

Álvaro Montenegro

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Employment

- Associate Professor 2018 to present
Ohio State University
Department of Geography, Columbus, OH, USA.
- Assistant Professor 2012 to 2018
Ohio State University
Department of Geography, Columbus, OH, USA.
- Assistant Professor 2009 to 2012
St. Francis Xavier University
Department of Earth Sciences, Antigonish, NS, Canada.
- Postdoctoral Fellow 2004-2009
University of Victoria, Victoria, BC, Canada.
Research in climatology and climate-human interaction.
- Consultant
 - The Pacific Climate Impacts Consortium , Victoria, BC, Canada. 07/2006 - 01/2009
Research in regional climate impacts.
 - Canadian Parks and Wilderness Society, Vancouver, BC, Canada. 08/2008 - 04/2009
Climate impacts on regional oceanography and marine ecosystems.
 - Business Consultant 1998-1999
Montenegro e Associados. São Paulo, SP, Brazil.
Health plan product development. General financial consulting.
- Science Writer 1997-1998
Folha de São Paulo daily newspaper. São Paulo, SP, Brazil.
Developing and writing science related stories for the daily publication.

Academic and Administrative Appointments

- Chair, Atmospheric Sciences Graduate Program 2022
Ohio State University
- Director, Atmospheric Sciences Program 2014 to 2020
Ohio State University
- Chair, Atmospheric Sciences Graduate Program 2014-2016
Ohio State University

- Adjunct Professor 2012 to present
St. Francis Xavier University
Department of Earth Sciences, Antigonish, NS, Canada.
- Visiting Professor 2013-2015
UNESP - Campus do Litoral Paulista, São Vicente, SP, Brazil.

Courses taught

- Ohio State University 2012 to present
 - Introduction to Meteorology (undergraduate)
 - Research Design (graduate)
 - Environmental Variability and Human Migration (graduate)
 - Biogeography (undergraduate)
 - Global Climate Change: Causes and Consequences (undergraduate)
 - Climate System Modeling: Basics and Applications (undergraduate/graduate)
 - Introduction to Weather and Climate (undergraduate)
 - Basic Meteorology and Climatology (undergraduate)
 - Our Global Environment (undergraduate)
 - Environmental Conservation (graduate/undergraduate)
- UNESP, various units, SP, Brazil. 2009 and 2013 - 2015
 - Climatology and Climate Change (graduate/undergraduate)
 - Introduction to Climate Modeling (graduate/undergraduate)
- St. Francis Xavier University 2009 to 2012
 - Quantitative Methods in Earth Sciences (undergraduate)
 - Earth Systems Science (undergraduate)
 - Physical Oceanography (undergraduate)
 - Oceanography (undergraduate)
- University of Victoria. 2004 - 2009
 - Descriptive Physical Oceanography (undergraduate)
 - Introduction to the Earth System (undergraduate)
 - Introduction to Physical Oceanography (graduate/undergraduate)
 - Understanding the World Oceans (undergraduate)

Education

- Ph.D. Physical Oceanography 1999-2003
Florida State University. Tallahassee, FL, USA.
- M.S. Physical Oceanography 1997-1999
University of São Paulo. São Paulo, SP, Brazil.
- B.S. Oceanography - Coastal Resources Management 1992-1996
University of Rio Grande. Rio Grande, RS, Brazil.
- B.A. Business and Administration 1988-1992
EAESP - Getúlio Vargas Foundation. São Paulo, SP, Brazil.

Awards and Grants

2021-2027 Maritime Encounters. Riksbanken Jubileums (Sweden). EU 4.7 million
 2017 - OSU Steam Powered Projects - U\$10,000
 2015 - FAPESP-OSU Regular Research Award - U\$100,000
 2014 - Lawrence A. Brown Faculty Fellowship Award - U\$5,000
 2013 - FAPESP-OSU Mobility Grant - U\$20,000
 2010 - The Atlantic Computational Excellence Network Graduate Fellowship, Cn\$20,000
 2010 - Natural Sciences and Engineering Research Council of Canada Individual Discovery Grant - Cn\$110,000
 2000 - South Atlantic Climate Change Consortium research aid - U\$1,200
 1999 - CNPq (Brazilian Federal Government) Ph.D. Grant - U\$150,000
 1997 - Fapesp (São Paulo State) M.S. Grant - U\$20,000

