CURRICULUM VITAE

DR. JESSICA E. TIERNEY

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Appointments

UNIVERSITY OF ARIZONA — Tucson, AZ
May 2022–Present Professor
Thomas R. Brown Distinguished Chair in Integrative Science

UNIVERSITY OF ARIZONA — Tucson, AZ
May 2015–April 2022 Associate Professor

WOODS HOLE OCEANOGRAPHIC INSTITUTION — Woods Hole, MA
July 2012–April 2015 Assistant Scientist

LAMONT-DOHERTY EARTH OBSERVATORY OF COLUMBIA UNIVERSITY — New York, NY
2010–2012 NOAA/UCAR Climate and Global Change Postdoctoral Fellow

Education

BROWN UNIVERSITY — Providence, RI
2010 Ph.D., Geology. Specialty: Paleoclimatology and Organic Geochemistry

BROWN UNIVERSITY — Providence, RI
2008 M.Sc., Geology

BROWN UNIVERSITY — Providence, RI
2005 B.A., (*Magna cum Laude*) Geology

Peer-Reviewed Publications

(*student, **guest student, †postdoc)

112. O'Mara, N. A., P. B. deMenocal, K. T. Uno, **J. E. Tierney**, G. Winckler, & P. J. Polissar (2025). Capturing Vegetation Gradients Along the West African Margin Using Terrestrial Plant Biomarkers in Marine Sediments. *Geochemistry, Geophysics, Geosystems*, 26(7), e2025GC012274.

111. Rattanasriampaipong, R.†, **J. E. Tierney**, J. T. Abell†, & L. D. Gilmore (2025). A Nutrient Effect on the TEX_{86} Paleotemperature Proxy. *Geophysical Research Letters*, 52(12), e2025GL115237.

110. Harris, K. D.*, Tierney, J. E., Muñoz, S. E., & Anchukaitis, K. J. (2025), Climate variability in the Gulf of California over the last 1,300 years. *Paleoceanography and Paleoclimatology*, 40(2), e2024PA004912.

109. **Tierney, J.E.**, King, J., Osman, M.B., Abell, J.T., Burls, N.J., Erfani, E., Cooper, V.T. and Feng, R. (2025), Pliocene warmth and patterns of climate change inferred from paleoclimate data assimilation. *AGU Advances*, 6(1), e2024AV001356.

108. Judd, E. J.†, **J. E. Tierney**, D. J. Lunt, I. P. Montañez, B. T. Huber, S. L. Wing, P. J. Valdes (2024), A 485 million-year history of Earth's surface temperature, *Science*, 385 eadk3705.

107. Tran, T. T.*, L. Stevens, **J. E. Tierney**, T. Vu-Van (2024), Biomarker reconstructions of temperature and hydroclimate variability in Vietnam during Marine Isotope Stage 3, *Quaternary Science Reviews*, 341, 108893.

106. Lunt, D. J., Otto-Bliesner, B. L., Brierley, C., Haywood, A., Inglis, G. N., Izumi, K., Kageyama, M., Kaufman, D., Mauritsen, T., McClymont , E. L., Salzmann, U., Steinig, S., **Tierney, J. E.**, Zhao, A. & Zhu, J. (2024). Paleoclimate data provide constraints on climate models' large-scale response to past CO_2 changes. Communications Earth & Environment, 5(1), 419.

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

104. Campbell, J., C. J. Poulsen, J. Zhu, **J. E. Tierney**, J. Keeler (2024), CO_2-driven and orbitally driven oxygen isotope variability in the Early Eocene, *Climate of the Past*, 20 495-522.

103. Peaple, M. D.**, T. Bhattacharya, **J. E. Tierney**, J. R. Knott, T. K. Lowenstein, S. J. Feakins (2024), Biomarker Evidence for an MIS M2 Glacial-Pluvial in the Mojave Desert Before Warming and Drying in the Late Pliocene, *Paleoceanography and Paleoclimatology* 39, e2023PA004687.

102. King, J.*, **J. E. Tierney**, M. B. Osman†, E. J. Judd†, K. J. Anchukaitis (2023), DASH: a MATLAB toolbox for paleoclimate data assimilation, *Geoscientific Model Development*, 16, 5653–5683.

101. Inglis, G. N., P. Martínez-Sosa*, **J. E. Tierney**, C. R. Witkowski, S. Lyons, A. A. Baczynski, K. H. Freeman (2023), Impact of organic carbon reworking upon GDGT temperature proxies during the Paleocene-Eocene Thermal Maximum, *Organic Geochemistry*, 183, 104644.

100. Walters, A. P.†, **J. E. Tierney**, J. Zhu, S. R. Meyers, K. Graves, A. R. Carroll (2023), Climate system asymmetries drive eccentricity pacing of hydroclimate during the early Eocene greenhouse, *Science Advances*, 9, eadg8022.

99. Martínez-Sosa, P.*, **J. E. Tierney**, L. C. Pérez-Angel., I. C. Stefanescu**, J. Guo, F. Kirkels, J. Sepúlveda, F. Peterse, B. N. Shuman, A. V. Reyes (2023), Development and application of the Branched and Isoprenoid GDGT Machine learning Classification algorithm (BIGMaC) for paleoenvironmental reconstruction, *Paleoceanography and Paleoclimatology* 38, e2023PA004611.

98. So, R. T.**, T. K. Lowenstein, E. Jagniecki, **J. E. Tierney**, S. J. Feakins (2023), Holocene water balance variations in Great Salt Lake, Utah: application of GDGT indices and the ACE salinity proxy, *Paleoceanography and Paleoclimatology*, e2022PA004558.

