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EDUCATION

- Ph.D., Atmospheric and Oceanic Sciences — May 2017
  University of Wisconsin-Madison, Madison, US
  Advisor: *Prof.* Zhengyu Liu
- M.S., Atmospheric and Oceanic Sciences — Jun 2011
  Peking University, Beijing, China
  Advisor: *Prof.* Haijun Yang
- B.S., Atmospheric Sciences — Jun 2008
  Peking University, Beijing, China

RESEARCH EXPERIENCE

- Project Scientist II, NSF National Center for Atmospheric Research (NCAR) — January 2022–present
- Project Scientist I, NSF NCAR — May 2020–January 2022
- Postdoctoral Research Fellow, University of Michigan — June 2017–May 2020
  Projects: Climate sensitivity and feedbacks; Water isotope simulation; Paleoclimate data assimilation for the Paleocene—Eocene Thermal Maximum and the last deglaciation
- Visiting Scholar, NSF NCAR — January 2014–January 2015
  Projects: Development and validation of the isotope-enabled Community Earth System Model
- Graduate Research Assistant, University of Wisconsin-Madison — August 2011–May 2017
  Projects: Interpretation and modeling of water isotopes; ENSO variability in the past and future; Holocene temperature conundrum; Abrupt climate changes and the large-scale ocean circulation

RESEARCH GRANTS

- 2024–2028 paleoWeather: A new paradigm for examining extreme events in past climates. Heising-Simons Foundation, $729,568 (PI: Otto-Bliesner; Co-PI: Amrhein, Zhu, Macarewich)
- 2023–2026 Collaborative Research: Reducing Model Uncertainty by Improving Understanding of Pacific Meridional Climate Structure during Past Warm Intervals. NSF P4CLIMATE #2303567, $170,080 (PI)
- 2022–2025 Collaborative Proposal: Tectonic degassing as a possible solution to the Miocene climate enigma. NSF P2C2 #2202777, $425,904 (PI)
- 2020–2023 Constraining the Physics that Regulate Equilibrium Climate Sensitivity through Simulation of LGM and Eocene Paleoclimates. NSF P2C2 #2002397 , $384,686 (PI: Poulsen at University of Michigan)

HONORS/AWARDS

- ◇ Nanne Weber Early Career Award, American Geophysical Union (AGU) — December 2023
- ◇ Reid Bryson Graduate Scholarship, University of Wisconsin-Madison — March 2015
- ◇ Merit student, Peking University — December 2009
- ◇ Outstanding Freshman Scholarship, Peking University — September 2004

PUBLICATIONS

76. Cooper, V. T., Armour, K. C., Hakim, G. J., Tierney, J. E., Osman, M. B., Proistosescu, C., Dong, Y., Burls, N. J., Andrews, T., Amrhein, D. E., **Zhu, J.**, Dong, W., Ming, Y., & Chmielowiec, P. (2024). Last Glacial Maximum pattern effects reduce climate sensitivity estimates. Science Advances, 10(16), eadk9461. doi:10.1126/sciadv.adk9461

75. Campbell, J., Poulsen, C. J., **Zhu, J.**, Tierney, J. E., & Keeler, J. (2024). CO2-driven and orbitally driven oxygen isotope variability in the Early Eocene. Clim. Past, 20(3), 495–522. doi:10.5194/cp-20-495-2024

74. Zhao, X., Liu, X., Lin, L., Qin, Y., Zelinka, M. D., Klein, S. A., Zhang, M., Zhang, K., Ma, P.-L., **Zhu, J.**, Lu, Z., & Saravanan, R. (2024). Larger Cloud Liquid Water Enhances Both Aerosol Indirect Forcing and Cloud Radiative Feedback in Two Earth System Models. *Geophysical Research Letters*, 51(2), e2023GL105529. doi:10.1029/2023GL105529

73. Bradley, S. L., Sellevold, R., Petrini, M., Vizcaino, M., Georgiou, S., **Zhu, J.**, Otto-Bliesner, B. L., & Lofverstrom, M. (2024). Surface mass balance and climate of the Last Glacial Maximum Northern Hemisphere ice sheets: simulations with CESM2.1. *Clim. Past*, 20(1), 211–235. doi:10.5194/cp-20-211-2024

72. **Zhu, J.**, Poulsen, C. J., & Otto-Bliesner, B. L. (2024). Modeling Past Hothouse Climates as a Means for Assessing Earth System Models and Improving the Understanding of Warm Climates. *Annual Review of Earth and Planetary Sciences*. doi:10.1146/annurev-earth-032320-100333

71. Inglis, G. N., Bhatia, R., Evans, D., **Zhu, J.**, Müller, W., Mattey, D., Thornalley, D. J. R., Stockey, R. G., & Wade, B. S. (2023). Surface Ocean Cooling in the Eocene North Atlantic Coincides With Declining Atmospheric CO2. *Geophysical Research Letters*, 50(24), e2023GL105448. doi:10.1029/2023GL105448

70. Dutta, D., Jucker, M., Sherwood, S. C., Meissner, K. J., Sen Gupta, A., & **Zhu, J.** (2023). Early Eocene low orography and high methane enhance Arctic warming via polar stratospheric clouds. *Nature Geoscience*, 16(11), 1027–1032. doi:10.1038/s41561-023-01298-w

69. Lofverstrom, M., & **Zhu, J.** (2023). Tropical Precipitation Woes in the Community Earth System Model Version 2. *Geophysical Research Letters*, 50(21), e2023GL104416. doi:10.1029/2023GL104416

