

SLOAN COATS

Curriculum Vitae

University of Hawaii, Manoa
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PROFESSIONAL APPOINTMENTS

University of Hawaii, Manoa, HI Assistant Professor, Department of Earth Sciences	2019-
Woods Hole Oceanographic Institution, Woods Hole, MA Assistant Scientist	2018-2019
National Center for Atmospheric Research, Boulder, CO Advanced Studies Program	2016-2017
University of Colorado, Boulder, CO CIRES Research Associate	2015-2016

TEACHING ACTIVITIES

University of Hawaii, Dept. of Earth Sciences, Manoa, HI Instructor: EARTH 250: Scientific Programming Instructor: EARTH 135: Natural Disasters and Human History	Fall 2020 Spring 2020
MIT-WHOI Joint Program, Woods Hole, MA Instructor: Geodynamics Seminar Series: North Atlantic Climate and Civilization Instructor: Current Climate Change Topics	Spring 2019 Fall 2018
University of Colorado, Dept. of Atmospheric and Oceanic Sciences, Boulder, CO Lecturer: Atmospheric and Oceanic Sciences 1060: Our Changing Environment	Spring 2016
Columbia University, Dept. of Earth & Environmental Sciences, New York, NY Teaching Assistant: Earth and Environmental Science 2100: The Climate System Teaching Assistant: Earth and Environmental Science 2100: The Climate System	Fall 2012 Fall 2011

EDUCATION

Columbia University, New York, NY Ph.D., Atmospheric Science, Department of Earth and Environmental Sciences* M.A., Atmospheric Science, Department of Earth and Environmental Sciences <i>*Dissertation awarded the Science for Society Prize</i>	2015 2012
University of California at Berkeley, Berkeley, CA B.A., <i>High Honors</i> , Environmental Economics and Policy B.S., <i>High Honors</i> , Geography	2009 2009

PUBLICATIONS

Published and In Press

26. Fan, Wenyuan, J.J. McGuire, C.D. de Groot-Hedlin, M.A. Hedlin, **S. Coats** and J.W. Fielder, Stormquakes, *Geophysical Research Letters*, 2019. DOI: <https://doi.org/10.1029/2019GL084217>
25. Parsons, L.A. and **S. Coats**, Ocean-Atmosphere trajectories of extended drought in southwestern North America, *Journal of Geophysical Research: Atmospheres*, 2019. DOI: <https://doi.org/10.1029/2019JD030424>
24. Cook, B.I., A.P. Williams, J.E. Smerdon, J.G. Palmer, E.R. Cook, D.W. Stahle and **S. Coats**, Cold tropical Pacific sea surface temperatures during the late sixteenth century North American megadrought, *Journal of Geophysical Research: Atmospheres*, 2019. DOI: <https://doi.org/10.1029/2018JD029323>
23. Samanta, D., K.B. Karnauskas, N. Goodkin, **S. Coats**, J.E. Smerdon and L. Zhang, Coupled model biases breed spurious low-frequency variability in the tropical pacific ocean, *Geophysical Research Letters*, 2018. DOI: <https://doi.org/10.1029/2018GL079455>
22. Herrera-Hernandez, D.A., T.R. Ault, J.T. Fasullo, **S. Coats**, C.M. Carrillo, B.I. Cook and A.P. Williams, Exacerbation of the 2013-2016 Pan-Caribbean drought by anthropogenic warming, *Geophysical Research Letters*, 2018. DOI: <https://doi.org/10.1029/2018GL079408>
21. Cook, B.I., A.P. Williams, J.E. Smerdon, J.G. Palmer, E.R. Cook, D.W. Stahle and **S. Coats**, Cold tropical Pacific sea surface temperatures during the late sixteenth-century North American megadrought, *Journal of Geophysical Research: Atmospheres*, 2018. DOI: <https://doi.org/10.1029/2018JD029323>
20. Parsons, L., **S. Coats** and J.T. Overpeck, The continuum of drought in Southwestern North America, *Journal of Climate*, 2018. DOI: <https://doi.org/10.1175/JCLI-D-18-0010.1>
19. **Coats, S.** and K.B. Karnauskas, A role for the Equatorial Undercurrent in the ocean dynamical thermostat, *Journal of Climate*, 2018. DOI: <https://doi.org/10.1175/JCLI-D-17-0513.1>
18. Stevenson, S., J.T. Overpeck, J. Fasullo, **S. Coats**, L. Parsons, B. Otto-Bliesner, T. Ault, G. Loope and J. Cole, Climate Variability, Volcanic Forcing, and Last Millennium Hydroclimate Extremes, *Journal of Climate*, 2018. DOI: [10.1175/JCLI-D-17-0407.1](https://doi.org/10.1175/JCLI-D-17-0407.1)
17. Ault, T., S. St. George, J.E. Smerdon, **S. Coats**, J.S. Rankin, C.C. Carillo, B.I. Cook and S. Stevenson, A robust null hypothesis for the potential causes of megadrought in western North America, *Journal of Climate*, 2018. DOI: [10.1175/JCLI-D-17-0154.1](https://doi.org/10.1175/JCLI-D-17-0154.1)
16. **Coats, S.** and K.B. Karnauskas, Are simulated and observed 20th century tropical Pacific sea surface temperature trends significant relative to internal variability?, *Geophysical Research Letters*, 2017. DOI: [10.1002/2017GL074622](https://doi.org/10.1002/2017GL074622)
15. Smerdon, J.E., J. Luterbacher, S.J. Phipps, K.J. Anchukaitis, T. Ault, **S. Coats**, et al., Comparing proxy and model estimates of hydroclimate variability and change over the Common Era, *Climate of the Past Discussions*, 2017. DOI: [10.5194/cp-13-1851-2017](https://doi.org/10.5194/cp-13-1851-2017)
14. Lehner, F., **S. Coats**, T.F. Stocker, A.G. Pendergrass, B.M. Sanderson, C.C. Raible and J.E. Smerdon, Projected drought risk in 1.5°C and 2.0°C warmer climates, *Geophysical Research Letters*, 2017. DOI: [10.1002/2017GL074117](https://doi.org/10.1002/2017GL074117)
13. Baek, S.H., J.E. Smerdon, **S. Coats**, B.I. Cook, R. Seager and A.P. Williams, Seasonality and teleconnection signals across the North American, Monsoon Asia, and Old World Drought Atlas, *Journal of Climate*, 2017. DOI: [10.1175/JCLI-D-16-0766.1](https://doi.org/10.1175/JCLI-D-16-0766.1)