97. Kielhofer, J. R.**, **J. E. Tierney**, J. D. Reuther, B. A. Potter, C. E. Holmes, F. B. Lano e, J. A. Esdale, M. J. Wooller, N. H. Bigelow (2023), BrGDGT temperature reconstruction from interior Alaska: Assessing 14,000 years of deglacial to Holocene temperature variability and potential effects on early human settlement, *Quaternary Science Reviews*, 303, 107979.

96. Windler, G.*, **J. E. Tierney**, P. B. deMenocal (2023), Hydroclimate Variability in the Equatorial Western Indian Ocean for the Last 250,000 Years, *Paleoceanography and Paleoclimatology*. 38. e2022PA004530.

95. Olson, K. J., E. Guillerm, M. D. Peaple**, T. K. Lowenstein, V. Gardien, F. Caupin, S. J. Feakins, **J. E. Tierney**, J. Stroup, S. Lund, D. McGee (2023), Application of Brillouin thermometry to latest Pleistocene and Holocene halite from Searles Lake, California, USA, *Earth and Planetary Science Letters*, 602 117913.

94. Fox, M. L.**, **J. E. Tierney**, H. Lu, S. Wang, W. Xia, H. Zhang, J. Wu (2023), Leaf wax isotopes reveal distinct hominin paleoenvironments in the Eastern Qinling Mountains of central China, *Quaternary Science Revirews*, 299, 107845.

93. Judd, E. J.†, **J. E. Tierney**, B. T. Huber, S. L. Wing, D. J. Lunt, H. L. Ford, G. N. Inglis, E. L. McClymont, C. L. O'Brien, R. Rattanasriampaipong, W. Si, M. L. Staitis, K. Thirumulai, E. Anagnostou, M. J. Cramwinckel, R. R. Dawson, D. Evans, W. R. Gray, E. L. Grossman, M. J. Henehan, B. N. Hupp, K. G. MacLeod, L. K. O'Connor†, M. L. Sánchez Montes, H. Song, Y. G. Zhang (2022), The PhanSST global database of Phanerozoic sea surface temperature proxy data. Scientific Data, 9, 753.

92. Bhattacharya, T., R. Feng, **J. E. Tierney**. C. Rubbelke, N. Burls, S. Knapp, M. Fu (2022), Expansion and intensification of the North American Monsoon during the Pliocene, *AGU Advances* 3, e2022AV000757.

91. Degroot, D., K. J. Anchukaitis, **J. E. Tierney**, F. Reide, A. Manica, E. Moesswilde, N. Gauthier (2022), The history of climate and society: a review of the influence of climate change on the human past, *Environmental Research Letters*, 17, 103001.

90. **J. E. Tierney**, J. Zhu, M. Li, A. Ridgwell, G. J. Hakim, C. J. Poulsen, R. D. M. Whiteford, J. W. B. Rae, L. R. Kump (2022), Spatial patterns of climate change across the Paleocene-Eocene Thermal Maximum, *Proceedings of the National Academy of Sciences*, 119, e2205326119.

89. Peaple, M. D.**, T. Bhattacharya, T. Lowenstein, D. McGee, K. Olson, J. S. Stroup, **J. E. Tierney**, S. J. Feakins (2022), Biomarker and pollen evidence for late Pleistocene pluvials in the Mojave Desert, *Paleoceanography and Paleoclimatology*, 37, e2022PA004471.

88. Tibbett, E. J., S. Warny, **J. E. Tierney**, J. S. Wellner, S. J. Feakins (2022), Cenozoic Antarctic Peninsula temperatures and glacial erosion signals from a multi-proxy biomarker study, *Paleoceanography and Paleoclimatology* e2022PA004430.

87. Ramos, R. D., A. N. LeGrande, M. L. Griffiths, G. S. Elsaesser, D. T. Litchmore, **J. E. Tierney**, F. S. R. Pausata, J. Nusbaumer (2022), Constraining clouds and convective parameterizations in a climate model using paleoclimate data, *Journal of Advances in Modeling Earth Systems* 14, e2021MS002893.

86. Brennan, P. R., T. Bhattacharya, R. Feng, **J. E. Tierney**, E. Jorgensen (2022), Patterns and mechanisms of northeast Pacific temperature response to Pliocene boundary conditions, *Paleoceanography and Paleoclimatology* 37, e2021PA004370.

85. **Tierney, J. E.**, A. Torfstein, T. Bhattacharya (2022), Late Quaternary hydroclimate of the Levant: the leaf wax record from the Dead Sea. *Quaternary Science Reviews* 289, 107613.

84. Meegan Kumar, D.*, **J. E. Tierney**, T. Bhattacharya, J. Zhu, J. W. Murray (2022), Glacial warming in the Eastern Pacific Warm Pool. *Geophysical Research Letters* 49, e2022GL098830.

83. Peaple, M. D.**, E. J. Beverly, B. Garza, S. Baker, N. E. Levin, **J. E. Tierney**, C. Häggi, S. J. Feakins (2022) Identifying the drivers of GDGT distributions in alkaline soil profiles within the Serengeti ecosystem. *Organic Geochemistry* 169, 104433.

82. Inglis, G. N., T. Bhattacharya, J. D. Hemingway, E. H. Hollingsworth, S. J. Feakins, and **J. E. Tierney** (2022) Biomarker Approaches for Reconstructing Terrestrial Environmental Change. *Annual Review of Earth and Planetary Sciences*, 50, 369–394.

81. Thompson, A. J., J. Zhu, C. J. Poulsen, **J. E. Tierney**, C. B. Skinner (2022), Northern Hemisphere vegetation change drives a Holocene thermal maximum. *Science Advances* 8, eabj6535.