68. Kelemen, F. D., Steinig, S., de Boer, A., **Zhu, J.**, Chan, W.-L., Niezgodzki, I., Hutchinson, D. K., Knorr, G., Abe-Ouchi, A., Ahrens, B. (2023). Meridional Heat Transport in the DeepMIP Eocene Ensemble: Non-CO2 and CO2 Effects. *Paleoceanography and Paleoclimatology*, 38(8), e2022PA004607. doi:10.1029/2022PA004607

67. Walters, A. P., Tierney, J. E., **Zhu, J.**, Meyers, S. R., Graves, K., & Carroll, A. R. (2023). Climate system asymmetries drive eccentricity pacing of hydroclimate during the early Eocene greenhouse. *Science Advances*, 9(31), eadg8022. doi:10.1126/sciadv.adg8022

66. Cramwinckel, M. J., Burls, N. J., Fahad, A. A., Knapp, S., West, C. K., Reichgelt, T., Greenwood, D. R., Chan, W.-L., Donnadieu, Y., Hutchinson, D. K., de Boer, A. M., Ladant, J.-B., Morozova, P. A., Niezgodzki, I., Knorr, G., Steinig, S., Zhang, Z., **Zhu, J.**, Feng, R., … Inglis, G. N. (2023). Global and Zonal-Mean Hydrological Response to Early Eocene Warmth. *Paleoceanography and Paleoclimatology*, 38(6), e2022PA004542. doi:10.1029/2022PA004542

65. Liu, W., Duarte Cavalcante Pinto, D., Fedorov, A., & **Zhu, J.** (2023). The Impacts of a Weakened Atlantic Meridional Overturning Circulation on ENSO in a Warmer Climate. *Geophysical Research Letters*, 50(8), e2023GL103025. doi:10.1029/2023GL103025

64. Gettelman, A., Morrison, H., Eidhammer, T., Thayer-Calder, K., Sun, J., Forbes, R., McGraw, Z., **Zhu, J.**, Storelvmo, T., & Dennis, J. (2023). Importance of ice nucleation and precipitation on climate with the Parameterization of Unified Microphysics Across Scales version 1 (PUMASv1). *Geosci. Model Dev.*, 16(6), 1735–1754. doi:10.5194/gmd-16-1735-2023

63. Goudsmit-Harzevoort, B., Lansu, A., Baatsen, M. L. J., von der Heydt, A. S., de Winter, N. J., Zhang, Y., Abe-Ouchi, A., de Boer, A., Chan, W.-L., Donnadieu, Y., Hutchinson, D. K., Knorr, G., Ladant, J.-B., Morozova, P., Niezgodzki, I., Steinig, S., Tripati, A., Zhang, Z., **Zhu, J.**, & Ziegler, M. (2023). The Relationship Between the Global Mean Deep-Sea and Surface Temperature During the Early Eocene. *Paleoceanography and Paleoclimatology*, 38(3), e2022PA004532. doi:10.1029/2022PA004532

62. Renoult, M., Sagoo, N., **Zhu, J.**, & Mauritsen, T. (2023). Causes of the weak emergent constraint on climate sensitivity at the Last Glacial Maximum. *Clim. Past*, 19(2), 323–356. doi:10.5194/cp-19-323-2023

61. Skinner, C. B., Lora, J. M., Tabor, C., & **Zhu, J.** (2023). Atmospheric River Contributions to Ice Sheet Hydroclimate at the Last Glacial Maximum. *Geophysical Research Letters*, 50(1), e2022GL101750. doi:10.1029/2022GL101750

60. Pratik, K., Blau, M. T., Ha, K.-J., & **Zhu, J.** (2022). Elevation-dependent temperature response in early Eocene using paleoclimate model experiment. *Environmental Research Letters*. doi:10.1088/1748-9326/ac9c74

59. Tierney, J. E., **Zhu, J.**, Li, M., Ridgwell, A., Hakim, G. J., Poulsen, C. J., Whiteford, R. D. M., Rae, J. W. B., & Kump, L. R. (2022). Spatial patterns of climate change across the Paleocene–Eocene Thermal Maximum. *Proceedings of the National Academy of Sciences*, 119(42), e2205326119. doi:10.1073/pnas.2205326119

58. Zhang, Z., Zhang, Z., He, Z., Tan, N., Guo, Z., **Zhu, J.**, Steinig, S., Donnadieu, Y., Ladant, J.-B., Chan, W.-L., Abe-Ouchi, A., Niezgodzki, I., Knorr, G., Hutchinson, D. K., & de Boer, A. M. (2022). Impact of mountains in Southern China on the Eocene climates of East Asia. *Journal of Geophysical Research: Atmospheres*, n/a(n/a), e2022JD036510. doi:10.1029/2022JD036510

57. Acosta, R. P., Ladant, J.-B., **Zhu, J.**, & Poulsen, C. J. (2022). Evolution of the Atlantic Intertropical Convergence Zone, and the South American and African Monsoons Over the Past 95-Myr and Their Impact on the Tropical Rainforests. *Paleoceanography and Paleoclimatology*, 37(7), e2021PA004383. doi:10.1029/2021PA004383

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55. Green, R. A., Menviel, L., Meissner, K. J., Crosta, X., Chandan, D., Lohmann, G., Peltier, W. R., Shi,

X., & **Zhu, J.** (2022). Evaluating seasonal sea-ice cover over the Southern Ocean at the Last Glacial Maximum. *Clim. Past*, 18(4), 845–862. doi:10.5194/cp-18-845-2022