12. Scheff, J., R. Seager, H. Liu and **S. Coats**, Are glacials dry? Consequences for paleoclimatology and for greenhouse warming, *Journal of Climate*, 2017. DOI: 110.1175/JCLI-D-16-0854.1
11. **Coats, S.** and J.S. Mankin, The challenge of accurately quantifying future megadrought risk in the American Southwest, *Geophysical Research Letters*, 2016. DOI: 10.1002/2016GL070445
10. **Coats, S.**, J.E. Smerdon, B.I. Cook, R. Seager, E.R. Cook and K.J. Anchukaitis, Internal ocean-atmosphere variability drives megadroughts in Western North America, *Geophysical Research Letters*, 2016. DOI: 10.1002/2016GL070105
9. **Coats, S.**, J.E. Smerdon, K.B. Karnauskas and R. Seager, The improbable but unexceptional occurrence of North American megadrought clustering during the Medieval Climate Anomaly, *Environmental Research Letters*, 2016. DOI: 10.1088/1748-9326/11/7/074025
8. Cook, B.I., E.R. Cook, J.E. Smerdon, R. Seager, A.P. Williams, **S. Coats**, D.W. Stahle and J.V. Diaz, North American megadroughts in the Common Era: Reconstructions and simulations, *WIREs Climate Change*, 2016. DOI: 10.1002/wcc.394
7. **Coats, S.**, D. Griffin, R. Seager, J.E. Smerdon and B.I. Cook, Winter-to-summer precipitation phasing in southwestern North America: A multi-century perspective from paleoclimatic model-data comparisons, *Journal of Geophysical Research: Atmospheres*, 2015. DOI: 10.1002/2015JD023085
6. Smerdon, J.E., **S. Coats** and T.R. Ault, Model-dependent spatial skill in pseudoproxy experiments testing climate field reconstruction methods for the Common Era, *Climate Dynamics*, 2015. DOI: 10.1007/s00382-015-2684-0
5. **Coats, S.**, B.I. Cook, J.E. Smerdon and R. Seager, North American pan-continental droughts in model simulations of the last millennium, *Journal of Climate*, 2015. DOI: 10.1175/JCLI-D-14-00634.1
4. **Coats, S.**, J.E. Smerdon, B.I. Cook and R. Seager, Are simulated megadroughts in the North American southwest forced?, *Journal of Climate*, 2015. DOI: 10.1175/JCLI-D-14-00071.1
3. Cook, B.I., J.E. Smerdon, R. Seager and **S. Coats**, Global warming and 21st century drying, *Climate Dynamics*, 2014. DOI: 10.1007/s00382-014-2075-y
2. **Coats, S.**, J.E. Smerdon, B.I. Cook and R. Seager, Stationarity of the tropical Pacific teleconnection to North America in the CMIP5/PMIP3 model simulations, *Geophysical Research Letters*, 2013. DOI: 10.1002/grl.50938
1. **Coats, S.**, J.E. Smerdon, R. Seager, B.I. Cook and J.F. González-Rouco, Megadroughts in southwestern North America in millennium-length ECHO-G simulations and their comparison to proxy drought reconstructions, *Journal of Climate*, 2013. DOI: 10.1175/JCLI-D-12-00603.1

Non Peer-Reviewed

1. **Coats, S.** and J.E. Smerdon, Climate variability: The Atlantic's internal drum beat, *Nature Geoscience*, 2017. DOI: 10.1038/ngeo2970

SELECTED PRESENTATIONS

10. **Coats, S.**, Reconciling contradictory tropical Pacific climate changes with the equatorial undercurrent, Princeton Climate Seminar Series, 2018 (Oral), UConn Center for Integrative Geosciences Seminar Series, 2018 (Oral), UCSB Speakers Club, 2019 (Oral).