80. Osman, M. B.[†], **J. E. Tierney**, J. Zhu, R. Tardif, G. J. Hakim, J. King, C. J. Poulsen (2021), Globally resolved surface temperatures since the Last Glacial Maximum. *Nature* 599, 239–244.

79. Meegan Kumar, D.[*], **J. E. Tierney**, T. Bhattacharya, J. Zhu, L. McCarty[*], J. W. Murray (2021), Climatic drivers of deglacial SST variability in the eastern Pacific. *Paleoceanography and Paleoclimatology*. e2021PA004264.

78. Windler, G.[*], **J. E. Tierney**, K. J. Anchukaitis (2021). Glacial-Interglacial Shifts Dominate Tropical Indo-Pacific Hydroclimate During the Late Pleistocene. *Geophysical Research Letters*, 48, e2021GL093339.

77. Martínez-Sosa, P.[*], **J. E. Tierney**, I. C. Stefanescu[**], E. D. Crampton-Flood[**], B. N. Shuman, C. Routson (2021). A global Bayesian temperature calibration for lacustrine brGDGTs. *Geochimica et Cosmochimica Acta*, 15, 87–105.

76. King, J. M.[*], K. J. Anchukaitis, **J. E. Tierney**, G. J. Hakim, J. Emile-Geay, F. Zhu (2021). A data assimilation approach to last millennium temperature field reconstruction using a limited high-sensitivity proxy network. *Journal of Climate*, 34, 7091–7111.

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74. Tibbett, E. J.[**], H. D. Scher, S. Warny, **J. E. Tierney**, S. Passchier, S. J. Feakins (2021). Late Eocene Record of Hydrology and Temperature From Prydz Bay, East Antarctica. *Paleoceanography and Paleoclimatology*, 36, e2020PA004204.

73. More, K. D., Wuchter, C., Irigoien, X., **J. E. Tierney**, Giosan, L., Grice, K., Coolen, M. J. L. (2021). Subseafloor Archaea reflect 139 kyrs of paleodepositional changes in the northern Red Sea. *Geobiology*, 19, 162–172.

72. Peaple, M. D.[**], **J. E. Tierney**, D. McGee, T. K. Lowenstein, T. Bhattacharya, S. J. Feakins (2021). Identifying plant wax inputs in lake sediments using machine learning. *Organic Geochemistry*, 156, 104222.

71. Stefanescu, I[**], B. N. Shuman, **J. E. Tierney** (2021). Temperature and water depth effects on brGDGT distributions in sub-alpine lakes of mid-latitude North America. *Organic Geochemistry*, 152, 104174.

70. Cai, W., C. Clapp, I. Das, S. Perkins-Kirkpatrick, A. Thomas, **J. E. Tierney**. (2021). Reflections on weather and climate research. *Nature Reviews Earth & Environment*, 2, 9–14.

69. Zhu, J., B. L. Otto-Bliesner, E. C. Brady, C. J. Poulsen, **J. E. Tierney**, M. Lofverstrom, P. N. DiNezio (2021). Assessment of equilibrium climate sensitivity of the Community Earth System Model version 2 through simulation of the Last Glacial Maximum. *Geophysical Research Letters*, e2020GL091220.

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

67. Windler, G.*, **J. E. Tierney**, J. Zhu, C. J. Poulsen (2020). Unravelling glacial hydroclimate in the Indo-Pacific Warm Pool: perspectives from water isotopes. *Paleoceanography and Paleoclimatology*, 35, e2020PA003985.

66. **Tierney, J. E.**, C. J. Poulsen, I. P. Montañez, T. Bhattacharya, R. Feng, H. L. Ford, B. Hönisch, G. N. Inglis, S. V. Petersen, N. Sagoo, C. R. Tabor, K. Thirumalai, J. Zhu, N. J. Burls, Y. Goddéris, G. L. Foster, B. T. Huber, L. C. Ivany, S. K. Turner, D. J. Lunt, J. C. McElwain, B. J. W. Mills, B. L. Otto-Bliesner, A. Ridgwell, Y. G. Zhang (2020). Past climates inform our future. *Science*, 370, eaay3701.

65. **Tierney, J. E.**, J. Zhu, J. King*, S. B. Malevich†, G. J. Hakim, C. Poulsen (2020). Glacial cooling and climate sensitivity revisited. *Nature*, 584, 569–573.

64. Inglis, G. N. and **J. E. Tierney** (2020). "The TEX_{86} Paleotemperature Proxy", *Elements in Geochemical Tracers in Earth System Science*. Cambridge: Cambridge University Press.

63. Inglis, G. N., F. Bragg, N. Burls, D. Evans, G. L. Foster, M. Huber, D. J. Lunt, N. Siler, S. Steinig, R. Wilkinson, E. Anagnostou, M. Cramwinckel, C. J. Hollis, R. D. Pancost, and **J. E. Tierney** (2020). Global mean surface temperature and climate sensitivity of the EECO, PETM and latest Paleocene. *Climate of the Past*, 16, 1953–1968.

62. McClymont, E. L., H. L. Ford, S. L. Ho, J. C. Tindall, A. M. Haywood, M. Alonso-Garcia, I. Bailey, M. A. Berke, K. Littler, M. O. Patterson, B. Petrick, F. Peterse, A. C. Ravelo, B. Risebrobakken, S. De Schepper, G. E. A. Swann, K. Thirumalai, **J. E. Tierney**, C. van der Weijst, S. White, A. Abe-Ouchi, M. L. J. Baatsen, E. C. Brady, W.-L. Chan, D. Chandan, R. Feng, C. Guo, A. S. von der Heydt, S. Hunter, X. Li, G. Lohmann, K. H. Nisancioglu, B. L. Otto-Bliesner, W. R. Peltier, C. Stepanek, Z. Zhang (2020). Lessons from a high-CO_2 world: an ocean view from $\sim$ 3 million years ago. *Climate of the Past* 16, 1599–1615.