54. Niezgodzki, I., Knorr, G., Lohmann, G., Lunt, D. J., Poulsen, C. J., Steinig, S., **Zhu, J.**, de Boer, A., Chan, W.-L., Donnadieu, Y., Hutchinson, D. K., Ladant, J.-B., & Morozova, P. (2022). Simulation of Arctic sea ice within the DeepMIP Eocene ensemble: Thresholds, seasonality and factors controlling sea ice development. *Global and Planetary Change*, 214, 103848. doi:10.1016/j.gloplacha.2022.103848

53. Kumar, D. M., Tierney, J. E., Bhattacharya, T., **Zhu, J.**, & Murray, J. W. (2022). Glacial warming in the Eastern Pacific Warm Pool. *Geophysical Research Letters*, n/a(n/a), e2022GL098830. doi:10.1029/2022GL098830

52. Reichgelt, T., Greenwood, D. R., Steinig, S., Conran, J. G., Hutchinson, D. K., Lunt, D. J., Scriven, L. J., & **Zhu, J.** (2022). Plant Proxy Evidence for High Rainfall and Productivity in the Eocene of Australia. *Paleoceanography and Paleoclimatology*, n/a(n/a), e2022PA004418. doi:10.1029/2022PA004418

51. Williams, C. J. R., Lunt, D. J., Salzmann, U., Reichgelt, T., Inglis, G. N., Greenwood, D. R., Chan, W.-L., Abe-Ouchi, A., Donnadieu, Y., Hutchinson, D. K., de Boer, A. M., Ladant, J.-B., Morozova, P. A., Niezgodzki, I., Knorr, G., Steinig, S., Zhang, Z., **Zhu, J.**, Huber, M., & Otto-Bliesner, B. L. (2022). African hydroclimate during the early Eocene from the DeepMIP simulations. *Paleoceanography and Paleoclimatology*, n/a(n/a), e2022PA004419. doi:10.1029/2022PA004419

50. Thompson, A. J., **Zhu, J.**, Poulsen, C. J., Tierney, J. E., & Skinner, C. B. (2022). Northern Hemisphere vegetation change drives a Holocene thermal maximum. *Science Advances*, 8(15), eabj6535. doi:10.1126/sciadv.abj6535

49. **Zhu, J.**, Otto-Bliesner, B. L., Brady, E. C., Gettelman, A., Bacmeister, J. T., Neale, R. B., Poulsen, C. J., Shaw, J. K., McGraw, Z. S., & Kay, J. E. (2022). LGM paleoclimate constraints inform cloud parameterizations and equilibrium climate sensitivity in CESM2. *Journal of Advances in Modeling Earth Systems*, n/a(n/a), e2021MS002776. doi:10.1029/2021MS002776 (*Wiley Top Downloaded Article*) (*Wiley Top Cited Article*)

48. Wen, Q., Liu, Z., **Zhu, J.**, Yan, M., He, C., Han, J., Liu, J., & Liang, Y. (2022). Local insolation drives Afro-Asian monsoon at orbital-scale in Holocene. *Geophysical Research Letters*, n/a(n/a), e2021GL097661. doi:10.1029/2021GL097661

47. Zhang, M., Liu, Y., **Zhu, J.**, Wang, Z., & Liu, Z. (2022). Impact of Dust on climate and AMOC during the Last Glacial Maximum Simulated by CESM1.2. *Geophysical Research Letters*, n/a(n/a), e2021GL096672. doi:10.1029/2021GL096672

46. Zhang, Y., de Boer, A. M., Lunt, D. J., Hutchinson, D. K., Ross, P., van de Flierdt, T., Sexton, P., Coxall, H. K., Steinig, S., Ladant, J.-B., **Zhu, J.**, Donnadieu, Y., Zhang, Z., Chan, W.-L., Abe-Ouchi, A., Niezgodzki, I., Lohmann, G., Knorr, G., Poulsen, C. J., & Huber, M. (2022). Early Eocene ocean meridional overturning circulation: the roles of atmospheric forcing and strait geometry. *Paleoceanography and Paleoclimatology*, n/a(n/a), e2021PA004329. doi:10.1029/2021PA004329

45. Inglis, G. N., Toney, J. L., **Zhu, J.**, Poulsen, C. J., Röhl, U., Jamieson, S. S. R., Pross, J., Cramwinckel, M., Krishnan, S., Pagani, M., Bijl, P. K., & Bendle, J. (2022). Enhanced terrestrial carbon export from East Antarctica during the early Eocene. *Paleoceanography and Paleoclimatology*, n/a(n/a), e2021PA004348. doi:10.1029/2021PA004348

44. Meegan Kumar, D., Tierney, J. E., Bhattacharya, T., **Zhu, J.**, McCarty, L., & Murray, J. W. (2021). Cli-

matic Drivers of Deglacial SST Variability in the Eastern Pacific. *Paleoceanography and Paleoclimatology*, 36(10), e2021PA004264. doi:10.1029/2021PA004264

43. Jepson, G., Carrapa, B., Gillespie, J., Feng, R., DeCelles, P. G., Kapp, P., Tabor, C. R., & **Zhu, J.** (2021). Climate as the Great Equalizer of Continental-Scale Erosion. *Geophysical Research Letters*, 48(20), e2021GL095008. doi:10.1029/2021GL095008

42. Osman, M. B., Tierney, J. E., **Zhu, J.**, Tardif, R., Hakim, G. J., King, J., & Poulsen, C. J. Globally resolved surface temperatures since the Last Glacial Maximum. *Nature*, 599(7884), 239–244. doi:10.1038/s41586-021-03984-4 *(news release)*

