

Postdoc and PhD Positions in Urban Climate/Air Quality Modeling at University of Southern California

Are you enthusiastic about leading the way in research to address urban climate and air pollution challenges? Join Dr. Jiachen Zhang's research group (<https://sites.usc.edu/jzhang/research/>), which is at the forefront of urban climate and air quality modeling and policy impact assessment.

We are seeking a PhD student and a postdoc to work on one or more of the projects below:

1. Assess the impact of energy and transportation policies (e.g., policies promoting electric vehicles) on urban climate, air quality, health, and equity
2. Improve the representation and simulation of per- and polyfluoroalkyl substances (PFAS) in atmospheric models
3. Simulate smoke transport and chemistry during wildland–urban interface (WUI) fires.
4. Integrate air quality modeling output with various observational data using machine learning techniques
5. Applicants are also encouraged to propose research ideas aligned with their interests that resonate with the overarching research objectives of Dr. Zhang's research group.

We welcome candidates with some of the following qualifications:

- Passion to address critical societal challenges related to climate and air quality through research and outreach
- Proficiency in air quality and climate modeling tools such as WRF, WRF-UCM, WRF-Chem, WRF-CMAQ, AERMOD, CESM, and GEOS-Chem
- Proficiency in machine learning techniques and computer programming (e.g., Python, MySQL, R, and Excel), including hands-on experience with complex datasets and statistical analysis.
- A strong background in engineering or science, such as coursework or research experience in Environmental, Mechanical, or Chemical Engineering, Atmospheric or Earth sciences, Environmental Health, or related fields

Prospective students and postdocs are encouraged to reach out to Dr. Jiachen Zhang at jiachen.zhang@usc.edu before **December 1st**. Postdoc applications are reviewed on a rolling basis. Please use the subject line “PhD-2025-[Name]” or “Postdoc-2025-[Name]”, combine the following documents into one PDF, and attach it to your email:

1. Curriculum Vitae (CV)
2. A concise personal statement (less than two pages) of your research interests, experiences, skill sets, potential research ideas, and career goals
3. Unofficial transcripts for all degrees (B.S., M.S., Ph.D., as applicable)
4. Contact information for recommenders (names, affiliations, and email addresses)



Application Information for PhD Students

Please review the USC application process via the following link: [USC Graduate Admissions](#). If you are interested in our group's research topics and want to make positive social impact through your research, please indicate Dr. Jiachen Zhang as a potential advisor in your application. To be considered for fellowships, application materials must be submitted no later than December 15th. Our PhD students are offered comprehensive financial support, including stipends, full tuition coverage, and health insurance.

Biography of Dr. Jiachen Zhang (<https://sites.usc.edu/jzhang/>)

Dr. Jiachen Zhang is a tenure-track Assistant Professor in the Department of Civil and Environmental Engineering at the University of Southern California (USC). She is also affiliated with the Department of Population and Public Health Services and the Spatial Sciences Institute at USC. Her research group investigates the interactions of air quality, climate, and society, quantifying the health and equity impacts of strategies aimed at mitigating climate change and air pollution.

Dr. Zhang holds a Ph.D. in Environmental Engineering from USC and a B.S. in Atmospheric Sciences from Peking University. During her doctoral and postdoctoral studies, she utilized and enhanced various climate and air quality models to assess the environmental impacts of adopting solar reflective cool surfaces, renewable energy, and electric cars. Prior to returning to USC, Dr. Zhang was the manager of the Mobile Source Technology Assessment and Modeling Section at the California Air Resources Board, where she led a team of scientists and engineers to conduct original research projects, develop emissions inventory, and inform first-of-their-kind policies aimed at promoting electric vehicles and reducing air pollutant emissions. Additionally, she serves as the secretary of the Air & Waste Management Association West Coast Section.

The University of Southern California (USC)

USC stands as a globally renowned private research (R1) university. Situated in the heart of Los Angeles, USC is in close proximity to leading technology firms, cutting-edge research institutions, and government agencies pioneering environmental regulations, offering a wealth of opportunities for collaborations and career prospects. The Viterbi School of Engineering at USC is ranked #9 in the United States by *U.S. News & World Report* and consistently attains top rankings with research expenditures typically exceeding \$183 million annually, solidifying its reputation as a world-class institution for engineering education and research.