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60. Stokke, E. W.**, M. T. Jones, **J. E. Tierney**, H. H. Svensen, J. H. Whiteside (2020). Temperature changes across the Paleocene-Eocene Thermal Maximum–a new high-resolution TEX_{86} temperature record from the Eastern North Sea Basin. *Earth and Planetary Science Letters*, 544, 116388.

59. Martínez-Sosa, P*, **J. E. Tierney**, L. K. Meredith (2020). Controlled lacustrine microcosms show a brGDGT response to environmental perturbations. *Organic Geochemistry*, 145, 104041.

58. Muñoz, S. E., T. J. Porter, A. Bakkelund, J. Nusbaumer, S. G. Dee, B. Hamilton, L. Giosan, **J. E. Tierney** (2020). Lipid Biomarker Record Documents Hydroclimatic Variability of the Mississippi River Basin During the Common Era. *Geophysical Research Letters*, 47, e2020GL087237.

57. DiNezio, P. N., M. Puy, K. Thirumalai, F.-F. Jin, **J. E. Tierney** (2020). Emergence of an equatorial mode of climate variability in the Indian Ocean. *Science Advances*, 6, eaay7684.

56. Kaufman, D., N. McKay, C. Routson, M. Erb, B. Davis, O. Heiri, S. Jaccard, **J.E. Tierney** *et al.* (2020). A global database of Holocene paleotemperature records. *Scientific Data*, 7, 115, https://doi.org/10.1038/s41597-020-0445-3

55. Feakins, S. J., H. M. Liddy, L. Tauxe, V. Galy, X. Feng, **J. E. Tierney**, Y. Miao, and S. Warny (2020). Miocene C_4 grassland expansion as recorded by the Indus Fan. *Paleoceanography and Paleoclimatology*, 35, e2020PA003856.

54. Crampton-Flood, E. D.**, **J. E. Tierney**, F. Peterse, F. M. S. A. Kirkels, and J. S. Sinninghe Damsté (2020). BayMBT: A Bayesian calibration model for branched glycerol dialkyl glycerol tetraethers in soils and peats. *Geochimica et Cosmochimica Acta*, 268, 142–159.

53. **Tierney, J. E.**, S. B. Malevich†, W. Gray, L. Vetter, K. Thirumalai (2019). Bayesian Calibration of the Mg/Ca Paleothermometer in Planktic Foraminifera, *Paleoceanography and Paleoclimatology*, 34, 2005–2030. https://doi.org/10.1029/2019PA003744.

52. Zhu, J., C. J. Poulsen, and **J. E. Tierney** (2019). Simulation of Eocene extreme warmth and climate sensitivity through low cloud feedbacks. *Science Advances*, 5, eaax1874, https://doi.org/10.1126/sciadv.aax1874.

51. **Tierney, J. E.**, A. M. Haywood, R. Feng, T. Bhattacharya† & B. L. Otto-Bliesner (2019). Pliocene warmth consistent with greenhouse gas forcing. *Geophysical Research Letters*, 46, 9136–9144, https://doi.org/10.1029/2019GL083802

50. Thirumalai, K., P. N. DiNezio, **J. E. Tierney**, M. Puy, M. Mohtadi (2019). An El Niño mode in the glacial Indian Ocean? *Paleoceanography and Paleoclimatology*, 34, 1316–1327, https://doi.org/10.1029/2019PA003669.

49. Hollis, C. J., T. Dunkley Jones, E. Anagnostou, P. Bijl, M. J. Cramwinckel, Y. Cui, G. R. Dickens, K. M. Edgar, Y. Eley, D. Evans, G. L. Foster, J. Frieling, G. N. Inglis, E. M. Kennedy, R. Kozdon, V. Lauretano, C. H. Lear, K. Littler, N. Meckler, B. D. A. Naafs, H. Pälike, R. D. Pancost, P. Pearson, D. L. Royer, U. Salzmann, B. Schubert, H. Seebeck, A. Sluijs, R. Speijer, P. Stassen, **J. E. Tierney**, A. Tripati, B. Wade, T. Westerhold, C. Witkowski, J. C. Zachos, Y. Zhang, M. Huber, and D. J. Lunt. (2019) The DeepMIP contribution to PMIP4: methodologies for selection, compilation and analysis of latest Paleocene and early Eocene climate proxy data, incorporating version 0.1 of the DeepMIP database. *Geoscientific Model Development*, 12, 3149-3206. https://doi.org/10.5194/gmd-2018-309.

48. Malevich, S. B.†, L. Vetter, and **J. E. Tierney** (2019). Global Core Top Calibration of $\delta^{18}O$ in Planktic Foraminifera to Sea Surface Temperature. *Paleoceanography and Paleoclimatology*, 34, https://doi.org/10.1029/2019PA003576

47. Windler, G.*, **J. E. Tierney**, P. N. DiNezio, K. Gibson, R. Thunell (2019). Shelf exposure influence on Indo-Pacific Warm Pool climate for the last 450,000 years. *Earth and Planetary Science Letters*, 516, 66–76. https://doi.org/10.1016/j.epsl.2019.03.038

46. Feakins, S. J., M. S. Wu, C. Ponton, **J. E. Tierney** (2019). Biomarkers reveal abrupt switches in hydroclimate during the last glacial in southern California. *Earth and Planetary Science Letters*, 515, 164–172. https://doi.org/10.1016/j.epsl.2019.03.024

45. Martínez-Sosa, P* and **J. E. Tierney** (2019). Lacustrine branched GDGT response to microcosm and mesocosm incubations. *Organic Geochemistry*, 127, 12–22, https://doi.org/0.1016/j.orggeochem.2018.10.011.