41. Buizert, C., Fudge, T. J., Roberts, W. H. G., Steig, E. J., Sherriff-Tadano, S., Ritz, C., Lefebvre, E., Edwards, J., Kawamura, K., Oyabu, I., Motoyama, H., Kahle, E. C., Jones, T. R., Abe-Ouchi, A., Obase, T., Martin, C., Corr, H., SeveringhaUS. J. P., Beaudette, R., Epifanio, J. A., Brook, E. J., Martin, K., Chappellaz, J., Aoki, S., Nakazawa, T., Sowers, T. A., Alley, R. B., Ahn, J., Sigl, M., Severi, M., Dunbar, N. W., Svensson, A., Fegyveresi, J. M., He, C., Liu, Z., **Zhu, J.**, Otto-Bliesner, B. L., Lipenkov, V. Y., Kageyama, M., and Schwander, J. (2021). Antarctic surface temperature and elevation during the Last Glacial Maximum. *Science*, 372, 1097-1101. doi:10.1126/science.abd2897

40. Kageyama, M., Harrison, S. P., Kapsch, M.-L., Löfverström, M., Lora, J. M., Mikolajewicz, U., … **Zhu, J.** (2021). The PMIP4-CMIP6 Last Glacial Maximum experiments: preliminary results and comparison with the PMIP3-CMIP5 simulations. *Clim. Past*, 17(3), 1065–1089. doi:10.5194/cp-17-1065-2021

39. Harrington, T. S., **Zhu, J.**, Skinner, C. B. (2021). Terrestrial Sources of Summer Arctic Moisture and the Implication for Arctic Temperature Patterns. *npj Climate and Atmospheric Science*, 4(1), 25. doi:10.1038/s41612-021-00181-y

38. He, C., Liu, Z., Otto-Bliesner, B. L., Brady, E. C., Zhu, C., Tomas, R., Clark, P. U., **Zhu, J.**, ... Bao, Y. (2021). Hydroclimate footprint of pan-Asian monsoon water isotope during the last deglaciation. *Science Advances*, 7(4), eabe2611. doi:10.1126/sciadv.abe2611

37. **Zhu, J.**, Otto-Bliesner, B., Brady, E., Poulsen, C.J., Tierney, J.E., Lofverstrom, M., DiNezio, P. (2021). Assessment of equilibrium climate sensitivity of the Community Earth System Model version 2 through simulation of the Last Glacial Maximum. *Geophysical Research Letters,* 48, e2020GL091220. doi:10.1029/2020GL091220 *(news release)*

36. **Zhu, J.**, & Poulsen, C. J. (2021). Last Glacial Maximum (LGM) climate forcing and ocean dynamical feedback and their implications for estimating climate sensitivity. *Clim. Past*, 17(1), 253–267. doi:10.5194/cp-17-253-2021

35. Du, X., Hendy, I., Hinnov, L., Brown, E., **Zhu, J.**, Poulsen, C. J. (2021). High-resolution interannual precipitation reconstruction of Southern California: Implications for Holocene ENSO evolution. *Earth Planet. Sci. Lett.*, 554, 116670. doi:10.1016/j.epsl.2020.116670

34. Lunt, D. J., Bragg, F., Chan, W. L., Hutchinson, D. K., Ladant, J. B., Niezgodzki, I., Steinig, S., Zhang, Z., **Zhu, J.**, Abe-Ouchi, A., de Boer, A. M., Coxall, H. K., Donnadieu, Y., Knorr, G., Langebroek, P. M., Lohmann, G., Poulsen, C. J., Sepulchre, P., Tierney, J., Valdes, P. J., Dunkley Jones, T., Hollis, C. J., Huber, M., & Otto-Bliesner, B. L. (2021). DeepMIP: model intercomparison of early Eocene climatic optimum (EECO) large-scale climate features and comparison with proxy data. *Clim. Past*, 17(1), 203–227. doi:10.5194/cp-17-203-2021

33. Windler G., Tierney J., **Zhu, J.**, & Poulsen, C. J. (2020). Unravelling glacial hydroclimate in the Indo-

Pacific Warm Pool: perspectives from water isotopes. *Paleoceanography and Paleoclimatology*, 35(12), e2020PA003985. doi:10.1029/2020PA003985

32. **Zhu, J.**, & Poulsen, C. J. (2020). On the Increase of Climate Sensitivity and Cloud Feedback With Warming in the Community Atmosphere Models. *Geophysical Research Letters*, 47(18), e2020GL089143. doi:10.1029/2020GL089143

31. Tierney, J. E., Poulsen, C. J., Montañez, I. P., Bhattacharya, T., Feng, R., Ford, H. L., Hönisch, B., Inglis, G. N., Petersen, S. V, Sagoo, N., Tabor, C. R., Thirumalai, K., **Zhu, J.**, Burls, N. J., Foster, G. L., Goddéris, Y., Huber, B. T., Ivany, L. C., Kirtland Turner, S., … Zhang, Y. G. (2020). Past climates inform our future. *Science,* 370(6517), eaay3701. doi:10.1126/science.aay3701 *(news release)*

30. Tierney J., **Zhu, J.**, King, J., Malevich, S. B., Hakim, G. J., & Poulsen, C. J. (2020). Glacial cooling and climate sensitivity revisited. *Nature*, 584(7822), 569–573. doi:10.1038/s41586-020-2617-x *(news release)*

29. Wang, Y., Hendy, I., **Zhu, J.** (2020) Expansion of the Southern California oxygen minimum zone during the early- to mid-Holocene due to reduced ventilation of the Northeast Pacific. *Quaternary Science Reviews*. 238, 106326. doi:10.1016/j.quascirev.2020.106326

