Zhengyu Xia

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EDUCATION

- 08/2015–05/2020 **Ph.D. in Earth and Environmental Sciences**, Lehigh University, USA
  Dissertation title: Synoptic-scale climate dynamics in southern Patagonia revealed through stable isotopes in precipitation and peat mosses
- 09/2011–06/2015 **B.S. in Geology**, China University of Geosciences, Wuhan, China

PROFESSIONAL EXPERIENCE

- 06/2020–Pres. Postdoctoral Research Associate, University of Massachusetts Amherst
- 08/2016–05/2020 Research and Teaching Assistant, Lehigh University

PUBLICATIONS

- Peer-reviewed journal articles:

Xia, Z., and Winnick, M. J. 2021. The competing effects of terrestrial evapotranspiration and raindrop re-evaporation on the deuterium excess of continental precipitation. *Earth and Planetary Science Letters*, 572, 117120.

Xia, Z., Oppedal, L. T., Van der Putten, N., Bakke, J., and Yu, Z, 2020. Ecological response of a glacier-fed peatland to late Holocene climate and glacier changes on subantarctic South Georgia. *Quaternary Science Reviews*, 250, 106679.

Xia, Z., and Yu, Z., 2020. Temperature-dependent oxygen isotope fractionation in plant cellulose biosynthesis revealed by a global dataset of peat mosses. *Frontiers in Earth Science*, 8, 307.

Xia, Z., Butorovic, N., and Yu, Z., 2020. The influence of synoptic weather types and moisture transport pathways on precipitation isotopes in southern Patagonia. *Atmosphere*, 11(5), 514.

Xia, Z., Zheng, Y., Stelling, J. M., Loisel, J., Huang, Y., and Yu, Z., 2020. Environmental controls on the carbon and water (H and O) isotopes in peatland *Sphagnum* mosses. *Geochimica et Cosmochimica Acta*, 277, 265–284.

Treat, C. C., Kleinen, T., Broothaerts, N., Dalton A. S., Dommain, R., Douglas, T. A., Drexler, J., Finkelstein S. A., Grosse, G., Hope, G., Hutchings, J., Jones, M. C., Kuhry, P., Lacourse, T., Lähteenoja, O., Loisel, J., Notebaert, B., Payne, R., Peteet, D., Sannel A. B. K.,

Stelling, J. M., Strauss, J., Swindles, G. T., Talbot, J., Tarnocai, C., Verstraeten, G., Williams, C. J., **Xia, Z.**, Yu, Z., Väliranta, M., Hättestrand, M., Alexanderson, H., and Brovkin, V., 2019. Widespread global peatland establishment and persistence over the last 130,000 y. *Proceedings of the National Academy of Sciences*, 116(11), 4822–4827.

Xia, Z., Yu, Z., and Loisel, J., 2018. Centennial-scale dynamics of the Southern Hemisphere Westerly Winds across the Drake Passage over the past two millennia. *Geology*, 46(10), 855–858.

- Peer-reviewed book chapters:

Xia, Z., and Yu, Z. Applications of stable isotopes to studies of paleohydrology and Paleoclimatology. *Encyclopedia of Water: Science, Technology and Society*, Ed. P. A. Maurice, Wiley. doi: 10.1002/9781119300762.wsts0042

CONFERENCE ABSTRACTS

Xia, Z., and Winnick, M. J. Seasonal water storage and evapotranspiration partitioning controls on the relationship between continental moisture recycling and precipitation deuterium excess. AGU Fall Meeting 2021, New Orleans, USA, and online

Stansfield, A., Booth, R., Scally, A., **Xia, Z.**, and Loisel, J. *Sphagnum* "peat-patch" expansion on the North Slope of Alaska. AGU Fall Meeting 2021, New Orleans, USA, and online

Yang, T., Zhao, H., **Xia, Z.**, Yu, Z., Li, H., Bu, Z., and Wang, S. Rapid ecohydrological response of a mountaintop peatland to recent climate warming in Northeast China. EGU General Assembly 2021, online

Xia, Z., Zheng, Y., Stelling, J. M., Loisel, J., Huang, Y., and Yu, Z. Environmental controls on the carbon and water (H and O) isotopes in peatland *Sphagnum* mosses. AGU Fall Meeting 2019, San Francisco, USA

Xia, Z. Investigating the influence of moisture sources and trajectories on monthly isotopic composition of precipitation using daily weather station data, HYSPLIT backward trajectory modeling, and moisture uptake analysis. AGU Fall Meeting 2018, Washington D.C., USA

Xia, Z., Yu, Z., Zheng, Y., Loisel J., and Huang, Y. Late-Holocene hydroclimate and atmospheric circulation variability in southern Patagonia: insights from triple stable isotopes ($\delta^{18}O$, $\delta^{13}C$, δD) of peat bog *Sphagnum* moss. AGU Fall Meeting 2017, New Orleans, USA

Treat, C. C., Broothaerts, N., Dalton, A., Dommain, R., Finkelstein, S., Grosse, G., Jones, M. C., Kleinen, T., Kuhry, P., Lacourse, T., Lähteenoja, O., Notebaert, B., Payne, R., Peteet, D. M., Sannel, B., Stelling, J., Strauss, J., Swindles, G., Talbot, J., Tarnocai, C., Verstraeten, G., Williams, C., **Xia, Z.**, Yu, Z., and Brovkin, V. Buried Peats: Past Peatland Distribution as an Indicator of Hydroclimate and Temperature. AGU Fall Meeting 2016, San Francisco, USA

Yu, Z., Beilman D., Loisel J., Stelling, J. M., **Xia, Z.**, Parnikoza, I. Solar heating, microclimate, and the formation of peat-accumulating ecosystems in Antarctica. XXXIV SCAR Open Science Conference (2016), Kuala Lumpur, Malaysia

Xia, Z., Yu, Z., Loisel, J., and Stelling J. M. A 500-year record of atmospheric circulation change in southern Patagonia from dual water isotopes of subfossil *Sphagnum* moss cellulose. VIII Southern Connection Congress (2016), Punta Arenas, Chile

WORKSHOP OR INVITED PRESENTATIONS

School of Geographical Sciences, Northeast Normal University, Changchun, China (2019)

PAGES CLIVASH2k Workshop, British Antarctic Survey, Cambridge, UK (2018)

HONORS AND AWARDS

Lehigh University EES Graduate Symposium best talk winner (2018, 2020)

Lehigh University Williams-Upton Summer Fellowship (2019)

The University of Utah SPATIAL short course participant support award (2019)

Lehigh University College of Arts and Sciences Summer Research Fellowship (2018)

Lehigh University Presidential Fellowship (2015)

CUG-Wuhan Presidential Scholarship (2013)

FIELD WORK EXPERIENCES

"Peatland territory" in Patagonia, Antarctic Peninsula (US Palmer Station), Alaska North Slope, northeastern and central China

SERVICES

Reviewer for *The Holocene*, *Climate of the Past*, US National Science Foundation, and Czech Science Foundation