44. DiNezio, P. N., **J. E. Tierney**, B. L. Otto-Bliesner, A. Timmermann, T. Bhattacharya, N. Rosenbloom, E. Brady (2018). Glacial changes in tropical climate amplified by the Indian Ocean. *Science Advances*, 4, eaat9658.

43. Bhattacharya, T.†, **J. E. Tierney**, J. A. Addison, and J. W. Murray (2018). Ice sheet modulation of deglacial North American Monsoon intensification. *Nature Geoscience*, 11, 848–852 https://doi.org/10.1038/s41561-018-0220-7.

42. **Tierney, J. E.** and M. P. Tingley (2018). BAYSPLINE: a new calibration for the alkenone paleothermometer. *Paleoceanography and Paleoclimatology*, 33, 281–301, https://doi.org/10.1002/2017PA003201.

41. Ummenhofer, C. C., M. Kulüke and **J. E. Tierney** (2018). Extremes in East African hydroclimate and links to Indo-Pacific variability on interannual to decadal timescales, *Climate Dynamics*, 50, 2971–2991. https://doi.org/10.1007/s00382-017-3786-7.

40. Smerdon, J. E., J. Luterbacher, S. J. Phipps, K. J. Anchukaitis, T. Ault, S. Coats, K. M. Cobb, B. I. Cook, C. Colose, T. Felis, A. Gallant, J. H. Jungclaus, B. Konecky, A. LeGrande, S. Lewis, A. S. Lopatka, W. Man, J. S. Mankin, J. T. Maxwell, B. L. Otto-Bliesner, J. W. Partin, D. Singh, N. J. Steiger, S. Stevenson, **J. E. Tierney**, D. Zanchettin, H. Zhang, A. R. Atwood, L. Andreu-Hayles, S. H. Baek, B. Buckley, E. R. Cook, R. D'Arrigo, S. G. Dee, M. Griffiths, C. Kulkarni, Y. Kushnir, F. Lehner, C. Leland, H. W. Linderholm, A. Okazaki, J. Palmer, E. Piovano, C. C. Raible, M. P. Rao, J. Scheff, G. A. Schmidt, R. Seager, M. Widmann, A. P. Williams, E. Xoplaki (2017). Comparing proxy and model estimates of hydroclimate variability and change over the Common Era, *Climate of the Past*, 13, 1851–1900, https://doi.org/10.5194/cp-13-1851-2017.

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27. Toomey, M. R., J. P. Donnelly and **J. E. Tierney** (2016). South Pacific hydrologic and cyclone variability during the last 3,000 years, *Paleoceanography*, 31, 491–504. doi: 10.1002/2015PA002870.

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25. **Tierney, J. E.**, F. S. R. Pausata, and P. B. deMenocal (2016). Deglacial Indian monsoon failure and North Atlantic stadials linked by Indian Ocean surface cooling, *Nature Geoscience*, 9, 46–50. doi: 10.1038/ngeo2603.

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23. **Tierney, J. E.** and M. P. Tingley (2015). A TEX_{86} surface sediment database and extended Bayesian calibration, *Scientific Data*, 2, No. 150029, doi: 10.1038/sdata.2015.29.

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19. **Tierney, J. E.** and M. P. Tingley (2014), A Bayesian, spatially-varying calibration for the TEX_{86} proxy, *Geochimica et Cosmochimica Acta*, 127, 83–106. doi: 10.1016/j.gca.2013.11.026.

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17. DiNezio, P. N. and **J. E. Tierney** (2013), The effect of sea level on glacial Indo-Pacific climate, *Nature Geoscience*, 6, 485–491. doi: 10.1038/ngeo1823.

16. **Tierney, J. E.**, J. E. Smerdon, K. J. Anchukaitis, and R. Seager (2013), Multidecadal variability in East African hydroclimate controlled by the Indian Ocean, *Nature*, 493, 389–392. doi: 10.1038/nature11785.

15. Anchukaitis, K. J. and **J. E. Tierney**, (2013), Identifying coherent spatiotemporal modes in time-uncertain proxy paleoclimate records, *Climate Dynamics*, 41(5–6), 1291–1306. doi: 10.1007/s00382-012-1483-0

14. **Tierney, J. E.**, D. W. Oppo, A. N. LeGrande, Y. Huang, Y. Rosenthal and B. K. Linsley, (2012), The influence of Indian Ocean atmospheric circulation on Warm Pool hydroclimate during the Holocene epoch, *Journal of Geophysical Research–Atmospheres*, 117, D19108, doi:10.1029/2012JD018060.

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12. **Tierney, J. E.**, GDGT Thermometry: Lipid tools for reconstructing paleotemperatures (2012), in: "Reconstructing Earth's Deep Time Climate", *The Paleontological Society Papers* 18, 115–131.

11. **Tierney, J. E.**, S. Schouten, A. Pitcher, E. C. Hopmans and J. S. Sinninghe Damsté (2012), Core and intact polar glycerol dialkyl glycerol tetraethers (GDGTs) in Sand Pond, Warwick, Rhode Island (USA): Insights into the origin of lacustrine GDGTs, *Geochimica et Cosmochimica Acta*, 77, 561-581, doi:10.1016/j.gca.2011.10.018.

10. **Tierney, J. E.**, S. C. Lewis, B. I. Cook, A. N. LeGrande and G. A. Schmidt (2011), Model, proxy and isotopic perspectives on the East African Humid Period, *Earth and Planetary Science Letters*, 307,103-112, doi: 10.1016/j.epsl.2011.04.038.