9. **Coats, S.**, Paleoclimate constraints on the spatiotemporal scales of past and future droughts in climate models, GFDL Formal Seminar, 2017 (Oral), PAGES OSM, 2017 (Oral), AGU Fall Meeting, 2017 (Oral), University of Hawaii Atmospheric Science Seminar, 2020 (Oral).
8. **Coats, S.**, Characterizing North American droughts under different forcings in the CESM LME, PAGES YSM, 2017 (Poster), CESM Working Group Meeting, 2017 (Poster), LDEO Ocean and Climate Physics Seminar, 2019 (Oral).
7. **Coats, S.** and K.B. Karnauskas, Global warming and tropical Pacific sea surface temperature: Why models and observations do not agree, AGU Fall Meeting, 2016 (Oral) and EGU Meeting, 2017 (Oral).
6. **Coats, S.**, J.E. Smerdon, B.I. Cook, R. Seager, E.R. Cook and K.J. Anchukaitis, Internal ocean-atmosphere variability drives megadroughts in Western North America, CLIVAR Workshop on Decadal Variability and Predictability, 2015 (Oral) and AGU Fall Meeting, 2015 (Oral).
5. **Coats, S.**, B.I. Cook, J.E. Smerdon and R. Seager, North American pan-continental droughts in model simulations of the last millennium, AGU Fall Meeting, 2014 (Oral).
4. **Coats, S.**, J.E. Smerdon, B.I. Cook and R. Seager, Are simulated megadroughts in the North American southwest forced?, AGU Fall Meeting, 2013 (Poster).
3. **Coats, S.**, J.E. Smerdon, B.I. Cook and R. Seager, Stationarity of the tropical Pacific teleconnection to North America in the CMIP5/PMIP3 model simulations, Third International Workshop on Climate Informatics, 2013 (Poster).
2. **Coats, S.**, J.E. Smerdon, R. Seager, B.I. Cook and J.F. González-Rouco, Megadroughts in southwestern North America in millennium-length ECHO-G simulations and their comparison to proxy drought reconstructions, AGU Fall Meeting, 2012 (Poster).
1. **Coats, S.**, Q. Fu, J.E. Smerdon, A. Banerjee and R. Seager, Model-data comparisons of hydroclimate variability in the North American southwest using Markov Random Field methods for drought detection, Second International Workshop on Climate Informatics, 2012 (Oral + Poster).

MENTORING

Lucas Ellison (Department of Earth Sciences, Primary Advisor)
 Mathew Osmann (MIT-WHOI Joint Program, Advisory Committee)
 Elizabeth Wallace (MIT-WHOI Joint Program, Advisory Committee)
 Anna Black (Williams College '19, WHOI Summer Student Fellow, Primary Advisor)

FELLOWSHIPS AND AWARDS

DEES Science for Society Prize	2015
AGU Fall Meeting Outstanding Student Presentation Award	2013
Phi Beta Kappa	2009

SERVICE AND OUTREACH

IPCC AR6 Working Group 1 Contributing Author (Chapter 2)	
WHOI High Performance Computing Advisory Committee	2018-
ASP Thompson Lecture Organizing Committee	2016-2017
LDEO Division of Ocean and Climate Physics Seminar Organizer	2014-2015
Earth Institute Student Advisory Council	2012-2013

Reviewer: Journal of Climate, Geophysical Research Letters, Environmental Research Letters, Nature Climate Change, Nature Geoscience, Nature Communications, Journal Geophysical Research: Oceans, Climate of the Past Discussions.

2013-

FUNDING

NSF AGS-1805480:

2018-2021, "Collaborative Research: P2C2-A Model/Proxy Synthesis of Walker Circulation Trends During the Last Millennium", PIs Sloan Coats (WHOI), Bronwen Konecky (Wash U.), Sam Stevenson (UCSB), \$201,722 to Coats

NSF EAR-1702946:

2017-2020, "Collaborative Research: Diagnosing the Timing and Drivers of Northeastern Caribbean Holocene Droughts with Sinkhole Lake Records", PI Pete van Hengstum (Texas AM), co-PIs Sloan Coats (WHOI), Jeffrey Donnelly (WHOI), Sarah Feakins (USC), \$234,270 to Coats/Donnelly