Editorial Activities

2017 to present - Editor, PeerJ - the Journal of Life & Environmental Sciences
 2014 to present - Editorial Advisory Board, De Gruyter Open's Open Access Books program in Geography
 2016 to present - Editorial Board, AIMS Geosciences Journal
 2016 - Guest Editor - AIMS Geosciences special issue: Global Temperature and Climate Change

Publications

† indicates PhD advisee; * indicates undergraduate advisee; § indicates undergraduate advisee

Submitted

Bengtsson. B. K., A. Montenegro, J. Ling, M. Tomasini, C. Horn, *Exploring the western Maritime Trade route: How Great Orme copper (and Cornish tin) made it into Scandinavia c. 1600-1400 BC I. Assessing feasibility and presenting initial results based on agent-based simulations*, in Maritime Encounters 2, Presenting Counterpoints to the Dominant Terrestrial Narrative of European Prehistory, J.T. Koch, M. Fauvelle, B. Cunliffe and J. Ling, Eds., Oxbow Books. Barnsley, UK

Montenegro, A., M. Gavazzi[§], C. Ocobock and S. M. Fitzpatrick, *Potential role of thermoregulatory energetic demands on body size and type of Pacific island populations*, under review at American Anthropologist.

In press and published:

Slayton, E, K. Jarriel, A. Montenegro, C. Safadi, K. Smith and S. Zaia, 2025, *Seafring and Modeling*, Journal of Maritime Archaeology, 20, 601-628. doi.org/10.1007/s11457-025-09455-5.

Hubbe, M. et al., 2025, *Late Quaternary population expansion in grey brocket deer [Subulo gouazoubira (G. Fisher, 1814), Cervidae, Mammalia] in Brazil*, Journal of Quaternary Science, 40, 1031-1042, doi.org/10.1002/jqs.3728.

Gaffney, D., A. Oertle, A. Montenegro, E.N.I. Djami, A.R. Macap, T. Russell, D. Tanudirjo, 2025, *Marsupial dispersals and bone tool manufacture in the Circum-New Guinea Islands during the Terminal Pleistocene to Mid Holocene*, Journal of Archaeological Science, 179, /doi.org/10.1016/j.jas.2025.106241.

Bengtsson, B. K., A. Montenegro, A. Green, M. Tomasini, M. Prince, V.W. Skarstrom, K.I. Austvoll, J. Ling, C. Lindhe, 2025, *Seafaring and navigation in the Nordic Bronze Age. Comparing direct open water crossings with sheltered coastal routes using an ocean voyage simulation tool*, Plos One, 20. doi.org/10.1371/journal.pone.0320791

Jarriel, K., M. Borreggine, K. Lim, A. Mochtar, A. Montenegro. 2025 *Disaster, Risk, and Resilience: Considerations for Modelling Small-Scale Island and Coastal Communities*, in press, International Journal of Nautical Archaeology.

Montenegro, A., 2025, *Seafaring in Prehistory: Simulations and Experiments*, in: The Oxford Handbook of Island and Coastal Archaeology, S. M. Fitzpatrick and J. Erlandson (eds.), in press. doi.org/10.1093/oxfordhb/9780197607770.001.

Fauvelle, M. and A. Montenegro, 2024 *Do Stormy Seas Lead to Better Boats? Exploring the Origins of the Southern Californian Plank Canoe Through Ocean Voyage Modeling*, Coastal and Island Archaeology. DOI:10.1080/15564894.2024.2311107

Gaffney, D., D.A. Tanudirjo, E.N.I. Djami et al., 2023 *Human dispersal and plant processing in the Pacific 55,000– 50,000 years ago*, Antiquity, 98, 885-904, Cambridge University Press

Montenegro, A., A. Niclou, A. Anderson, S.M. Fitzpatrick and C. Ocobock, 2023 *Energetic demands of thermoregulation during canoe passages from Tahiti to Hawaii and New Zealand, a simulation analysis*, in press Plos One, doi. org/10.1371/journal.pone.0287290

Marochi, M.Z., F.R. De Grande, J.C.F. Pardo, A. Montenegro and T.M. Costa, 2022. *Marine heatwave impacts on newly-hatched planktonic larvae*, Estuarine, Coastal and Shelf Science, 278. doi.org/10.1016/j.ecss.2022.108122.