9. **Tierney, J. E.**, J. M. Russell, J. S. Sinninghe Damsté, Y. Huang and D. Verschuren (2011), Late Quaternary behavior of the East African monsoon and the importance of the Congo Air Boundary, *Quaternary Science Reviews*, 30(7-8), 798-807, doi: 10.1016/j.quascirev.2011.01.017.

8. **Tierney, J. E.**, J. M. Russell, H. Eggermont, E. C. Hopmans, D. Verschuren and J. S. Sinninghe Damsté (2010), Environmental controls on branched tetraether lipid distributions in tropical East African lake sediments, *Geochimica et Cosmochimica Acta*, 74(17), 4902-4918, doi: 10.1016/j.gca.2010.06.002.

7. **Tierney, J. E.**, M. T. Mayes, N. Meyer, C. Johnson, P. W. Swarzenski, A. S. Cohen and J. M. Russell (2010), Late-twentieth-century warming in Lake Tanganyika unprecedented since AD 500, *Nature Geoscience*, 3(6), 422-425, doi: 10.1038/NGEO865.

6. **Tierney, J. E.**, D. W. Oppo, Y. Rosenthal, J. M. Russell and B. K. Linsley (2010), Coordinated hydrological regimes in the Indo-Pacific region during the past two millennia, *Paleoceanography*, 25, PA1102, doi: 10.1029/2009PA001871.

5. **Tierney, J. E.**, J. M. Russell and Y. Huang (2010), A molecular perspective on Late Quaternary climate and vegetation in the Lake Tanganyika basin, East Africa, *Quaternary Science Reviews*, 29(5-6), 787-800, doi: 10.1016/j.quascirev.2009.11.030.

4. **Tierney, J. E.** and J. M. Russell (2009), Distributions of branched GDGTs in a tropical lake system: Implications for lacustrine application of the MBT/CBT paleoproxy, *Organic Geochemistry*, 40(9), 1032-1036, 10.1016/j.orggeochem.2009.04.014.

3. Agnihotri, R., M. A. Altabet, T. D. Herbert and **J. E. Tierney** (2008), Subdecadally resolved paleoceanography of the Peru margin during the last two millennia, *Geochemistry, Geophysics, Geosystems*, 9, Q05013, doi: 10.1029/2007GC001744.

2. **Tierney, J. E.**, J. M. Russell, Y. Huang, J. S. Sinninghe Damsté, E. C. Hopmans and A. S. Cohen (2008), Northern Hemisphere controls on tropical southeast African climate during the past 60,000 years, *Science*, 322(5899), 252-255, doi: 10.1126/science.1160485.

1. **Tierney, J. E.** and J. M. Russell (2007), Abrupt climate change in southeast tropical Africa influenced by Indian monsoon variability and ITCZ migration, *Geophysical Research Letters*, 34(15), L15709, doi: 10.1029/2007GL029508.

Fellowships and Awards

The National Science Foundation Alan T. Waterman Award, 2022

Packard Fellowship in Science and Engineering, 2015–2020

University of Arizona College of Science Galileo Circle Curie Award, 2019

University of Arizona Department of Geosciences Outstanding Faculty Award, 2019

Editor's Citation for Excellence in Refereeing - Paleoceanography and Paleoclimatology, 2018

University of Arizona Honors College Excellence in Teaching Award, 2017

Pieter Schenck Award (European Association of Organic Geochemists), given "to a scientist normally under 35 years of age who has made a major contribution in any specific area of organic geochemistry or a related field," 2015

James B. Macelwane Medal (American Geophysical Union), "for significant contributions to the geophysical sciences by an outstanding early career scientist," 2014

Fellow of the American Geophysical Union, 2014

NOAA/UCAR Climate and Global Change Postdoctoral Fellowship, 2010–2012

Sigma Xi Outstanding Graduate Student Award, Brown University 2010

National Defense Science and Engineering Graduate Fellowship, 2006–2009

Current Research Grants

Heising-Simons Foundation, 1/1/25–12/31/27; "Renewed support for paleoCAMP: A multidisciplinary summer school for graduate students in paleoclimatology." $450,000.

Heising-Simons Foundation #2023-4716, 1/1/24–12/31/28; "paleoWeather: A new paradigm for examining extreme events in past climates." $582,325.

NSF ANS-2202667, 8/14/22–8/13/26; "A paleoclimate reanalysis of the coupled Greenland Ice Sheet–climate evolution during the Last Interglacial." $387,546.

NSF AGS-2203000, 7/1/22–6/30/26; "Collaborative Research: P2C2–Constraining Cloud and Convective Parameterizations Using Paleoclimate Data Assimilation." $260,333.

NSF RISE-2227754, 6/10/22–6/9/27; "2022 Alan T. Waterman Award." $1,000,000.

Packard Foundation Fellowship, 10/15/15–10/14/25. $875,000.

Previous Research Grants

Heising-Simons Foundation, 1/1/21–8/31/25; "paleoCAMP (Paleoclimate training in Climate Archives, Models, and Proxies): A multidisciplinary summer school for graduate students in paleoclimatology." $425,166.

David and Lucile Packard Foundation, 5/1/2023–4/30/2025, "Augmenting paleoCAMP: A multidisciplinary summer school for graduate students in paleoclimatology." $50,000.

NSF AGS-2002398, 6/1/20–5/31/24; "Collaborative Research: Quantifying the sea-surface temperature pattern effect for Last Glacial Maximum and Pliocene constraints on climate sensitivity." $122,779.

