Xiaolu Li

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Pennsylvania State University
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EXPERIENCE

Postdoctoral Associate	Duke University, Durham, NC, USA	2024/7 - present
Postdoctoral Scholar	Pennsylvania State University, University Park, PA, USA	2023 - 2024
Postdoctoral Associate	Cornell University, Ithaca, NY, USA	2019 - 2022

EDUCATION

Ph.D. in **Atmospheric Science** **Cornell University**, Ithaca, NY, USA 2014 - 2019

Thesis: O*n the development and application of indicators to characterize the start of spring across the Northern Hemisphere in meteorological data, satellite remote sensing, and climate model simulations*

M.A. in **Geography** **University of Minnesota**, Minneapolis, MN, USA 2012 - 2014

Thesis: *Assessing forward modeling of tree-ring growth and the impacts of non-climatic factors on tree-ring width in the Northern Hemisphere*

B.S. in **Geography** **Peking University,** Beijing, China 2008 - 2012

Thesis: *Assessing multifunctionality of land use at county level: A case study of Fangshan District in Beijing*

B.E. in **Economics** (Double Major) **Peking University,** Beijing, China

PUBLICATIONS

13. **Li X.**, Ault, T. R., Richardson, A. D., Frolking, S., Herrera, D. A., Friedl, M. A., Carrillo, C. M., and Evans, C. P. (Accepted). Northern hemisphere land-atmosphere feedback from prescribed plant phenology in CESM. *Journal of Climate*.

12. **Li, X.**, Ault, T., Evans, C. P., Lehner, F., Carrillo, C. M., Donnelly, A., ... & Schwartz, M. D. (2023). Diverging Northern Hemisphere trends in meteorological versus ecological indicators of spring onset in CMIP6. *Geophysical Research Letters*, 50, e2023GL102833. 10.1029/2023GL102833.

11. **Li, X.**, Ault, T., Richardson, A. D., Carrillo, C. M., Lawrence, D. M., Lombardozzi, D., ... & Moon, M. (2023). Impacts of shifting phenology on boundary layer dynamics in North America in the CESM. *Agricultural and Forest Meteorology*, *330*, 109286. 10.1016/j.agrformet.2022.109286

10. Herrera, D.A., Book, B.I., Fasullo, J., Anchukaitis, K.J., Alessi, M.J., Martinez, C.J., Evans, C.P., **Li, X.**, Ellis, K.N., Mendez-Tejada, R., Ault, T.R., Centella-Artola, A., Stephenson, T.S., and Taylor, M.A. (2023) Observed changed in hydroclimate attributed to human forcing, *PLOS Climate*, 2(11), e0000303. 10.1371/journal.pclm.0000303

9. **Li, X.**, Melaas, E., Carrillo, C. M., Ault, T., Richardson, A. D., Lawrence, P., ... & Young, A. M. (2022). A comparison of land surface phenology in the Northern Hemisphere derived from satellite remote sensing and the Community Land Model. *Journal of Hydrometeorology*, *23*(6), 859-873

8. Evans, C. P., Coats, S., Carrillo, C. M., **Li, X.**, Alessi, M. J., Herrera, D. A., ... & Ault, T. R. (2022). Intrinsic Century-Scale Variability in Tropical Pacific Sea Surface Temperatures and their Influence on Western US Hydroclimate. *Geophysical Research Letters*, e2022GL099770.

7. Young, A.M., Friedl, M.A., Novick, K., Scott, R.L., Moon, M., Frolking, S., **Li, X.**, Carrillo, C.M. & Richardson, A.D. (2022). Disentangling the relative drivers of seasonal evapotranspiration across a continental-scale aridity gradient. *Journal of Geophysical Research: Biogeosciences*, p.e2022JG006916.

6. Carrillo, C. M., Coats, S., Newman, M., Herrera, D. A., **Li, X.**, Moore, R., ... & Ault, T. R. (2022). Megadrought: a series of unfortunate La Niña events?. *Journal of Geophysical Research: Atmospheres*, *127*(21), e2021JD036376.