Temmen, J., A.* Montenegro, S. Juras[§], J. Field and J. DeGrand, 2022, *Floating the Sweet Potato to Polynesia: Considering the feasibility of oceanic drift for the prehistoric introduction of the sweet potato (Ipomoea batatas) to Pacific Islands*, Quaternary Sciences Reviews, 295. https://doi.org/10.1016/j.quascirev.2022.107709

Callaghan, R., A. Montenegro, and S. M. Fitzpatrick, 2022. *The Effects of Intra- and Inter-annual Wind and Current Variation on Sailing Raft Travel along the Pacific Coast of the Americas*, in Waves of Influence: Pacific Maritime Networks Connecting Mexico, Central America, and Northwestern South America, C.S. Beekman and C. McEwan, eds. Dumbarton Oaks Pre-Columbian Symposia and Colloquia series, Harvard University Press, Cambridge, MS. ISBN 9780884024897

D'Cunha, M.G.T.* , A. Montenegro and J. Field, 2021 *Modeling water crossings leading to the arrival of early Homo in Sulawesi, Indonesia via paleoclimate drift experiments*, Journal of Archaeological Sciences: Reports.40, <https://doi.org/10.1016/j.jasrep.2021.103194>

Aguiar, W., K. J. Meissner, A. Montenegro, L Prado, I. Wainer, A.E. Carlson and M. M. Mata, 2021 *Magnitude of the 8.2 ka event freshwater forcing based on stable isotope modelling and comparison to future Greenland melting*, Scientific Reports, 11:5473, DOI:10.1016/j.quascirev.2020.106498

Zou, X., D.H. Bromwich, A. Montenegro S. Wang and L. Bai, 2021, *Major surface melting over the Ross Ice Shelf part II: Surface Energy Balance*, Quarterly Journal of the Royal Meteorological Society, DOI:10.1002/qj.4105

Zou, X., D.H. Bromwich, A. Montenegro, S. Wang and L. Bai, 2021, *Major surface melting over the Ross Ice Shelf part I: Fohn effect*, Quarterly Journal of the Royal Meteorological Society, DOI:10.1002/qj.4104

Aguiar, W., L. F. Prado, I. Wainer, Z. Liu, A. Montenegro, K. J. Meissner and M. M. Mata, 2020 *Freshwater forcing control on early-Holocene South American Monsoon*, Quaternary Sciences Reviews, 245. doi.org/10.1016/j.quascirev.2020.106498

Chandrasa, G.* and A. Montenegro, 2019, *Evaluation of Regional Climate Model Simulated Rainfall over Indonesia and its Application for Downscaling Climate Projections*, International Journal of Climatology, DOI: 10.1002/joc.6316.

Zou, X., D.H. Bromwich, J.P. Nicolas, A. Montenegro and S. Wang, 2018, *West Antarctic Surface Melt Event of January 2016 Facilitated by Fohn Warming*, Quarterly Journal of the Royal Meteorological Society, 145:687-704, DOI: 10.1002/qj.3460

Pickler, C., E.G. Fausto, H. Beltrami, J. Mareschal, F. Suarez, A. Chacon-Oecklers, N. Blin, M.T, Cortes, A. Montenegro, R. Harris and A. Tassara, 2018, *Recent climate variations in Chile: constraints from borehole temperature profiles*, Climates of the Past, 14, 559-575, doi:10.5194/cp-14-559-2018.

