

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 to present
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
 - Basic Meteorology (undergraduate)
 - 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 (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, Peer J - 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

In preparation

Gaffney, D., D.A. Tanudirjo, E.N.I Djami et al., *Early human dispersal along northern route to Sahul before 50,000 years ago*

Submitted

Montenegro. A., A. Niclou, A. Anderson, S.M Fitzpatrick and C. Ocobock *Energetic demands of thermoregulation during canoe passages from Tahiti to Hawaii and New Zealand, a simulation analysis*, submitted to PNAS

Nexus

In press and published:

Marochi, M.Z., F.R. De Grande, J.C.F. Pardo, A. Montenegro and T.M. Costa; *Marine heatwave impacts on newly-hatched planktonic larvae*, in press. Estuarine, Coastal and Shelf Science.

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

Chandrassa, 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. Tassarà, 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, *Transoceanic 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.