

PhD Student Opportunities

Urban Energy and Climate | Earth System Science | AI and Machine Learning

Dr. Xinchang “Cathy” Li is recruiting motivated PhD students to join her new research group in the Department of Civil and Environmental Engineering at the University of Wisconsin–Madison.

Preferred start: Summer or Fall 2027. A Spring 2027 start is also possible.

Funding: Full funding including a stipend, tuition waiver, and health insurance.

About the PI and Research Group

Dr. Cathy Li is a Linus Pauling Distinguished Postdoctoral Fellow at Pacific Northwest National Laboratory and will join [the Department of Civil and Environmental Engineering at UW–Madison](#) as an Assistant Professor in January 2027 through the [RISE-AI initiative](#). She earned her PhD and MS degrees in Civil Engineering from the University of Illinois Urbana-Champaign in 2025 and 2019, respectively, and her Bachelor’s degree in Building Services Engineering from The Hong Kong Polytechnic University.

Her group will study interactions among people, urban energy, and climate from local to global scales. Research will combine Earth system modeling, building energy and energy systems modeling, AI/ML, and remote sensing for sustainable and resilient cities. Main research directions include:

- **Urban energy and climate:** Advance understanding on how cities, climate, energy, and humans interact under global change and inform solutions that maximize co-benefits.
- **Energy system resilience:** Elucidate how risks propagate through weather, building, and power system networks for energy reliability and resilience.
- **Human-urban-Earth system modeling:** Develop models and data to improve the representation and understanding of urban energy and human dynamics and their interactions with Earth systems across scales.
- **Artificial intelligence:** Build and leverage hybrid AI/ML and physics-based modeling tools, surrogate models, foundation models, and agentic AI for science in climate, energy, and Earth system applications.

More information can be found on [her website](#).

Qualifications

An ideal candidate should:

- (1) hold an undergraduate degree in civil and environmental engineering, atmospheric and climate science, architectural engineering, geography, Earth science, mathematics, computer science, or a related discipline by the start date,
- (2) have a strong interest in one or more of the research areas above,
- (3) have a solid quantitative background and good academic writing and communication skills, and
- (4) be self-motivated, curious, creative, and capable of independent thinking, and enjoy interdisciplinary work and collaborations.

These qualifications will be a plus:

- (5) Proficiency in one or more coding languages (e.g., Python, Fortran, R, Julia) in scientific programming, and
- (6) Experience conducting research with one of more of the following: Earth system or regional climate modeling (e.g., CESM, E3SM, WRF), building energy modeling (e.g., EnergyPlus), urban climate modeling, remote sensing, high-performance computing, open-source workflows, traditional AI/ML, foundation models (e.g., Large Language-Vision Models; Earth Foundation Models), agentic AI.

How to Apply

Please complete the prospective PhD student form: <https://surveymars.com/q/druhKghEB>.

To ensure a fair and efficient review process, only applications submitted through the survey above will be reviewed; email applications will not be considered. Applications are reviewed on a rolling basis, and selected candidates will be contacted for next steps.

See [UW-Madison CEE PhD program information](#), and [Dr. Li’s website](#) for more information.