Maas, Dv.L., R. Lal, K. Coleman, A. Montenegro and W.A. Dick, 2017, *Modeling Soil Organic Carbon in Corn-based Systems in Ohio*, Journal of Soil and Water Conservation, 72, 191-204, doi:10.2489/jswc.72.3.191

Montenegro, A., R. Callaghan and S.M. Fitzpatrick, 2016, *Using Seafaring Simulations and Shortest Hop Trajectories to Model the Prehistoric Colonization of Remote Oceania*, 2016, Proceedings of the National Academy of Sciences, 113, 12685-12690, doi: 10.1073/pnas.1612426113.

DiNezio, P, A. T.Axel , J. Tierney, F. F. Jin, B.L. Otto-Bliesner, N. Rosenbloom , B. Mapes , R. Neale, R. Ivanovic and A. Montenegro 2016, *The climate response of the Indo-Pacific warm pool to glacial sea level*, Paleoceanography, 31, 866-894, doi:10.1002/2015PA002890

Longobardi, P.*, A. Montenegro, H. Beltrami and M. Eby, 2016, *Deforestation induced climate change: Effects of spatial scale*, PlosOne, 11, e0153357, doi:10.1371/journal.pone.0153357

Wang, H. D. Liu, H. Lin, A. Montenegro and X. Zhu, 2015, *NDVI and Vegetation Phenology Dynamics under the Influence of Sunshine Duration on the Tibetan Plateau*, International Journal of Climatology, 35, 687-698, DOI: 10.1002/joc.4013.

Kim, H.L., A. Ratan, G.H. Perry, A. Montenegro, W. Miller and S.C. Schuster, 2014, *Khoisan hunter-gatherers have been the largest population throughout most of modern human demographic history*, *Nature Communications*, 5, 5692, DOI: 10.1038/ncomms6692.

Kistler, L., A. Montenegro, B.D. Smith, J.A. Gifford, R.E. Green, L.A. Newsom and B. Shapiro, 2014, *Trans-oceanic drift and the domestication of African bottle gourds in the Americas*, *Proceedings of the National Academy of Sciences*, 111, 2937-2941, doi/10.1073/pnas.1318678111

Montenegro, A., R. T. Callaghan and S. M. Fitzpatrick, 2014, *From west to east: Environmental influences on the rate and pathways of Polynesian colonization*, *The Holocene*, 24, 242-256, DOI: 10.1177/0959683613517402.

Murdock, T.Q., S. W. Taylor, A. Flower, A.Mehlenbacher, A. Montenegro, F. W. Zwiers and R. Alfaro, 2013, *Pest outbreak distribution and forest management impacts in a changing climate in British Columbia*, *Journal of Environmental Science & Policy*, 26, 75-89.

Arora, V. and A. Montenegro, 2011, *Small temperature benefits provided by realistic afforestation efforts*, *Nature Geoscience*, 4, 514-518, doi:10.1038/ngeo1182.

Montenegro, A., P. Spence, K. J. Meissner, M. Eby, M. J. Melchin and S.T. Johnston, 2011, *Climate simulations of the Permian-Triassic boundary: Ocean acidification and the extinction event*, *Paleoceanography*, 26, PA3207, doi:10.1029/2010PA002058

Carlson, M., J. Chen, S. Elgie, C. Henschel, A. Montenegro, N. Roulet, N. Scott, C. Tarnocai and J. Wells, *Maintaining the Role of Canada's Forests and Peatlands in Climate Regulation*, 2010, *Forestry Chronicle*, 86.

Spence, P., J.C.Fyfe, Montenegro, A. and A.J. Weaver, *On the Southern Ocean response to poleward intensifying winds: coarse versus eddy-permitting simulations*, 2010, *Journal of Climate*, 23, doi:10.1175/2010JCLI3098.1.

Montenegro, A., M. Eby, E. C. Wiebe and A. J. Weaver, 2009, *The net carbon drawdown of afforestation from satellite observations*, *Global and Planetary Change*, 69, 195-204, doi:10.1016/j.gloplacha.2009.08.005.

Eby, M., K. Zickfeld, A. Montenegro, A., D. Archer, K.J. Meissner and A.J. Weaver, *Lifetime of anthropogenic climate change*, 2009, 69, 195-204, doi:10.1175/2008JCLI2554.1, *Journal of Climate*.