28. Liu, Y., Wu, Y., Lin, Z., Zhang, Y., **Zhu, J.**, & Yi, C. (2020). Simulated Impact of the Tibetan Glacier Expansion on the Eurasian Climate and Glacial Surface Mass Balance during the Last Glacial Maximum. *Journal of Climate*. 33(15), 6491–6509. doi:10.1175/JCLI-D-19-0763.1

27. He, C., Liu, Z., **Zhu, J.**, Zhang, J., Gu, S., Otto-Bliesner, B. L., … Sun, J. (2020). North Atlantic subsurface temperature response controlled by effective freshwater input in *Heinrich* events. *Earth and Planetary Science Letters*. 539, 116247. doi:10.1016/j.epsl.2020.116247

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25. **Zhu, J.**, Poulsen, C. J., Otto-Bliesner, B. L., Liu, Z., Brady, E. C., & Noone, D. C. (2020). Simulation of early Eocene water isotopes using an Earth system model and its implication for past climate reconstruction. *Earth and Planetary Science Letters*, 537, 116114. doi:10.1016/j.epsl.2020.116164

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22. Brady, E. C., Stevenson, S., Bailey, D., Liu, Z., Noone, D., Nusbaumer, J., . . . **Zhu, J.** (2019). The connected isotopic water cycle in the Community Earth System Model version 1. *Journal of Advances in Modeling Earth Systems*, 11, 2547–2566. doi:10.1029/2019MS001663

21. Thompson, A. J., Skinner, C. B., Poulsen, C. J., & **Zhu, J.** Modulation of mid-Holocene African rainfall by dust aerosol direct and indirect effects. *Geophysical Research Letters*, 46(7), 3917–3826. doi:10.1029/2018GL081225

20. Thibodeau, B., Not, C., **Zhu, J.**, Schmittner, A., Noone, D., Tabor, C., …Liu, Z. (2018). Last century warming over the Canadian Atlantic shelves linked to weak Atlantic Meridional Overturning Circulation. *Geophysical Research Letters*, 45(22), 12–376. doi:10.1029/2018GL080083

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18. Liu, Y., Zhang, M., Liu, Z., Xia, Y., Huang, Y., Peng, Y., & **Zhu, J.** (2018). A Possible Role of Dust in Resolving the Holocene Temperature Conundrum. *Scientific Reports*, 8(1), 4434. doi:10.1038/s41598-018-22841-5

17. Tabor, C. R., Otto-Bliesner, B. L., Brady, E. C., Nusbaumer, J., **Zhu, J.**, Erb, M. P., …Noone, D. (2018). Interpreting Precession-Driven δ^{18}O Variability in the South Asian Monsoon Region. *Journal of Geophysical Research: Atmospheres*, 123(11), 5927–5946. doi:10.1029/2018JD028424

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14. Liu, W., Xie, S.-P., Liu, Z., & **Zhu, J.** (2017). Overlooked possibility of a collapsed Atlantic Meridional Overturning Circulation in warming climate. *Science Advances*, 3(1), e1601666. doi:10.1126/sciadv.1601666 *(news release)*

13. Lu, Z., Liu, Z., & **Zhu, J.** (2016). Abrupt intensification of ENSO forced by deglacial ice-sheet retreat in CCSM3. *Climate Dynamics*, 46(5–6), 1877–1891. doi:10.1007/s00382-015-2681-3

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5. Huang, B., **Zhu, J.**, & Yang, H. (2014). Mechanisms of Atlantic Meridional Overturning Circulation (AMOC) variability in a coupled ocean-atmosphere GCM. *Advances in Atmospheric Sciences*, 31(2), 241–251. doi:10.1007/s00376-013-3021-3

4. Liu, Z., Carlson, a. E., He, F., Brady, E. C., Otto-Bliesner, B. L., Briegleb, B. P., …**Zhu, J.** (2012). Younger Dryas cooling and the Greenland climate response to CO2. *Proceedings of the National Academy of Sciences*, 109(28), 11101–11104. doi:10.1073/pnas.1202183109 *(news release)*

3. **Zhu, J.**, & Yang, H. (2012). Response of the Atlantic Thermohaline Circulation to Changes of Atmospheric Green House Gases. *Acta Scientiarum Naturalium Universitatis Pekinensis*, 48(2), 231–238. (*in Chinese with English abstract*)

2. Yang, H., & **Zhu, J.** (2011). Equilibrium thermal response timescale of global oceans. *Geophysical Research Letters*, 38(14), L14711. doi:10.1029/2011GL048076

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INVITED SEMINARS & COLLOQUIA

- ◇ *ClimaTea*. Harvard University, Cambridge, US. April 2024.
- ◇ *Geophysical Fluid Dynamics Laboratory Seminar*. Princeton University, Princeton, US. February 2024.
- ◇ *Department of Atmospheric and Oceanic Sciences Colloquium*. University of Colorado Boulder, Boulder, US. January 2024.
- ◇ *Bristol Research Initiative for the Dynamic Global Environment (BRIDGE) seminar*. Bristol University, Virtual. January 2024.
- ◇ *Department of Earth, Atmospheric, and Planetary Sciences Colloquium*. Purdue University, West Lafayette, US. November 2023.
- ◇ *School of Engineering and Applied Science Colloquium in Climate Science*. Columbia University, New York, US. September 2023.
- ◇ *School of Geography and Ocean Science Colloquium*. Nanjing University, Nanjing, China. August 2023.
- ◇ *Atmosphere, Oceans, Climate Dynamics Seminars*. Yale University, Virtual. April 2023.
- ◇ *Atmospheric and Oceanic Sciences Seminars*. Peking University, Beijing, China. March 2023.
- ◇ *Climate Dynamics Seminars*. George Mason University, Fairfax, US. September 2022.
- ◇ *Atmospheric Physics Group Noble Seminar*. University of Toronto, Virtual. November 2021.
- ◇ *Atmospheric Science Seminar*. University of California, Davis, Virtual. October 2020.
- ◇ *Department of Earth, Environmental and Planetary Sciences Colloquium*. Brown University, Virtual. October 2020.

