

Teaching Experience

Teaching Assistant

Water and wastewater treatment (CE 371), Penn State University Fall 2019, Fall 2021

Guest Lectures

Energy-Environment Nexus (CE 597), Penn State University Fall 2023

Conference Presentations

2025

Princeton E-affiliates Partnership Retreat (Poster) Princeton, NJ

2024

AGU Annual Meeting (Oral and poster) Washington, DC

GCAM Annual Meeting (Poster) College Park, MD

American Meteorological Society (AMS) Annual Meeting (Oral) Baltimore, MD

2023

AGU Annual Meeting (Poster) San Francisco, CA

2022

AGU Fall Meeting (Poster) Chicago, IL

Integrated Assessment Modeling Consortium (IAMC) Annual Meeting (Oral)
INFORMS Annual Meeting (Oral)

College Park, MD
Indianapolis, IN

2021

AGU Fall Meeting (Poster)

New Orleans, LA

Invited Talks

2024

GCAM-USA State Applications Community of Practice
Andlinger Center for Energy and the Environment 2024 Summer Seminar

2023

The Joint Global Change Research Institute

Service

- Member: American Geophysical Union (AGU), American Meteorological Society (AMS)
- Reviewer: Communications Earth and Environment, Energy and Climate Change, Environmental Science and Technology, Frontiers in Public Health

Professional Experiences

The University of Maryland

Visiting Fellow at Center for Global Sustainability

College Park, MD
Sep 2023 – Dec 2024

The Joint Global Change Research Institute

Visiting Fellow

Advisor: Dr. Steven Smith

College Park, MD
May 2023 – Aug 2023

Massachusetts Institute of Technology

Research Associate at Sloan School of Management

Cambridge, MA
Jul 2018 – May 2019

S.F. Express Co. Ltd

Data Scientist

Shenzhen, China
Jul 2017 – May 2018

Stanford University

Research Assistant at Department of Statistics

Stanford, CA
Jan 2017 – Jun 2017

The World Bank Group

Short Term Temporary at Department of Trade and Competitiveness

Washington, DC
Jun 2016 – Aug 2016

China Investment Corporation

Analyst Intern at Special Investment Department

Beijing, China
Jul 2013 – Aug 2013

Skills

- Languages: English (professional proficiency), Mandarin Chinese (native)
- Programming and Computing: R, Python, SQL, Linux, HPC/cluster computing
- Modeling and Analytical Tools: Global Change Analysis Model (GCAM), International Futures (IFs), Intervention Model for Air Pollution (InMAP), The Environmental Benefits Mapping and Analysis Program (BenMAP)