Archer, D., M. Eby, V. Brovkin, A. Ridgwell, L. Cao, U. Mikolajewicz, K. Caldeira, K. Matsumoto, G. Munhoven, A. Montenegro and K. Tokos, *Atmospheric lifetime of fossil-fuel carbon dioxide*, 2009, 37, 117-134, 10.1146/annurev.earth.031208.100206 *Annual Reviews of Earth and Planetary Sciences*.

Meissner, K.J., A. Montenegro and C. Avis*, 2008, *Paleoceanography*. In: *Encyclopedia of Paleoclimatology and Ancient Environments*. Gornitz, V., Ed., *Encyclopedia of Earth Sciences Series*, Kluwer Academic Publishers.

Montenegro, A., C. Avis* and A.J. Weaver, 2008, *Modelling the pre-historic arrival of the sweet potato in Polynesia*, *Journal of Archaeological Science*, 35, 355-367

Avis, C, A.*, Montenegro and A.J. Weaver, 2008, *Simulating Island Discovery during the Lapita expansion*. In: *Canoes and voyaging in the South Pacific, from prehistory to present*, A. Di Piazza, E. Pearthree, F. Damon and C. Mondragon, Eds. Oxford: Archaeopress.

Montenegro, A., V. Brovkin, M. Eby, D. Archer and A.J. Weaver, 2007, *Long term fate of anthropogenic carbon*,

Geophysical Research Letters, 34, L10707, doi:10.1029/2007/GL030905.

Weaver, A.J., K. Zickfeld, A. Montenegro and M. Eby, 2007, *Long term climate implications of 2050 emission reduction targets*, Geophysical Research Letters, 34, L19703, doi:10.1029/2007/GL031018.

Montenegro, A., M. Eby, A.J. Weaver and Steven R. Jayne, 2007, *Response of a climate model to tidal mixing parameterization under present day and Last Glacial Maximum conditions*, Ocean Modelling, 19, 125-137.

Montenegro, A., and G.W. Weatherly, 2007, *Deep Variability in the Atlantic Western Boundary Current based on altimetric and XBT data*, J. Geophys. Research, 112, doi:10.1029/2005JC003237.

Avis, C.*, A. Montenegro and A.J. Weaver, *The discovery of Western Oceania: A new perspective*, 2007, Journal of Island and Coastal Archaeology, 2, 197-209, DOI:10.1080/15564890701518557.

Hetherington, R., A. J. Weaver and A. Montenegro, 2007, *Climate and the migration of early peoples into the Americas*. In: Coastline Changes: Interrelation of Climate and Geological Processes, Harff, J., Hay W.W., Tetzlaff, D.F., Eds., Interrelation of Climate and Geological Processes, Geological Society of America Special Paper 426, 113-132.

Montenegro, A., M. Eby, J. Kaplan, K.J. Meissner and A.J. Weaver, 2006, *Carbon storage on exposed continental shelves during the glacial-interglacial transition*. Geophys. Res. Lett., 33, L08703, doi:10.1029/2005GL025480.

Montenegro, A., A. Araujo, M. Eby, L.F. Ferreira, R. Hetherington and A.J. Weaver, 2006, *Parasites, paleoclimate and the peopling of the Americas: Using the hookworm to time the Clovis migration*. Current Anthropology, 47, 193-200.

Montenegro, A., R. Hetherington, M. Eby and A.J. Weaver, 2006, *Modelling pre-historic transoceanic crossings into the Americas*. Quaternary Science Reviews, 25, 1323-1338, doi:10.1016/j.quascirev.2005.11.008.

Montenegro, A. and C. A. Fonseca and E. J. Campos, 1999, *Implementation of the Princeton University Ocean Model for the study of circulation and dispersion of materials in the Todos os Santos Bay, Bahia* (in Portuguese). PUC-SP Cienc. Biol. Ambien., v.1, n.2, 115-129.

Silva, T. A. and R.O. Cavalli and A. Montenegro, 1995, *Burrowing of Penaeus paulensis Perez-Farfante, 1967 (Decapoda, Penaeidae) under laboratory conditions* (in Portuguese). Náuplius, v.3, 15-21.