CONFERENCE PRESENTATIONS

- ◇ **Zhu, J.**, Otto-Bliesner, B., Brady, E., Gettelman, A., Eidhammer, T., *Can perturbing physical parameters in climate models solve classical paleoclimate questions?*, AGU Fall Meeting, San Francisco, US. December 2023. ***(INVITED)***

- ◇ **Zhu, J.**, Otto-Bliesner, B., Brady, E., Poulsen, C., Tierney, J., *Clearing clouds of uncertainty with the help of paleoclimate*, The 14th International Conference on Paleoceanography, Bergen, Norway. September 2022. ***(INVITED)***
- ◇ **Zhu, J.**, Otto-Bliesner, B., Brady, E., Poulsen, C., Tierney, J., *Using past climates to develop Earth system models: how a simple paleoclimate metric can help greatly*, AGU Fall Meeting, New Orleans, US. December 2021. ***(INVITED)***
- ◇ **Zhu, J.**, Otto-Bliesner, B., Brady, E., Poulsen, C., Tierney, J., *Informing cloud parameterizations through simulation of past extreme climates*, Laboratory for Atmospheric and Space Physics Science Team Meetings, University of Colorado-Boulder, Boulder, US. November 2021. ***(INVITED)***
- ◇ **Zhu, J.**, *The PhanTASTIC project will be fantastic for climate dynamics*, Phanerozoic Technique Averaged Surface Temperature Integrated Curve Workshop, Virtual. September 2021. ***(INVITED)***
- ◇ **Zhu, J.**, *Informing cloud parameterizations in CESM2 through simulation of the Last Glacial Maximum*, ECS and Cloud Feedback Symposium, Virtual. July 2021. ***(INVITED)***
- ◇ **Zhu, J.**, The National Academies of Sciences, Engineering, and Medicine: Identifying New Community-Driven Science Themes for NSF's Support of Paleoclimate Research: A Workshop, Virtual. June 2021. ***(INVITED)***
- ◇ **Zhu, J.**, *Implications of paleoclimate modeling for future climate change*, Deep-time Extreme Climates and Biodiversity Changes Forum, Nanjing University, Nanjing, China. March 2021. ***(INVITED)***
- ◇ **Zhu, J.**, *Assessment of equilibrium climate sensitivity of CESM2 through simulation of the Last Glacial Maximum*, CESM Atmosphere Working Group Meeting, Boulder, US. February 2021. ***(INVITED)***
- ◇ **Zhu, J.**, Poulsen, C., Tierney, J., Otto-Bliesner, B., *Constraining equilibrium climate sensitivity through simulation of Eocene extreme warmth*, AGU Fall Meeting, San Francisco, US. December 2019. ***(INVITED)***
- ◇ **Zhu, J.**, Otto-Bliesner, B., Brady, E., Guo, Z., Larson, V., Medeiros, B., Raghuraman, S. P. *Investigating the runaway of CESM under extreme warm conditions.* CESM Atmosphere Working Group Meeting, Boulder, US. February 2024. *(ORAL)*
- ◇ **Zhu, J.**, Otto-Bliesner, B., *Polar Amplification Over A Wide Range Of Warming In The Community Earth System Models (CESMs)*, Polar Amplification of Climate Change Across Hemispheres and Seasons: Causes and Constraints Workshop, Boulder, US. January 2024. *(POSTER)*
- ◇ **Zhu, J.**, Otto-Bliesner, B., Brady, E., Tierney, J., Poulsen, C., Feng, R., Tabor, C., Walters, A., *Early Eocene surface temperatures in an unprecedented high-resolution Earth system simulation*, AGU Fall Meeting, San Francisco, US. December 2023. *(ORAL)*
- ◇ **Zhu, J.** *Clearing clouds of uncertainty with the help of paleoclimate.* World Climate Research Programme Open Science Conference, Kigali, Rwanda. October 2023. *(ORAL)*
- ◇ **Zhu, J.**, Otto-Bliesner, B., Brady, E., Guo, Z., Larson, V., Medeiros, B. *Simulation of the Eocene hothouse climate using CESM2.* CESM Workshop, Boulder, US. June 2023. *(ORAL)*
- ◇ **Zhu, J.**, Otto-Bliesner, B., Brady, E., Gettelman, A., Eidhammer, T., *Examining state dependence of the cloud feedback using a perturbed parameter ensemble.* AGU Fall Meeting, Chicago, US. December 2022. *(ORAL)*
- ◇ **Zhu, J.**, *Paleoclimate Working Group Update.* CESM Workshop, Boulder, US. June 2022. *(ORAL)*