5. Benton, B. N., Alessi, M. J., Herrera, D. A., **Li, X.**, Carrillo, C. M., & Ault, T. R. (2022). Minor impacts of major volcanic eruptions on hurricanes in dynamically-downscaled last millennium simulations. *Climate Dynamics*, 1-19.

4. Young, A. M., Friedl, M. A., Seyednasrollah, B., Beamesderfer, E., Carrillo, C. M., **Li, X.**, ... & Richardson, A. D. (2021). Seasonality in aerodynamic resistance across a range of North American ecosystems. *Agricultural and Forest Meteorology*, *310*, 108613.

3. Herrera, D. A., Ault, T. R., Carrillo, C. M., Fasullo, J. T., **Li, X.**, Evans, C. P., ... & Mahowald, N. M. (2020). Dynamical characteristics of drought in the Caribbean from observations and simulations. *Journal of Climate*, *33*(24), 10773-10797.

2. Seyednasrollah, B., Young, A. M., **Li, X.**, Milliman, T., Ault, T., Frolking, S., ... & Richardson, A. D. (2020). Sensitivity of deciduous forest phenology to environmental drivers: implications for climate change impacts across North America. *Geophysical Research Letters*, *47*(5), e2019GL086788.

1. Richardson, A. D., Hufkens, K., **Li, X.**, & Ault, T. R. (2019). Testing Hopkins' bioclimatic law with PhenoCam data. *Applications in Plant Sciences*, *7*(3), e01228.

Under review

1. **Li, X.**, Carrillo, C. M., Ault, T. R., Richardson, A. D., Friedl, M. A., and Frolking, S. (In revision). Evaluation of leaf phenology of different vegetation types from local to hemispheric scale in CLM. *Journal of Geophysical Research: Biogeosciences.* Preprint: 10.22541/essoar.168298711.15374345/v1

2. **Li X.**, Chen H., Wei Y., and Qiu T. (In revision). Species interactions modulate climate change impacts on plant phenology across the United States. *Global Ecology and Biogeography*

3. **Li, X.**, Wei Y., Chen H., Crimmins. T. M., and Qiu T. (Submitted). Precipitation delays fall senescence across interacting plant species in the contiguous United States. *New Phytologist*

In preparation (available upon request)

1. **Li, X.**, Ault, T. R., Zurita-Milla, R., Schwartz, M.D. (2024). Characterizing interannual to multi-decadal variability in the seasonal window of spring onset across the Northern Hemisphere. *Climate Dynamics.*

TEACHING EXPERIENCE

Guest lectures:

Deriving land surface phenology from remote sensing imagery, FOR 455 Remote Sensing and Spatial Data Handling, Pennsylvania State University, April 3, 2024

Terrestrial plant phenology variability and its relationship with environmental and other biotic factors, ECLGY 515 Advances in Ecology, Pennsylvania State University, September 20, 2023

Teaching assistant:

EAS 3420 Atmospheric Dynamics	Cornell University	Spring 2017/2018
EAS 3050 Climate Dynamics	Cornell University	Fall 2016/2017
GEOG 1403 Biogeography of the Global Garden	University of Minnesota	Spring 2014
GEOG/ESPM 1425 Meteorology	University of Minnesota	Fall 2013

PRESENTATIONS

Li, X., Qiu, T. (2023). Evaluating the impacts of climate factors and species interactions on fall phenology in the United States. 2023 American Geophysical Union Fall Meeting. San Francisco, CA. December 11-15, 2023

Li, X., Ault, T. R., Richardson, A. D., Frolking, S., Herrera, D. A., Friedl, M. A., Carrillo, C. M., Evans, C. P. and Qiu, T. (2023). Northern Hemisphere land-atmosphere feedback from prescribed plant phenology in CESM. 2023 American Geophysical Union Fall Meeting. San Francisco, CA. December 11-15, 2023

Li X., Ault, T. R., Richardson, A. D., Frolking, S., Herrera, D. A., Friedl, M. A., Carrillo, C. M., and Evans, C. P. (2023). Northern hemisphere land-atmosphere feedback from prescribed plant phenology in CESM. 28th Annual CESM Workshop. Hybrid meeting. June 12-14, 2023