American Chemical Society Petroleum Research Fund, 1/1/20–12/31/22; "Determination of Ancient Depositional Environments via Multivariate Analyses of Glycerol Ether Lipids." $110,000.

"A Billion Year History of Earth's Temperature: The PhanTASTIC+ Project" (Privately Funded through the Smithsonian Institution, it supported postdoctoral scholar Dr. Emily Judd).

NSF EAR-1812525, 8/15/18–7/31/23; "Collaborative Research: Anatomy of a Greenhouse World: The Early Eocene of the Green River Basin, Wyoming." $203,536.

NSF OCE-1651034, 5/1/17–4/30/23; "Molecular views of past changes in the North American monsoon." $504,970.

Heising-Simons Foundation, 6/1/16–12/31/22; "Paleoclimate data assimilation for deep time." $598,231.

NSF AGS-1903171, 8/14/19–7/31/22; "Collaborative Research: A Paleoclimate Perspective on the Response of Southwest North American Rainfall to Elevated Greenhouse Gases." $62,899.

NSF AGS-1602301, 8/1/16–6/30/20; "Collaborative Research: Paleoclimate Reanalysis: New views of past climates." $345,604.

NSF EAR-1451818, 9/1/15–8/1/19; "Collaborative Research: Validation of the Lacustrine Branched GDGT Paleothermometer". $224,947.

National Geographic Society, 1/1/16–12/31/17; "Biomarker views of Kalahari climate change." $20,480.

NSF OCE-1203892, 8/15/12–8/14/16; "Collaborative Research: A combined proxy and model investigation of Late Holocene paleoclimate in the Horn of Africa." $336,514.

NSF AGS-1443176, 6/15/14–6/14/16; "EAGER: Development of a multivariate biomarker analysis technique for paleoclimate reconstruction." $75,894.

NSF EAR-1412195, 12/1/13–11/30/14; "RAPID: Analyzing $\delta \mathrm{D}_{wax}$ in the Dead Sea DSDDP Core as an indicator of aridity and a stratigraphic aide." $48,279.

Teaching

THE UNIVERSITY OF ARIZONA — Tucson, AZ

Graduate classes

Organic Geochemistry (GEOS 486/586)
The Dynamics of Warm Climates Seminar (GEOS 596H)
Climate & Tectonics Seminar (GEOS 596E)
African Paleoclimate Seminar (GEOS 596H)

Undergraduate classes

History of Earth's Climate (GEOS 342)
Ocean Sciences (GEOS 412A and 412B)

Advising

Postdoctoral Scholars

Elke Zeller (2024–)

Ronnakrit Rattanasriampaipong (2024–)

Jordan Abell (2021–2024) Current position: Assistant Professor at Lehigh University.

Andrew Walters (2020–2023) Current position: Assistant Professor at Cornell College.

Emily Judd (2020–2023) Current position: Climate Research Analyst at NIWA.

Matthew Osman (2019–2022) Current position: Lecturer at Cambridge University.

Lauren O'Connor (2019–2021) Current position: Postdoctoral scholar at Utrecht University.

Steven Brewster Malevich (2017–2019) Current position: Analyst, Rhodium Group.

Tripti Bhattacharya (2016–2018) Current position: Thonis Family Associate Professor at Syracuse University.

Graduate Students: Primary Advisor

Maya Tessler (2024–present, PhD)

Trang Tran (2023–present, PhD)

Kira Harris (2020–present; MS & PhD, co-Primary advisor)

Aria Blumm (2020–2022; MS, Primary advisor) Current position: Experienced consultant, West Monroe, Los Angeles, CA.

Jonathan King (2018–2022; PhD, co-Primary advisor) Current position: USGS Mendenhall postdoctoral scholar

Dervla Meegan Kumar (2018–2022; PhD, Primary advisor) Current position: Postdoctoral Scholar w/ Dr. Jane Baldwin, UC Irvine.

Pablo Martínez Sosa (2016–2022; MS & PhD, Primary advisor) Current position: Postdoctoral Researcher at Sorbonne Université

Grace Windler (2016–2021; MS & PhD, Primary advisor) Current position: Hydrologist for the Bureau of Reclamation, Sacramento, CA.

Graduate Students: Advisory Committee Member

Ana Isabel Gonzalez Mendez (2022–present; MS & PhD)

Hope Simonoko (2022–2023; MS)

Maya Prabhakar (2020–2022; MS)

Allie Berry (2020–2022; MS)

Emma Reed (2019–2021; PhD)

Connor Nolan (2019; PhD)

Gloria Jimenez (2018; PhD)

Elizabeth Patterson (2017–2018; MS)

Jhon Sebastian Jimenez (2017–2020; PhD)

Mathew Fox (2016–2020; PhD)

Jennifer Kielhofer (2016–2020; PhD)

Jessie Pearl (2015–2019; PhD)

Undergraduate Students

THE UNIVERSITY OF ARIZONA

Jeshua Case Gonzalez (2016-2017), Nicholas Montiel (2016-2018), Mikayla Gerdes-Morgan (2016-2018), Mary Kavanaugh (2017), Julia Huls (2017), Natasha Rapp (2017), Tianshu Kong (2017), Richard Marcelain (2017-2018), Leah Ortega (2017-2019), Andrea Mason (2018-2019), Matt Banaszynski (2018-2019), Katherine Graves (2018-2020), Logan McCarty (2019-2021), Duaa Radhi Al Abbas (2021), Ron Cline (2021-2022), Taylor Elpers (2021-2022), Katy Flor (2021-2022), Lauren Gilmore (2022-2023), Veronica Hill (2023), Caitlin Dowd (2022-2025), Ruby Baldwin (2023-2025)

Service

Professional service at the University of Arizona *[Department in brackets]*

Committee chair, 2023–, Awards committee [Geosciences]

Committee member, 2020–present, Diversity, Equity and Inclusion committee [Geosciences]

Committee chair, 2019–2020, Diversity, Equity and Inclusion committee [Geosciences]

Search committee chair, Paleoclimatology Hire, Spring 2018; Paleontology Lecturer Hire, Spring 2016. [Geosciences]

Search committee member, Gem Science Hire, Fall 2019; Marine Geosciences Hire, Spring 2018 [Geosciences]; Physical Meteorology Hire, Spring 2016 [Hydrology and Atmospheric Sciences].

