

ATS/CIRA Colloquium

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Hosted by Russ Schumacher

3 p.m. Thursday, April 13
ATS 101 and Zoom

Understanding Past and Future Climate Hazards and Impacts

Climate hazards like severe precipitation, flooding, drought, and extreme heat disproportionately impact society and ecosystems, but are challenging to model and predict due to their complexity and rarity. Thus, there are still many unanswered questions about the processes that affect extremes in a changing climate, and how we can design systems to make society more resilient to these events. In this talk, I will focus on three examples from my research to better understand climate hazards and impacts using a combination of data science methods, observational data, and global climate model simulations. First, I will show work to examine how economic damages from extreme events are affected by changes in climate, focusing specifically on changes in extreme precipitation and flooding. Second, I will present a new AI-based approach to evaluate the large-scale drivers of changes in extreme precipitation, highlighting an example from the U.S. Midwest region. Lastly, I will show work (started during my postdoc in ATS!) to identify multi-year climate predictability using deep learning. Hopefully, this talk can facilitate conversation about opportunities to collaborate across CSU on topics related to climate hazards and impacts.

Colloquia page: atmos.colostate.edu/colloquia