Li, X., Carrillo, C. M., Ault, T. R., Richardson, A. D., Frolking, S. (2023). Characterizing leaf phenology of

different vegetation types from local to hemispheric scale in the CLM. CESM Land Model/Biogeochemistry Working Group Meeting 2023. Hybrid meeting. February 6-8, 2023

Li, X., Ault, T. R., Evans, C. P., Lehner, F., Carrillo, C. M., Donnelly, A.C., Gallinat, A.S., Crimmins, T., Schwartz, M.D. (2022). Growing uncertainty in projected spring onset variability in the Northern Hemisphere. 2022 American Geophysical Union Fall Meeting. Chicago, IL. December 12-16, 2022

Li, X., Carrillo, C. M., Ault, T. R. (2021). Shifting Plant Phenology in North America Alters Planetary Boundary Layer Height Differently in the Spring and Fall. 2021 American Geophysical Union Fall Meeting. Online. December 13-17, 2021

Li, X. & Ault, T. R. (2020). Characterizing the influence of plant phenology shifts on land-atmosphere interactions using the Community Earth System Model. CESM Land Model and BGC Working Group Meeting. Boulder, CO. March 3-5, 2020

Li, X. & Ault, T. R. (2019). Influences of shifting plant phenology on land-atmosphere coupling in the Community Earth System Model. Biogeoscience, 2019 American Geophysical Union Fall Meeting. San Francisco, CA. December 9-12, 2019

Li, X., Melaas, E., Ault, T. R., Carrillo, C. M., Friedl, M. A., Richardson, A. D. (2018). Northern Hemisphere patterns of land surface phenology in a state-of-the-art climate model and remote sensing. Biogeoscience, 2018 American Geophysical Union Fall Meeting. Washington, DC. December 10-14, 2018

Li, X., Ault, T. R., ZuritaMilla, R., Schwartz, M. D. (2016). Spring onset variations and influences of the climate system: results from new hemispheric-scale products and remote sensing. Biogeoscience, 2016 American Geophysical Union Fall Meeting. San Francisco, CA. December 12-16, 2016

Li, X., Ault, T. R., ZuritaMilla, R., Schwartz, M. D. (2015). Spring onset variations and long-term trends from new hemispheric-scale products. Biogeoscience, 2015 American Geophysical Union Fall Meeting. San Francisco, CA. December 14-18, 2015

Li, X., St. George, S., and Anchukaitis, K. (2014). Forward modeling of tree-climate relations across the Northern Hemisphere and temporal trends in climate sensitivity of tree-ring widths. Annual Meeting of the American Association of Geographers. Tampa, FL. April 8-12, 2014

Li, X., St. George, S., and Anchukaitis, K. (2013). Simulated tree growth across the Northern Hemisphere and the seasonality of climate signals encoded within tree-ring widths. Climate of the Common Era, 2013American Geophysical Union Fall Meeting. San Francisco, CA. December 9-13, 2013

Li, X., Zhao, X., and Li, P. (2013). Spatial patterns of surface air temperature and their relationship with land cover in Shenzhen, Southeast China. Annual Meeting of the American Association of Geographers. Los Angeles, CA. April 9-13, 2013

TECHNICAL SKILLS

Programming languages: MATLAB, C/C++, Python, Fortran

Statistical software: MS Excel, SPSS, Stata, R

Geospatial software: ArcGIS, IDRISI, ENVI

PROFESSIONAL MEMBERSHIP AND SERVICE

American Geophysical Union (member, OSPA judge); American Association of Geographers (member)

Journal reviewer for *Proceedings of the National Academy of Sciences (PNAS)*, *Agricultural and Forest Meteorology*, *Earth's Future*, *Geophysical Research Letters, Plant and Soil, Water Resources Research*, *Journal of Ecology*, *Scientific Reports*, *Remote sensing*, *Ecological Modelling*, and *Climate Research*