Committee member, 2018–2019, Graduate admissions [Geosciences]

Head Judge, GeoDaze, Spring 2018. [Geosciences]

Guest Lecturer, The University of Arizona Osher Lifelong Learning Institute

Professional service outside the University of Arizona

Current

Leadership Team and Lead Coordinator, paleoCAMP (summer school for graduate students in Paleoclimatology): https://paleoclimate.camp/.

Committee Member, CESM Scientific Steering Committee, National Center for Atmospheric Research (NCAR).

Editor, *AGU Advances*

Production Editor, *Advances in Geochemistry and Cosmochemistry*

Committee Member, NOAA Climate and Global Change Postdoctoral Selection Committee.

AGU Distinguished Lecturer, 2023-2024.

Professional Affiliations with the American Geophysical Union, American Quaternary Association, and American Meteorology Society.

Professional Reviewer of journal manuscripts for *Science*, *Science Advances*, *Nature*, *Nature Geoscience*, *Nature Communications*, *Proceedings of the National Academy of Sciences USA*, *Climate of the Past*, *Organic Geochemistry*, *Geochimica et Cosmochimica Acta*, *Geophysical Research Letters*, *Earth and Planetary Science Letters*, *Quaternary Science Reviews*, *The Holocene*, *Journal of Geophysical Research-Biogeosciences*, *Geology*, and *Paleoceanography and Paleoclimatology*.

Previous

Lead Author, Intergovernmental Panel on Climate Change Sixth Assessment Report, Working Group I

Associate Editor, Geochimica et Cosmochimica Acta, 2018–2023

AGU Fellows Selection Committee, Paleoceanography & Paleoclimatology, 2019–2021.

Panel Reviewer, NSF EAR Geobiology and Low-Temperature Geochemistry Program, NSF EAR Sedimentology and Paleobiology Program, NSF Paleo Perspectives on Climate Change (P2C2), NSF Marine Geology and Geophysics Program.

Session convener, Fall American Geophysical Union Meeting (2009, 2013, 2015, 2017, 2021).

Public Outreach

Expert Participant the House of Representatives Select Committee on the Climate Crisis, "Briefing on the IPCC's 6th Assessment Report," September 2021.

Guest Speaker Saddlebrooke Science Cafe and Nature Club

Ongoing educational collaboration with the Arizona-Sonora Desert Museum involving high school Junior Docents in research, and the design of new exhibit components featuring paleoclimate and climate change.

Selected Media features

"Scientists have captured Earth's climate over the last 485 million years. Here's the surprising place we stand now." The Washington Post, Sept. 19, 2024, https://www.washingtonpost.com/climate-environment/2024/09/19/earth-temperature-global-warming-planet/. A feature article on our temperature history of the past 485 million years, published in *Science* in 2024.

"An Unequivocal Truth," Arizona Illustrated, Nov 12, 2021, https://tv.azpm.org/p/archive/2021/11/12/203211-an-unequivocal-truth/. A feature piece about the IPCC report, what it means for Arizonans, and investigating how the North American monsoon will respond to climate change.

"Code Red warning about the future of climate change," Matter of Fact TV with Soledad O'Brien, Aug 15, 2021, https://www.matteroffact.tv/code-red-warning-about-the-future-of-climate-change/. In this interview I discuss the implications of the recent IPCC report for extreme weather and climate in the United States.

"How the past hints about our climate's future," Science Friday, Dec 18, 2020 https://www.sciencefriday.com/segments/geologic-past-climate-future/. This interview describes how paleoclimate can inform future climate change.

"Ice Age Temperatures Help Predict Future Warming," Scientific American, 60-second Science, Sept 16, 2020 https://www.scientificamerican.com/podcast/episode/ice-age-temperatures-help-predict-future-warming/. This short podcast describes how our research on the Ice Age improves our knowledge of future climate change.

"Ocean's floor could provide weather clues," Cronkite News, Nov 2, 2018 https://www.youtube.com/watch?v=_dEt5aT6Z5U. This TV spot features our paleoclimate work on the North American monsoon and implications for future climate prediction.

"The Sahara wasn't always covered in sand dunes," The Show, KJZZ radio station, Feb 10, 2017. http://theshow.kjzz.org/content/434136/sahara-desert-wasnt-always-covered-sand-dunes. In this episode of *The Show* on Phoenix's KJZZ, I discuss our Green Sahara research with Mark Brodie.

"The fats that take scientists back in time," Feb 2, 2017. https://www.chemistryworld.com/feature/chemical-fossils/2500243.article. This online feature piece in *Chemistry World* by reporter Andy Extance featured my research based on using fossil fats to reconstruct climate change.

"Scientist loves climate history – and her tattoo proves it,"
Oct 31, 2015. http://tucson.com/news/blogs/scientific-bent/scientist-loves-climate-history-and-her-tattoo-proves-it/article_7b687698-9a94-5ba6-9040-ca520d11f88d.html. This piece in the *Arizona Daily Star* by reporter Tom Beal highlights my African climate change research, my Packard Fellowship, and my scientific tattoo.