- ◇ **Zhu, J.**, Otto-Bliesner, B., Brady, E., Gettelman A., Eidhammer T., *Examining state dependence of the cloud feedback using a perturbed parameter ensemble.* The Pattern Effect: Coupling of SST Patterns, Radiative Feedbacks, and Climate Sensitivity Workshop, Boulder, US. May 2022. *(POSTER)*
- ◇ **Zhu, J.**, Otto-Bliesner, B., Brady, E., Garcia, R., Miles, M., Lamarque, J.F., *Effects of the stratospheric dynamics and chemistry on the surface climate of the Last Glacial Maximum in CESM2(WACCM6ma).* CESM Paleoclimate Working Group Meeting, Boulder, US. February 2022. *(ORAL)*
- ◇ **Zhu, J.**, Otto-Bliesner, B., Brady, E., Garcia, R., Mills, M., *Effects of the stratospheric dynamics and chemistry on the surface climate of the Last Glacial Maximum in CESM2(WACCM6ma).* AGU Fall Meeting, New Orleans, US. December 2021. *(ORAL)*
- ◇ **Zhu, J.**, Otto-Bliesner, B., Brady, E., Poulsen, C.J., Shaw, J.K., Kay, J.E., *Why does CESM2 simulate unrealistic ECS and LGM?* The Cloud Feedback Model Intercomparison Project Meeting. Virtual. September 2021. *(POSTER)*
- ◇ **Zhu, J.**, Otto-Bliesner, B., Brady, E., Poulsen, C.J., *An LGM-calibrated CESM2(CAM6) for paleoclimate studies.* CESM Workshop - Paleoclimate Working Group, Boulder, US. June 2021. *(ORAL)*
- ◇ **Zhu, J.**, Otto-Bliesner, B., Brady, E., Poulsen, C.J., *Inform cloud parameterizations in CESM2 through simulation of the Last Glacial Maximum.* CESM Workshop - Atmosphere Modeling Working Group, Boulder, US. June 2021. *(ORAL)*
- ◇ **Zhu, J.**, Otto-Bliesner, B., Brady, E., Poulsen, C.J., Tierney, J.E., Lofverstrom, M., DiNezio, P., *Update on the simulation of the Last Glacial Maximum using CESM2.* CESM Paleoclimate Working Group Meeting, Boulder, US. February 2021. *(ORAL)*
- ◇ **Zhu, J.**, Otto-Bliesner, B., Brady, E., Poulsen, C.J., Tierney, J.E., Lofverstrom, M., DiNezio, P., *Assessing equilibrium climate sensitivity of the Community Earth System Model version 2 through simulation of the Last Glacial Maximum.* AGU Fall Meeting, San Francisco, US. December 2020. *(ORAL)*
- ◇ **Zhu, J.**, C. Poulsen, *LGM climate forcing and ocean dynamical feedback and their implications for estimating climate sensitivity.* Paleoclimate Modelling Intercomparison Project PMIP2020, Nanjing, China. October 2020. *(ORAL)*
- ◇ **Zhu, J.**, C. Poulsen, *Can we directly estimate ECS using reconstructions of the LGM?.* CESM Workshop, Boulder, US. June 2020. *(ORAL)*
- ◇ **Zhu, J.**, C. Poulsen, B. Otto-Bliesner, and J. Tierney, *Constraining equilibrium climate sensitivity through simulation of past warm and cold climates.* CESM Paleoclimate Working Group Meeting, Boulder, US. February 2020. *(ORAL)*
- ◇ **Zhu, J.** and C. Poulsen, *On the temperature dependence of equilibrium climate sensitivity and cloud feedback.* AGU Fall Meeting, San Francisco, US. December 2019. *(POSTER)*
- ◇ **Zhu, J.**, C. Poulsen, J. Tierney, and P. DiNezio, *Investigating the Holocene ENSO variability through isotope-enabled modeling and model-data comparisons.* Water Isotopes and Climate Workshop, Boulder, US. October 2019. *(ORAL)*
- ◇ **Zhu, J.** and C. Poulsen, *Modeling water isotopes during the PETM and the implications for global temperature and hydrological changes.* Terrestrial and Coastal Climates of the Paleocene Eocene Thermal Maximum, Santa Cruz, US. September 2019. *(ORAL)*

- ◇ **Zhu, J.** and C. Poulsen, *Constraining future warming from past climates.* Aspen Global Change Institute workshop on 'The Future of Past Climate', Aspen, US. May 2019. *(ORAL)*
- ◇ **Zhu, J.**, C. Poulsen, and J. Tierney, *Simulation of Eocene extreme warmth and high climate sensitivity through cloud feedbacks.* CESM Paleoclimate Working Group Meeting, Boulder, US. February 2019. *(ORAL)*
- ◇ **Zhu, J.**, C. Poulsen, and J. Tierney, *Simulating Eocene extreme warmth and high climate sensitivity through low-cloud feedbacks.* AGU Fall Meeting, Washington, D.C., US. December 2018. *(ORAL)*
- ◇ **Zhu, J.**, C. Poulsen, Z. Liu, E. Brady, B. Otto-Bliesner, and D. Noone, *Modeling the oxygen isotope in the early Eocene hothouse climate using an isotope-enabled Earth system model.* Goldschmidt Conference, Boston, US. August 2018. *(POSTER)*
- ◇ **Zhu, J.**, C. Poulsen, *Simulating the Eocene hothouse climate using the water isotope-enabled Community Earth System Model (CESM1.2).* DeepMIP Conference, Bristol, UK. July 2018. *(ORAL)*
- ◇ **Zhu, J.**, Z. Liu, E. Brady, B. Otto-Bliesner, S. Marcott, J. Zhang, X. Wang, J. Nusbaumer, T. Wong, A. Jahn, and D. Noone, *Investigating the direct meltwater effect in terrestrial oxygen-isotope records using an isotope-enabled Earth system model.* CESM Paleoclimate Working Group Meeting, Boulder, US. March 2018. *(ORAL)*
- ◇ **Zhu, J.**, Z. Liu, E. Brady, B. Otto-Bliesner, S. Marcott, J. Zhang, X. Wang, J. Nusbaumer, T. Wong, A. Jahn, and D. Noone, *Investigating the direct meltwater effect in terrestrial oxygen-isotope records using an isotope-enabled Earth system model.* AGU Fall Meeting, New Orleans, US. December 2017. *(ORAL)*
- ◇ **Zhu, J.**, Z. Liu, B. Otto-Bliesner, E. Brady, D. Noone, J. Zhang, R. Tomas, A. Jahn, J. Nusbaumer, and T. Wong. *Reduced ENSO Variability at the LGM Revealed by an Isotope-enabled Earth System Model.* CESM PaleoClimate Working Group Meeting, Boulder, US. March 2017. *(ORAL)*
- ◇ **Zhu, J.**, Z. Liu, B. Otto-Bliesner, E. Brady, D. Noone, J. Zhang, R. Tomas, A. Jahn, J. Nusbaumer, and T. Wong. *Reduced ENSO Variability at the LGM Revealed by an Isotope-enabled Earth System Model.* AGU Fall Meeting, San Francisco, US. December 2016. *(ORAL)*
- ◇ **Zhu, J.**, Z. Liu, B. Otto-Bliesner, E. Brady, D. Noone, J. Zhang, R. Tomas, A. Jahn, J. Nusbaumer, and T. Wong. *Reduced ENSO Variability at the LGM Revealed by an Isotope-enabled Earth System Model.* CLIVAR Open Science Conference, Qingdao, China. September 2016. *(ORAL)*
- ◇ **Zhu, J.**, Z. Liu, X. Zhang, I. Eisenman, and W. Liu. *Linear Weakening of the AMOC in Response to Lowering Ice-sheet Topography in CCSM3.* High-Resolution Proxies of Paleoclimate Workshop, Madison, US. May 2015. *(POSTER)*
- ◇ **Zhu, J.**, Z. Liu, J. Zhang, and W. Liu. *AMOC response to global warming: dependence on the background climate and response timescale.* CESM Workshop, Breckenridge, US. June 2014. *(POSTER)*
- ◇ **Zhu, J.**, Z. Liu, X. Zhang, I. Eisenman, and W. Liu. *Transient weakening of the AMOC to a receding glacial ice sheet in CCSM3 and its physical mechanisms.* CESM Workshop, Breckenridge, US. June 2014. *(ORAL)*

PROFESSIONAL SERVICES

- ◇ **Co-chair:** Community Earth System Model Paleoclimate Working Group, NSF NCAR (April 2022–present)
- ◇ **Founding Steering Committee:** Paleoclimate Advances Webinar Series (PAWS) (2022–present)

- ◇ **Committee Member:** Diversity, Equity & Inclusion of Climate and Global Dynamics Laboratory at NSF NCAR (2022–2024)
- ◇ **Peer Review:** Nature, Nature Climate Change, Nature Geoscience, Proceedings of the National Academy of Sciences, Science Advances, Nature Communications, Scientific Data, Science Bulletin, Geophysical Research Letters, Earth and Planetary Science Letters, Journal of Advances in Modeling Earth Systems, Journal of Geophysical Research–Oceans, Journal of Geophysical Research–Atmospheres, Journal of Climate, Climate Dynamics, Earth System Dynamics, Earth System Science Data, Quaternary Science Reviews, Climate of the Past, Paleoceanography and Paleoclimatology, Geology, Journal of Quaternary Science, Earth and Space Science, Frontiers in Climate, Frontiers in Marine Science, Atmosphere, Climate, Water, Sustainability
- ◇ **Proposal Review:** US National Science Foundation, Poland National Science Center
- ◇ **Convener:** 2023 AGU Fall Meeting Session PP43C: Water Isotope Systematics: Improving Modern and Paleoclimate Interpretations; 2021 AGU Fall Meeting Session PP002: A high-temporal-resolution view of deep-time greenhouse climates; 2018 Goldschmidt Conference Session 08a: Understanding Past and Present Climate with Water Isotopes

TEACHING/MENTORING EXPERIENCE

- ◇ Visitor Host, Fen Zhang, Chinese Academy of Sciences — April 2023–present
- ◇ Visitor Host, Venkata Siva Subrahmanyam Kattamuri, University of Bremen — November 2023
- ◇ Visitor Host, Adam Aleksinski, Purdue University — May 2022
- ◇ Postdoctoral Mentor, Feng Zhu, NSF NCAR — February 2023–present
- ◇ Postdoctoral Mentor, Chijun Sun, NSF NCAR Advanced Study Program — October 2021–November 2023
- ◇ PhD Committee Member: Mary Grace Albright (University of Connecticut), Pratik Kad (Pusan National University)
- ◇ Certificate in *Early Career Leadership Program*, NSF NCAR — January–August 2022
- ◇ Lecturer of *CESM Tutorial: Water Isotope Modeling with CESM*, NSF NCAR — August 2021, 2022
- ◇ Certificate in *Postdoctoral Short Course on College Teaching in Science and Engineering*, University of Michigan — January 2019–April 2019
- ◇ Teaching Assistant of *Introduction of Atmospheric Science*, School of Physics, Peking University — September 2009–January 2010
- ◇ Teaching Assistant of *Descriptive Physical Oceanography*, School of Physics, Peking University — September 2008–January 2009

PROFESSIONAL AFFILIATIONS

American Geophysical Union

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